



**AT&T**  
Teletype Corporation

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AT&T TELETYPE CORPORATION

MUSEUM EQUIPMENT

BOOK 1

P. 5  
P. 7  
P. 8  
P. 9  
P. 10

33

44  
45

WHEATSTONE TRANSMITTER

The earliest practical form of automatic telegraph system was that invented by Wheatstone in (c. 1860)\* in which the message to be transmitted was first transposed by an operator into the form of perforations in a paper tape; the perforations corresponding to the dot and dash Morse signalling code of the message. The perforated tape, "slip" as it was sometimes termed, was then passed through an automatic transmitter which examined the individual perforations in it and caused corresponding dot and dash signals to be transmitted to line.

The Wheatstone transmitter is essentially equivalent to a small and extremely light double-current Morse key, the movements of which are controlled automatically from the nature of the perforations in the perforated slip. The code holes in the perforated tape control the movements of a centrally pivoted divided lever. The divided level consists of two portions, insulated from each other but rigidly clamped together. Each half functions in a transmitting tongue and at its extremities carries contacts which play between fixed battery contacts.

\*According to one source (Freebody), the first automatic telegraph was invented by Wheatstone in 1867. According to another (Smithsonian Inst.), it was invented in 1858.

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YEARS PRODUCED & QUANTITY: c. 1858-1867

PRIMARY CUSTOMERS:

CLASSIFICATION CODE:

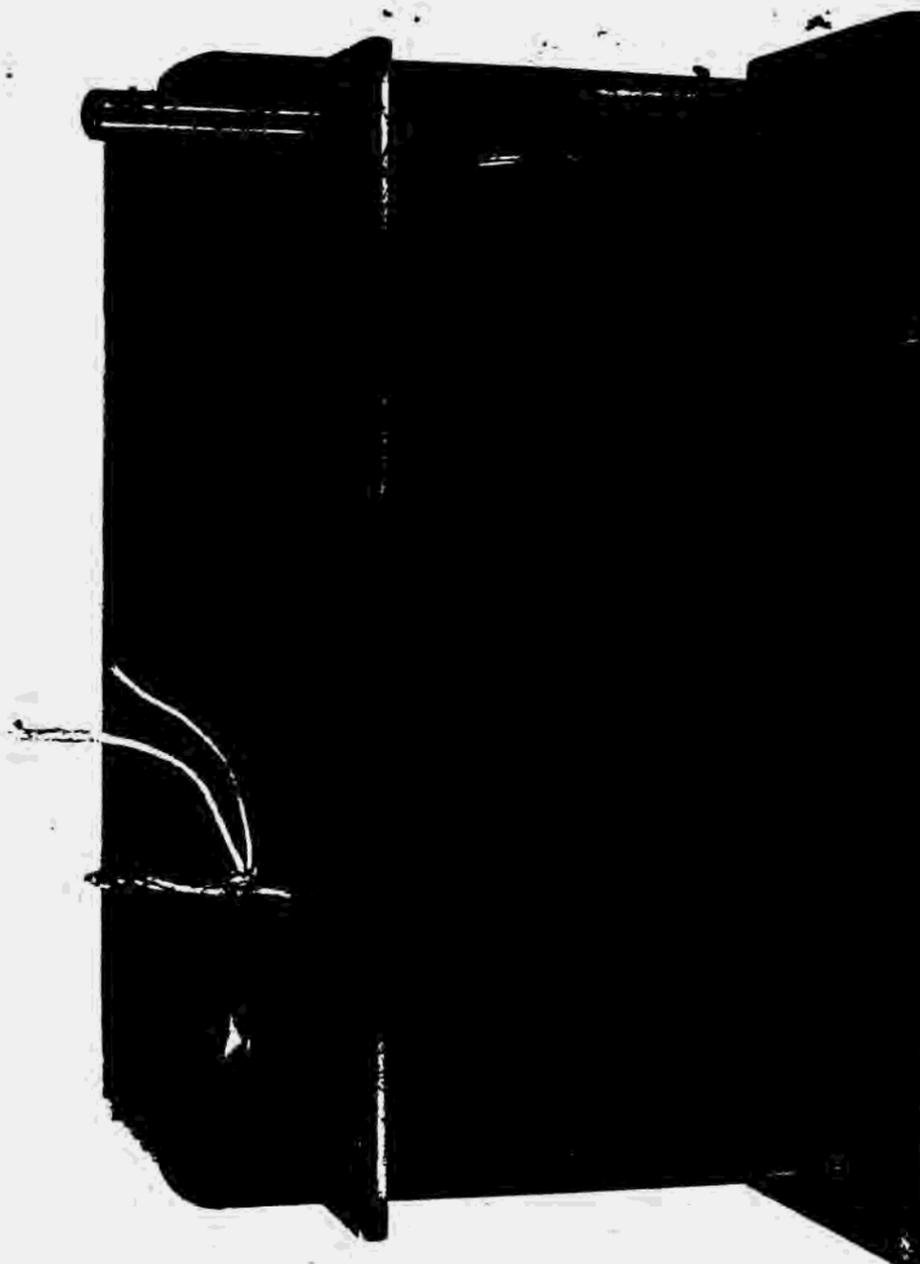
MUSEUM EQUIPMENT CODE: 3A-1

TECHNICAL BULLETINS & SPECS: NA

PHOTO NO(S): 690505-19

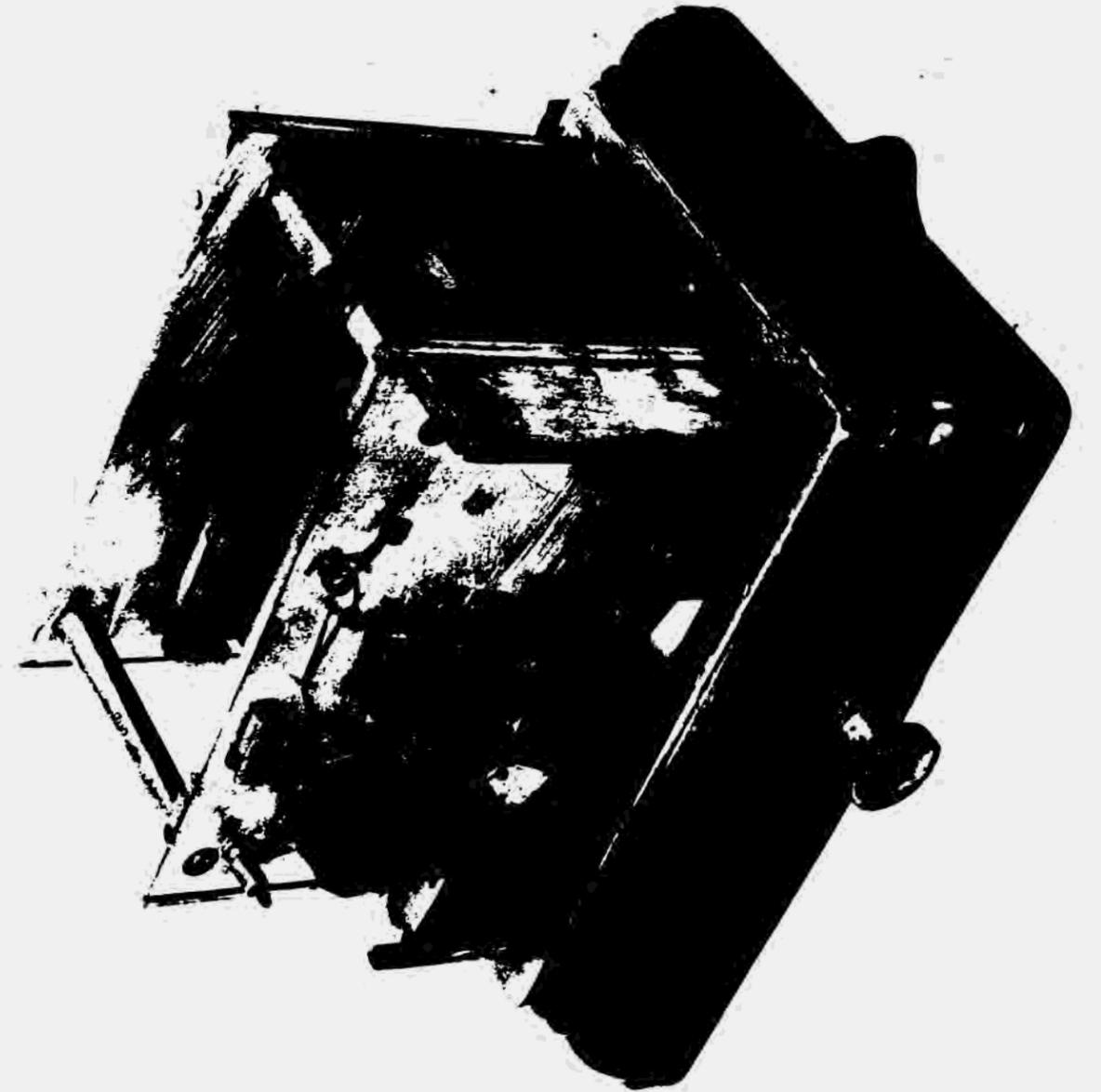
PATENT(S): British 1239, June 2, 1858.

LIBRARY REFERENCE(S): Freebody, Telegraphy, London, Sir Isaac Pitman & Son Ltd., 1958, pp. 42-46; "The Telegraph and the Telephone," James King, The Development of Electrical Technology in the 19th Century, United States National Museum Bulletin 228, Smithsonian Institute, Washington, D.C., 1962, pp. 294 and 297.

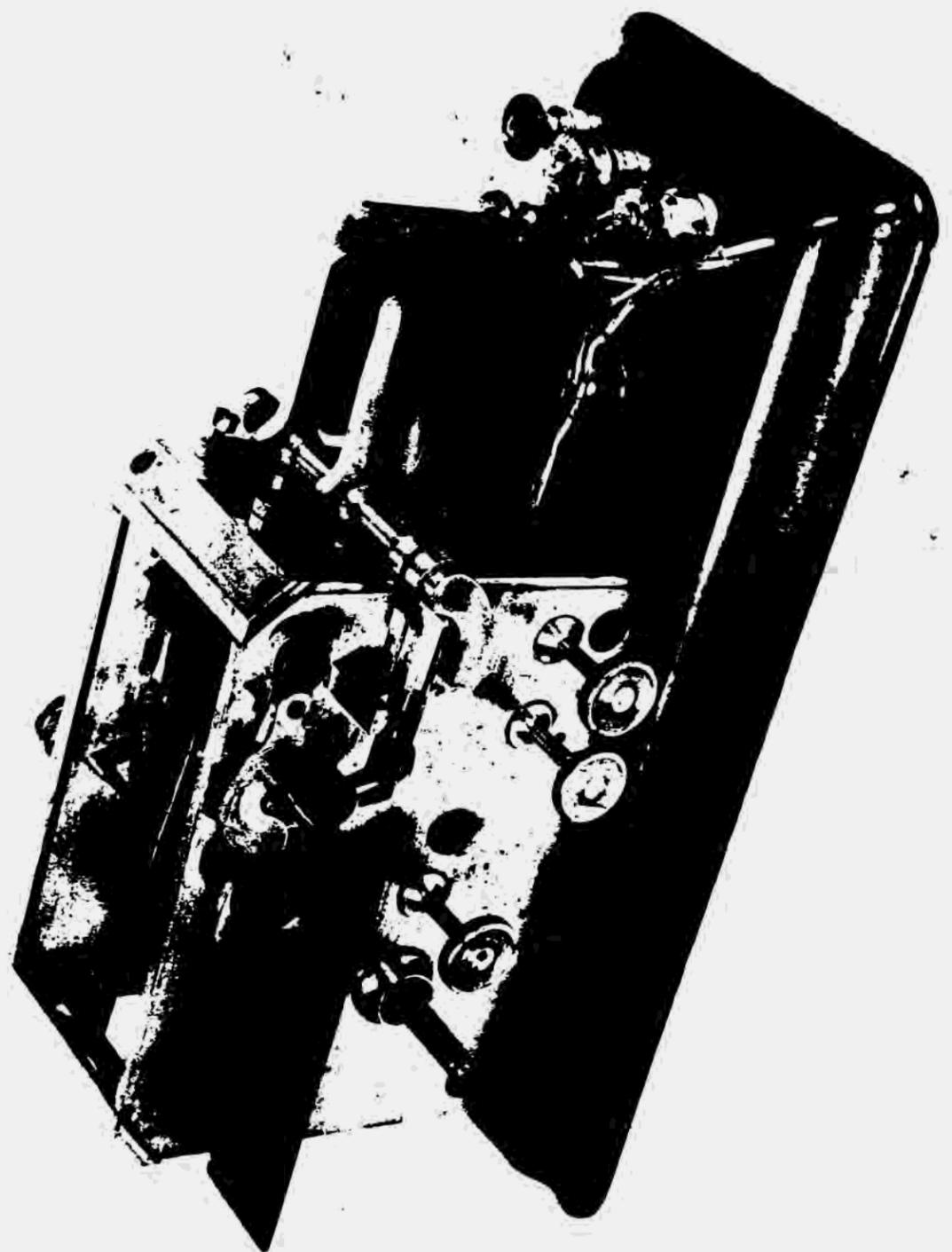
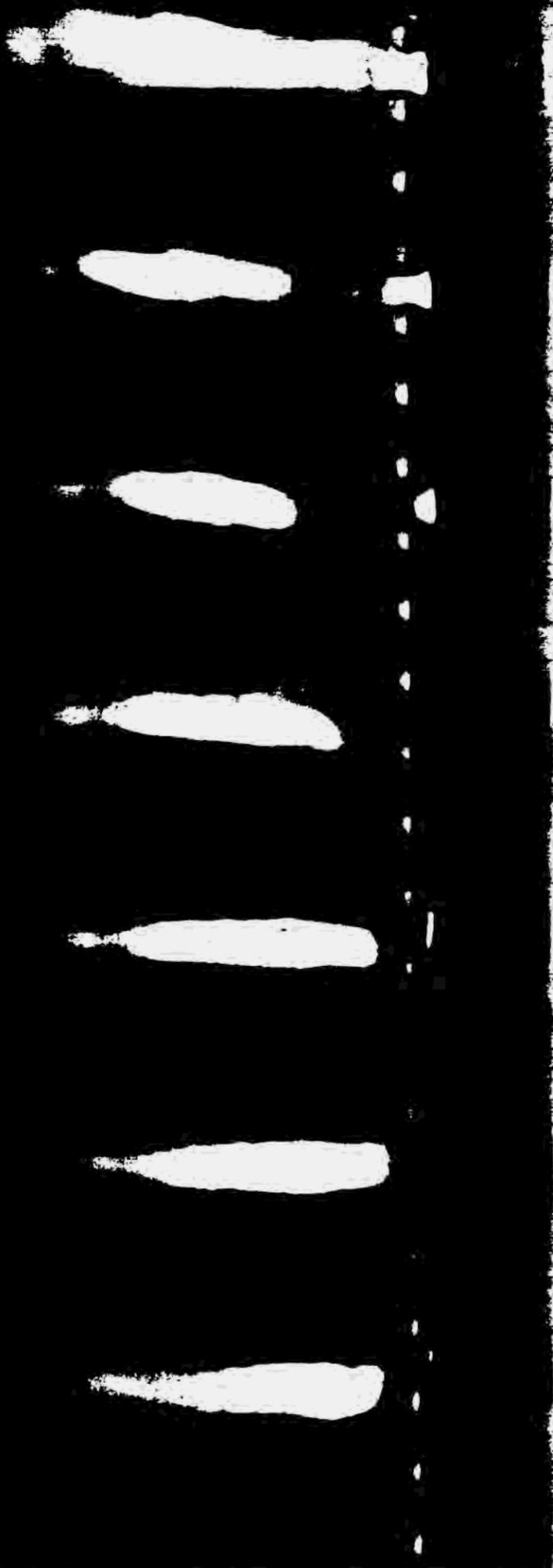


Donated to Edison Institut

6A-3  
WRIGHT MCKER



11A-4  
WHEATSTONE  
MONO-RECORDER



WHEATSTONE PERFORATOR (WPE)

The patent rights to this machine were procured by the Morkrum Company when they purchased the Kleinschmidt Electric Company.

It perforates Morse code in paper tape. The unit is a solenoid operated device for perforating Morse code in paper tape. One of the faults of the unit is the amount of noise it generates.

Difficulty with "bounce" in the feeding mechanism prompted a redesign which was used in production equipment associated with an automatic Baudot to Wheatstone converter system. The keylevers in this model are equipped with a horizontal surface just forward of the keylever guide. This surface accommodates the connecting links for operation with the converter units.

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YEARS PRODUCED & QUANTITY: 1926

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

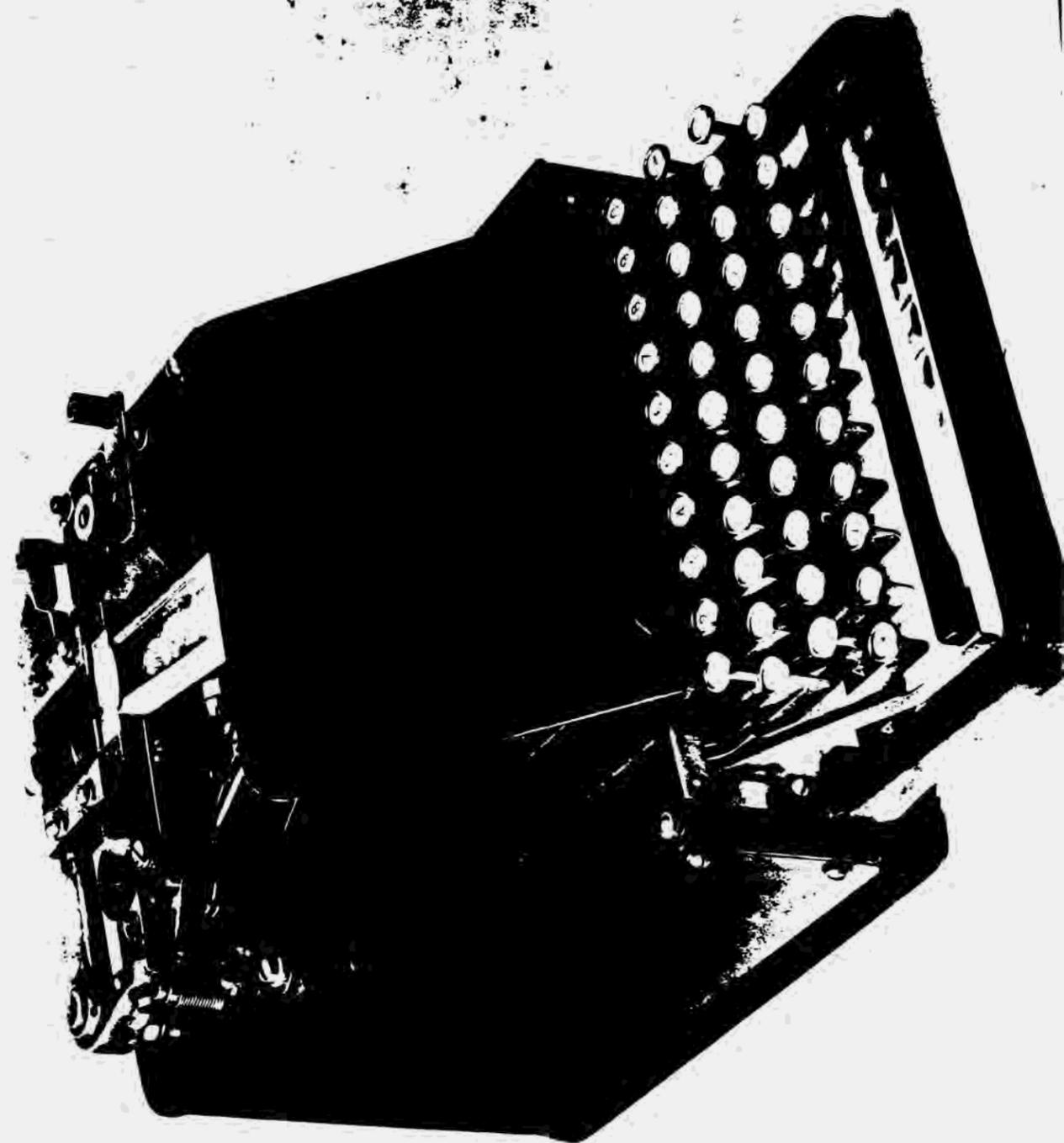
MUSEUM EQUIPMENT CODE: 4B-7

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 650624-33

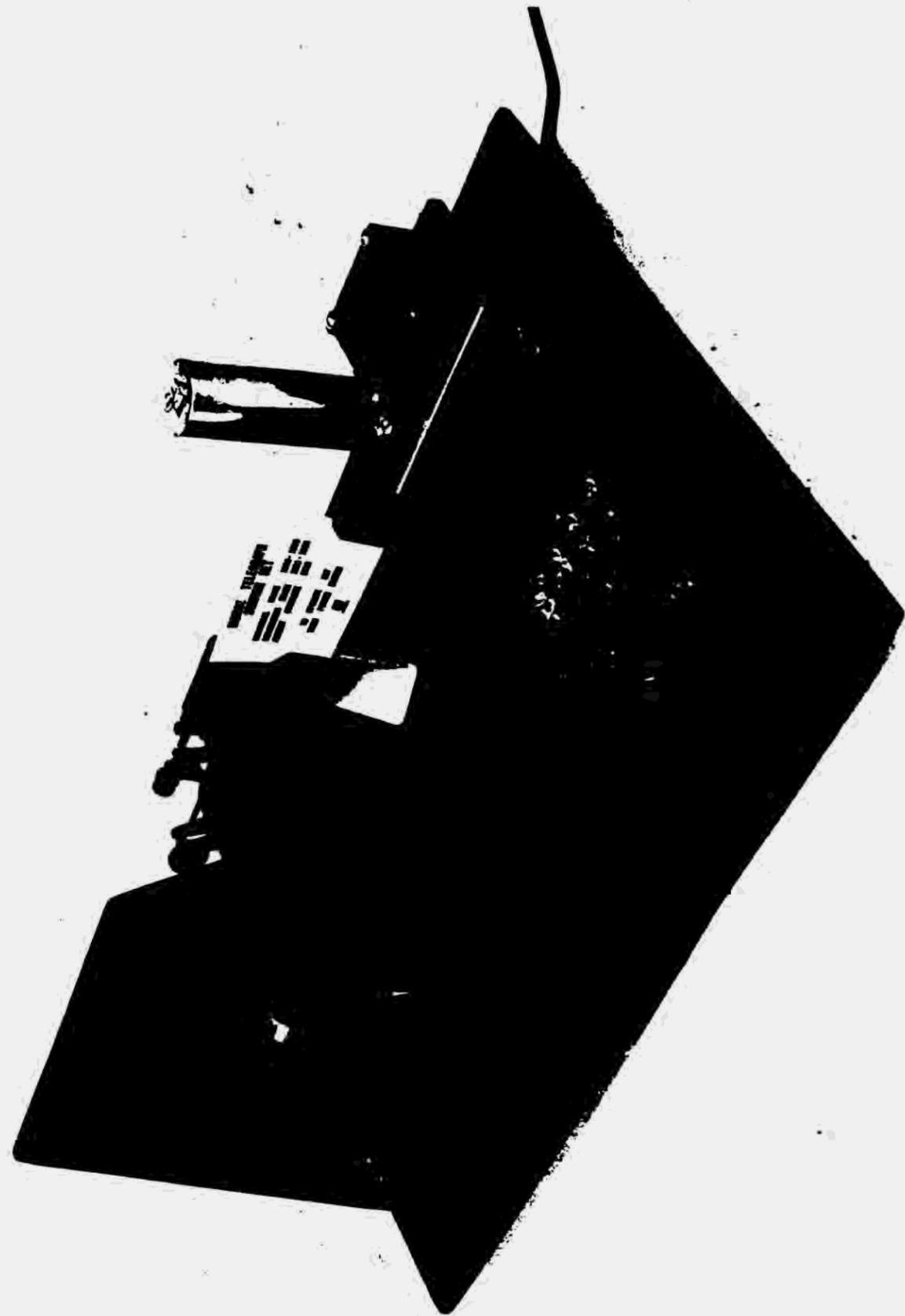
PATENT(S):

LIBRARY REFERENCE(S):



711-5  
Key and sounder  
Personal property of D. Nonnemaker 3352  
returned to Dale on 12-8-78 PPS

~~HAF~~ 11A =  
690505-37  
Thoree J. Nonnemaker  
Station set



BAUDOT TAPE PRINTER

This tape printer was used in connection with the Baudot Multiplex System invented by Emile Baudot of the French Telegraph Service, after whom it was named. The system was a time division system and utilized a) certain printing details of the Hughes' instrument, b) the distributor arrangements invented by Bernard Meyer in 1871, and employed in a Morse multiplex system, and c) the five-unit code of Gauss and Weber. These devices were combined by Baudot with original mechanical arrangements to produce a practical form of multiplex system. The first Baudot system was produced in 1874.

At first, Baudot employed the Hughes printer in connection with his Multiplex System. However, later he developed this very simple and sturdy printing unit, which printed in Roman characters on a tape, which was then gummed to the message form. The tape passed around a printing roll on an arm beneath the type-wheel, and to print a letter the arm was released, causing the tape to press against the type-wheel and receive the impression.

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YEARS PRODUCED & QUANTITY: After 1874 when Multiplex System was introduced.  
PRIMARY CUSTOMER(S): French Telegraph companies  
CLASSIFICATION CODE: NA  
MUSEUM CODE: 2A-1  
TECHNICAL BULLETINS & SPECS: NA  
PHOTO VO(S): 690505-35  
PATENT(S):

LIBRARY REFERENCES(S): Carr, J. O., "Development of Printing Telegraphy," R & D Monograph 1067, 1921, p. 122; Herbert, T. E., Telegraphy, pp. 517-19, 532-49; Freebody, J. W., Telegraphy, pp. 41-42.



KRUM-PEARNE TELEGRATYPE

The Krum-Pearne Telegratype was a keyboard transmitter which was probably used in conjunction with a magnet-driven Remington Typewriter. This was one of the units that was produced during a period of collaboration between Charles Krum, then Vice President of the Western Cold Storage Company, and Frank Pearne, a telegraph experimenter who soon became discouraged and took a teaching position at the Armour Institute of Technology.

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YEARS PRODUCED & QUANTITY: Experimental - c.1901-02

PRIMARY CUSTOMER(S): None

CLASSIFICATION CODE: None

MUSEUM CODE: 11A-6

TECHNICAL PUBLICATIONS & SPECS:

PHOTO NO(S): 690505-34

PATENT(S):

LIBRARY REFERENCES: Kleinschmidt, E. E., Printing Telegraphy...A New Era Begins, c. 1965, p. 17.



MODIFIED OLIVER

In 1908 Charles and Howard Krum developed and produced a working model of the four-unit-code, plus-minus, high-low-voltage system, which was applied to operate the mechanism of an Oliver typewriter. The first test of the Morkrum System was made on the Chicago & Alton Railroad, on October 20, 1908. A transmitting and receiving outfit was set up in the Chicago telegraph office of the railway, and connected together by means of a wire running from Chicago to Bloomington and return. The test was successful.

The receiving typewriter was controlled by a group of relays. The receiving relay was a polarized relay so devised that the contact tongue was centrally held, that is, not engaged with either contact, when there was no current flowing over the line. The first impulse, whether positive or negative, initiated the operation of the bank of relays and operated on or another of the first group, depending upon whether the first impulse was positive or negative. During the zero intervals between the first and second impulses, a switch relay came into operation and switched the line relay circuit to the next group, where the above operation was repeated and then the relay contacts would be switched to the next group and so on.

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YEARS PRODUCED & QUANTITY: Experimental - 1908-09.

PRIMARY CUSTOMER(S): None

CLASSIFICATION CODE: None

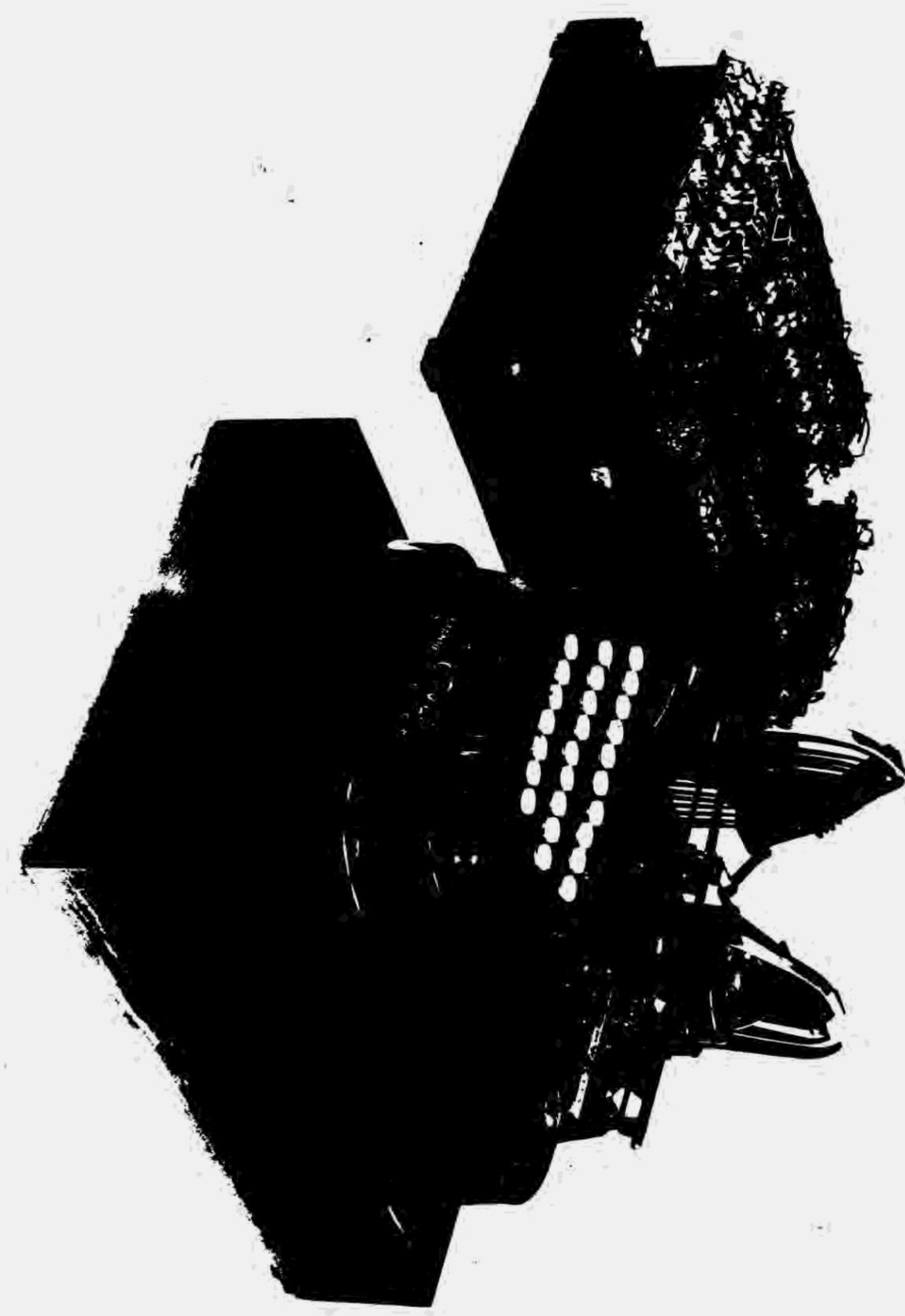
MUSEUM CODE: 1B-4

TECHNICAL PUBLICATIONS & SPECS: NA

PHOTO NO(S): 690505-33, 691112, 27, 10

PATENT(S): No. 1,199,011 C. L. Krum and H. L. Krum, Printing Telegraph Apparatus, filed 1/22/08, and granted 9/16/16; No. 1,137,146 C. L. Krum, Printing Telegraph Apparatus, filed 2/04/09, and granted 4/27/15.

LIBRARY REFERENCE(S): Kleinschmidt, E. E., Printing Telegraphy...A New Era Begins, p. 18.; Carr, J. O., "History of the Practical Development of the Morkrum Printing Telegraph System," (paper) c. 1923, pp. 1-2.



28-TYPE  
(MODEL "C")

The objective was to provide a higher speed, lighter weight, lower maintenance printer to largely be made up of punch press parts. The Model "C" used steel tapes for carriage positioning and a type-wheel selector rather than a type box as in later models. The Model "C" keyboard used 15 printer transmitter parts.

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YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

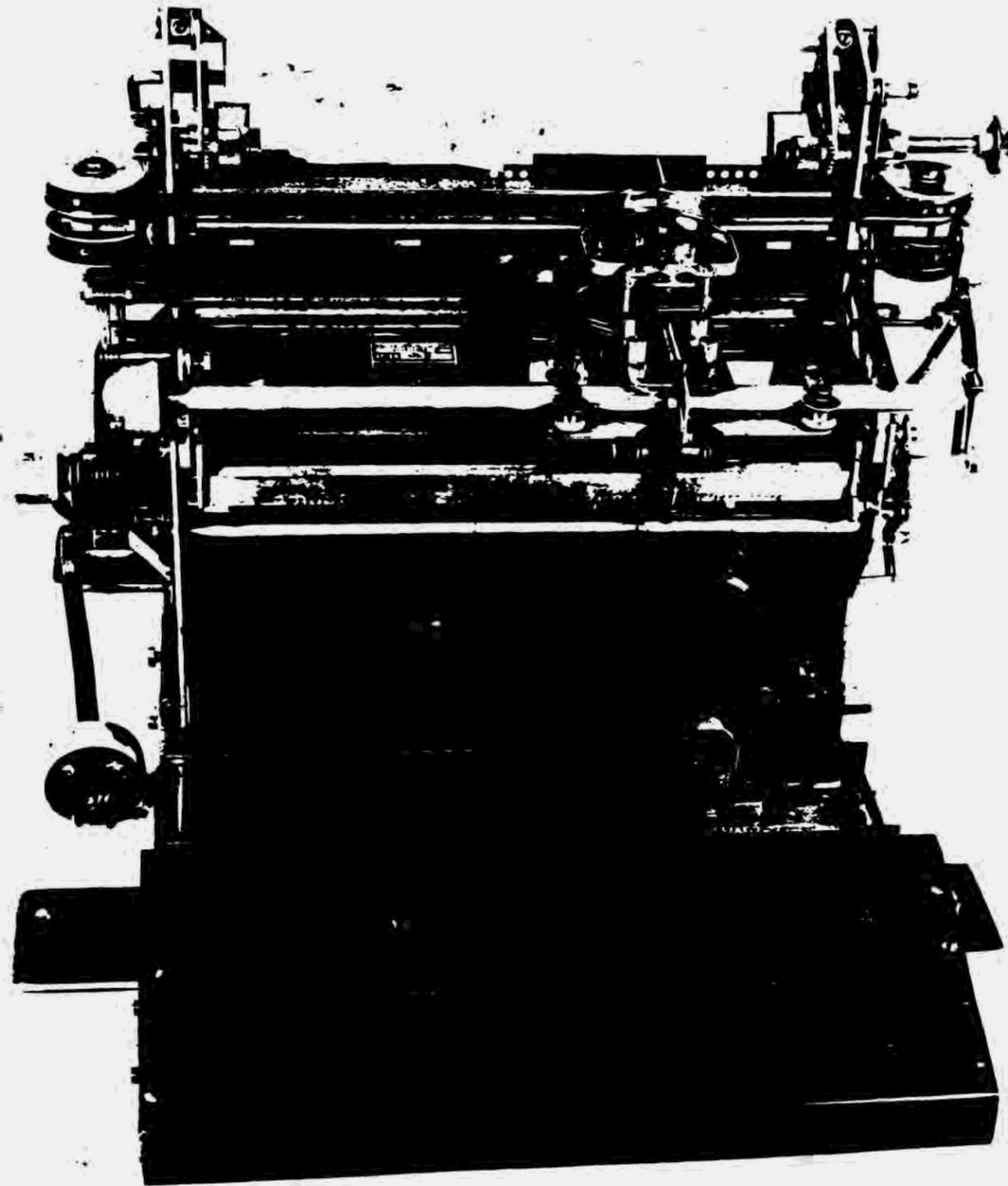
MUSEUM EQUIPMENT CODE: 1C-19

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 690505-26

PATENT(S):

LIBRARY REFERENCE(S):



BLICKENSDEFER ELECTRIC TYPEWRITER

Named after its inventor George C. Blickensderfer, this machine employed interchangeable type-wheels for impression, was a practical and of proven durability, and was sold and used in all countries of the world. The typewheel machine was invented by Louis Perrot. It had type characters on an upright cylinder which could be turned and shifted up or down to position any type at the printing position. Using this principle, Blickensderfer introduced his machine in 1893.

The true importance of the Blickensderfer in the history of Telegraphy was not seen until 1910, after successful experiments had been conducted using the Oliver typewriter. The Krum's employed the same system of the relay chain in cascade operation to operate a page printer using the mechanisms of the Blickensderfer typewriter. The successful sale of this apparatus to Postal Telegraph led to further research, and the substitution of a governed-motor-driven brush distributor to replace the relay cascade system. The new code selecting and printer control system was also adopted to operate the mechanism of the Blickensderfer. A number of printers using this method were constructed and named the "Morkrum Blue Code."

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YEARS PRODUCED & QUANTITY: 1893 (Quantity unknown)

PRIMARY CUSTOMER(S): Many in Europe.

CLASSIFICATION CODE:

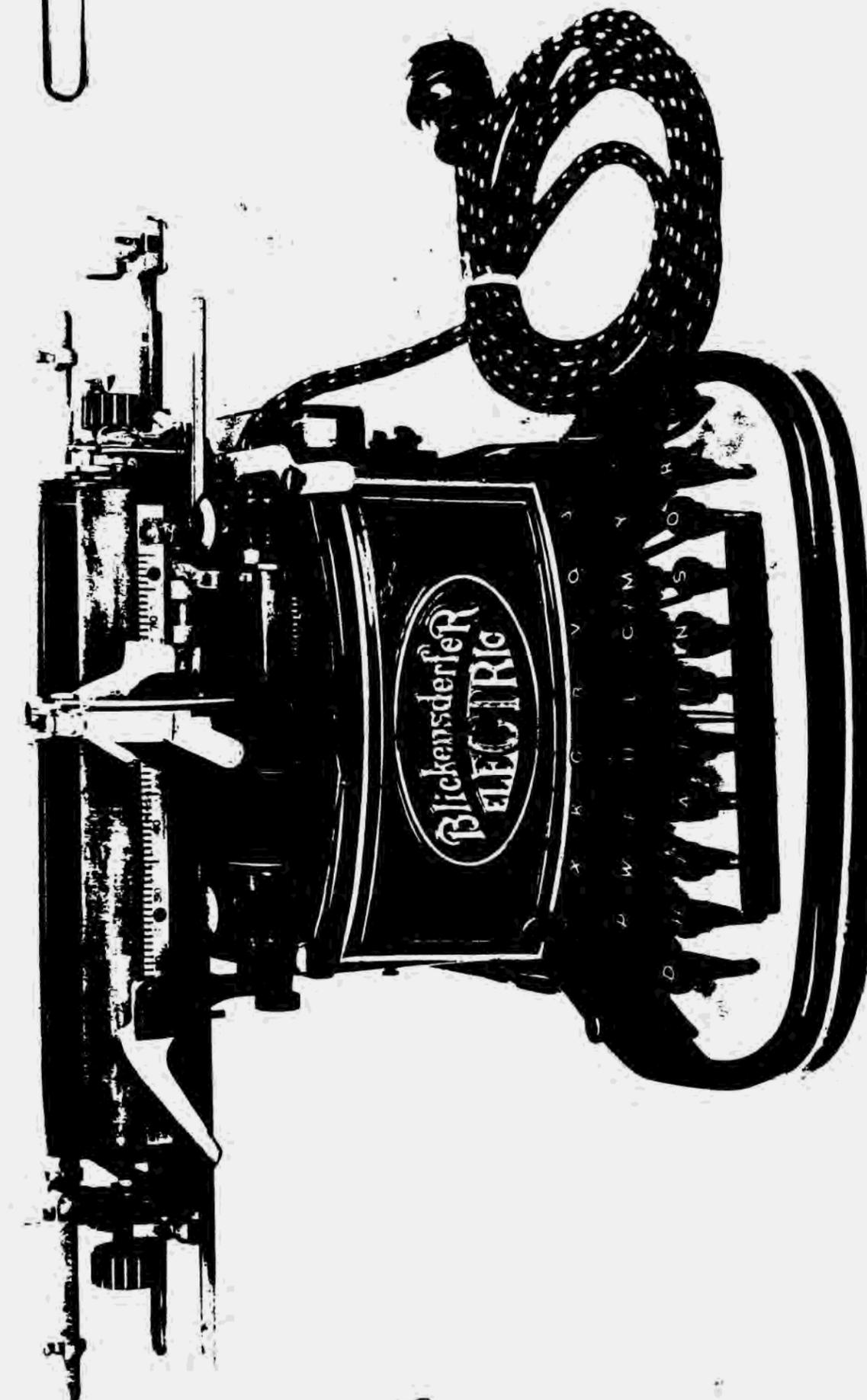
MUSEUM CODE: 10A-2

TECHNICAL PUBLICATIONS & SPECS: NA

PHOTO NO(S): 690505-47

PATENT(S):

LIBRARY REFERENCES:



DISTRIBUTOR & TUNING FORK

At the request of the Western Union Telegraph Company, Western Electric designed and manufactured a quadruple-duplex telegraph system to meet the rapidly increasing telegraph business. Essentially, this system permitted the simultaneous transmission of eight messages.

For quadruple operation the contact brushes on both receiving and sending distributors must rotate in exact unison. Otherwise, a signal impulse from one lever might pass through the wrong relay, causing an incorrect letter to be printed. The method of "synchronizing" the corresponding contact-brush was as follows:

The distributor brushes are driven by special motors which produce a very constant rate of rotations (about five times per second). The motor driving the brush at one end is made to run slightly faster than the motor at the other end. Automatic means are provided by which, when the brush at the fast end gains a little on the brush at the slow end, a mechanism is operated which automatically sets or "steps" back the brush at the fast end. Thus, by intermittently stepping back the brush at the fast end when required, the brushes are maintained in the proper relation. The tuning fork was used to keep the motor running at a uniform rate of speed.

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YEARS PRODUCED & QUANTITY: c.1915

PRIMARY CUSTOMER: Western Union

CLASSIFICATION CODE: Used with 1-A Multiplex System

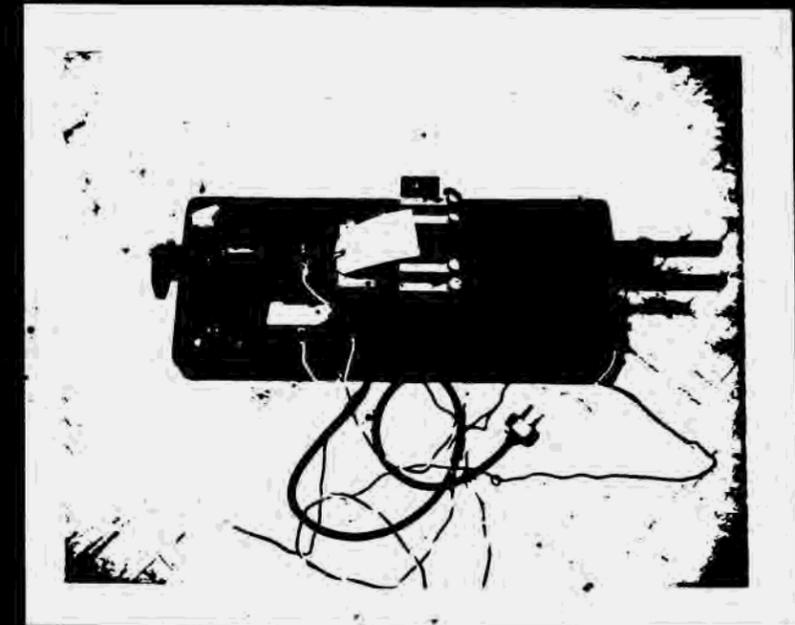
MUSEUM EQUIPMENT CODE: 9.10A-1 and 9.10A-2

TECHNICAL BULLETINS & SPECS: "Multiplex Specifications," The Western Union Telegraph Company, 263-C, Section 2, 33 Pages.

PHOTO NO'S: Polaroid TU124 and Polaroid TU123

PATENT(S):

LIBRARY REFERENCES: "Eight Messages Over One Wire," Western Electric News, April, 1915, Volume IV, No.2, 6 pages.



2A MULTIPLEX PERFORATOR

This keyboard perforator is a device controlled by a typewriter keyboard for perforating holes in a paper tape to form the characters representing in the Multiplex alphabet the message to be transmitted. Its essential parts include:

- a) Punch block
- b) Magnetically operated punch hammer
- c) System of five selecting levers
- d) Typewriter keyboard
- ) Device for feeding the punched tape

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YEARS PRODUCED & QUANTITY: c. 1915

PRIMARY CUSTOMER(S): Western Union Telegraph Company

CLASSIFICATION CODE: 2-A

MUSEUM CODE: 4B-10

TECHNICAL BULLETINS & SPECS: "Multiplex Specifications," The Western Union Telegraph Company, 263-C, Section 4-A, 14 pages.

PHOTO NO(S): 690505-32

PATENT(S): No 1,182,179 C. L. & H. L. Krum, Perforator For Forming Telegraphic Tape, filed 9/08/14, granted 5/09/16.

LIBRARY REFERENCE(S): See Western Union Specs.



MORKRUM "GREEN CODE" PRINTER

As the experimental and development work continued at the Morkrum plant, Howard Krumstudied all types of start-stop systems and found that synchronous control was the basis of all systems. After experimenting with various ideas his thoughts turned to a plan to make the start of the receiving unit somewhat independent of the transmitting unit start, thus avoiding irregularities then present in transmitter start devices. This led to the construction of a permutation-code, start-stop system, using segmented commutators with rotating brush distributors at both transmitting and receiving units and a start magnet for each to control start-stop operation.

In this system the transmitter start magnet, when energized, releases the transmitting brush, which immediately contacts the first segment to transmit a start pulse to operate the receiver start magnet; the five-unit-coded signal combination follows and both transmitting and receiving units are stopped. The apparatus was applied to control the selecting and printing mechanism of the Blickensderfer typewheel typewriter and named the "Morkrum Green Code." This improved apparatus soon replaced the Blue Code printer at Associated Press and other installations.

YEARS PRODUCED & QUANTITY: 1919-1923

PRIMARY CUSTOMERS: Postal Telegraph, Associated Press, Western Union

CLASSIFICATION CODE: 5-A

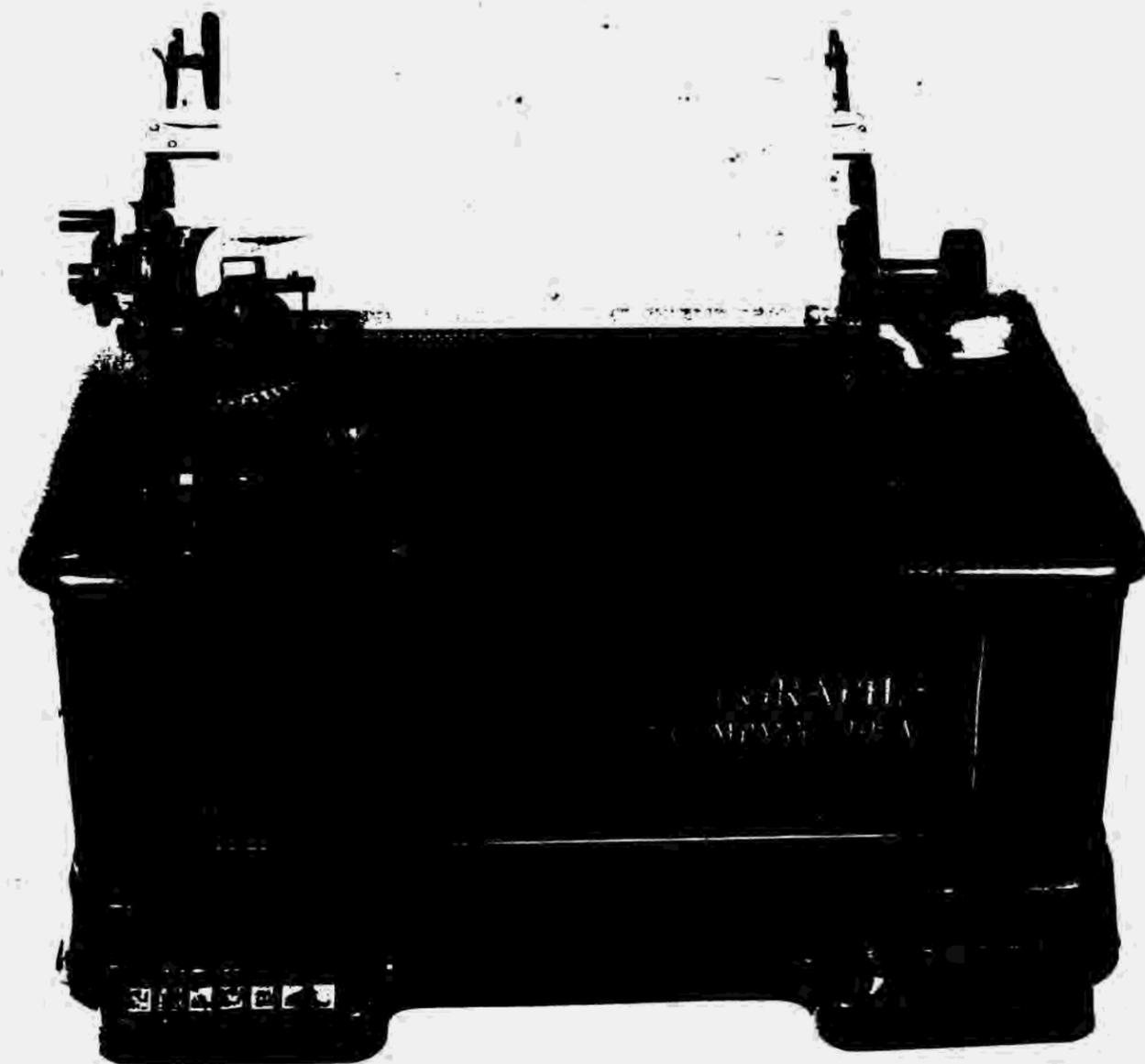
MUSEUM EQUIPMENT CODE: 1B-12

TECHNICAL BULLETINS & SPECS: "Multiplex Specifications," The Western Union Telegraph Company, 263-C, Section 5-A, 42 pages.

PHOTO NO'S: 421106-01; 690505-02

PATENT(S): No. 1,232,045 C. L. Krum & H. L. Krum Selective Telegraph System and Apparatus filed 11/29/09 and granted 7/3/17

LIBRARY REFERENCES: E. E. Kleinschmidt, Printing Telegraph...A New Era Begins, 1965, pp. 21-22, 25-26; J. O. Carr, "History of the Practical Developments of the Morkrum Printing Telegraph System," 1923.



"MISSING"

MODEL 11 TAPE PRINTER

With the increased load being placed on telegraph circuits, the Morkrum Company developed a printing telegraph which would operate on the standard five-unit code but which was so simple that it could be used at stations which handled as little as fifty messages per day.

In view of the remarkable record of service of the printing unit of the Baudot system, it was decided to adopt a similar mechanism for the printing portion of this machine. This meant printing on a tape and the consequent gumming of the tape to the message blank.

The tape printer was considerably simpler than a page printer. With a type wheel tape printer of the Baudot class it was merely necessary to release the printing arm at the time determined by the particular code combination to secure printing or spacing or shifting. For this reason there was a considerable saving in line time with the tape printer.

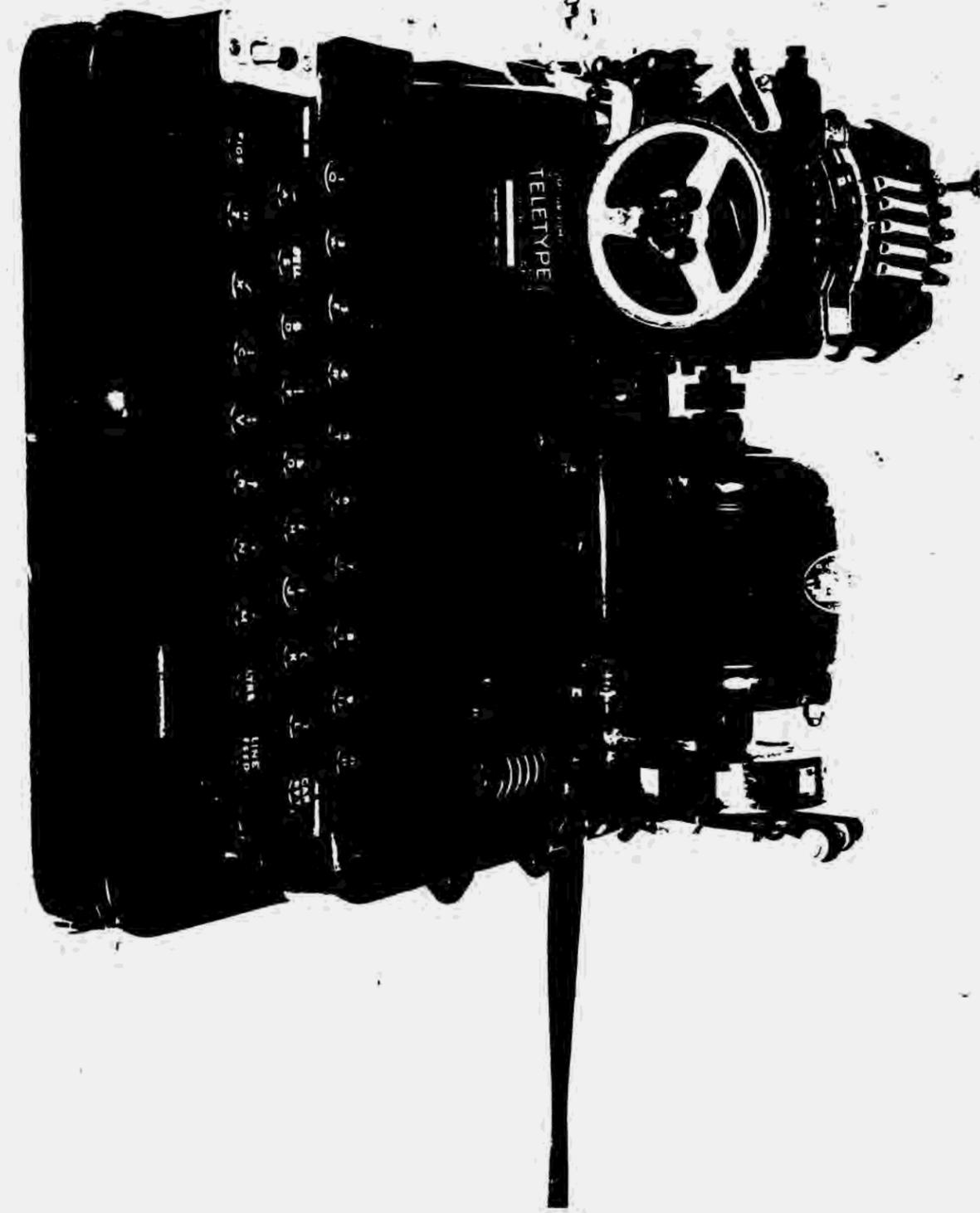
In 1921 the Model 11, a compact machine operating at 40 words per minute was introduced for light duty service. It was the first machine to which the name "Teletype" was first applied. One of the earliest installations of the Model 11 was in the Congress Hotel in 1922.

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YEARS PRODUCED & QUANTITY: 1921-27; 883 sold  
PRIMARY CUSTOMER(S): Hotels and local message services  
CLASSIFICATION CODE: Model 11  
MUSEUM CODE: 2B-13  
TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 690505-21  
PATENT(S):

LIBRARY REFERENCE(S): Kleinschmidt, E. E., Printing Telegraph...A New Era Begins, 1965, pp. 25-26; McNicol, D., Printing Telegraph Systems, 1925, pp. 69-78; Herbert, T. E., Telegraphy, 1926, pp. 694-712.



MODEL 12 PAGE PRINTER

After the Morkrum Company first applied Howard Krum's improved method for operating start-stop, permutation-code telegraph systems to the Green Code apparatus to control the selecting and printing operations of the Blickensderfer typewheel typewriter, other companies began to produce similar machines using, instead, type bar printing like the more modern typewriters. Observing this situation, the Morkrum Company started intensive development work to produce the Model 12 typebar printer, using the typebars and operating mechanism of the L. C. Smith typewriter and platen of a Woodstock Typewriter.

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YEARS PRODUCED & QUANTITY: 1922-1943; 11,899 units sold

PRIMARY CUSTOMER(S): Western Union; railroads; Chicago Police Dept;  
Postal Telegraph; British Post Office; Australian  
T legraph.

CLASSIFICATION CODE: Model 12

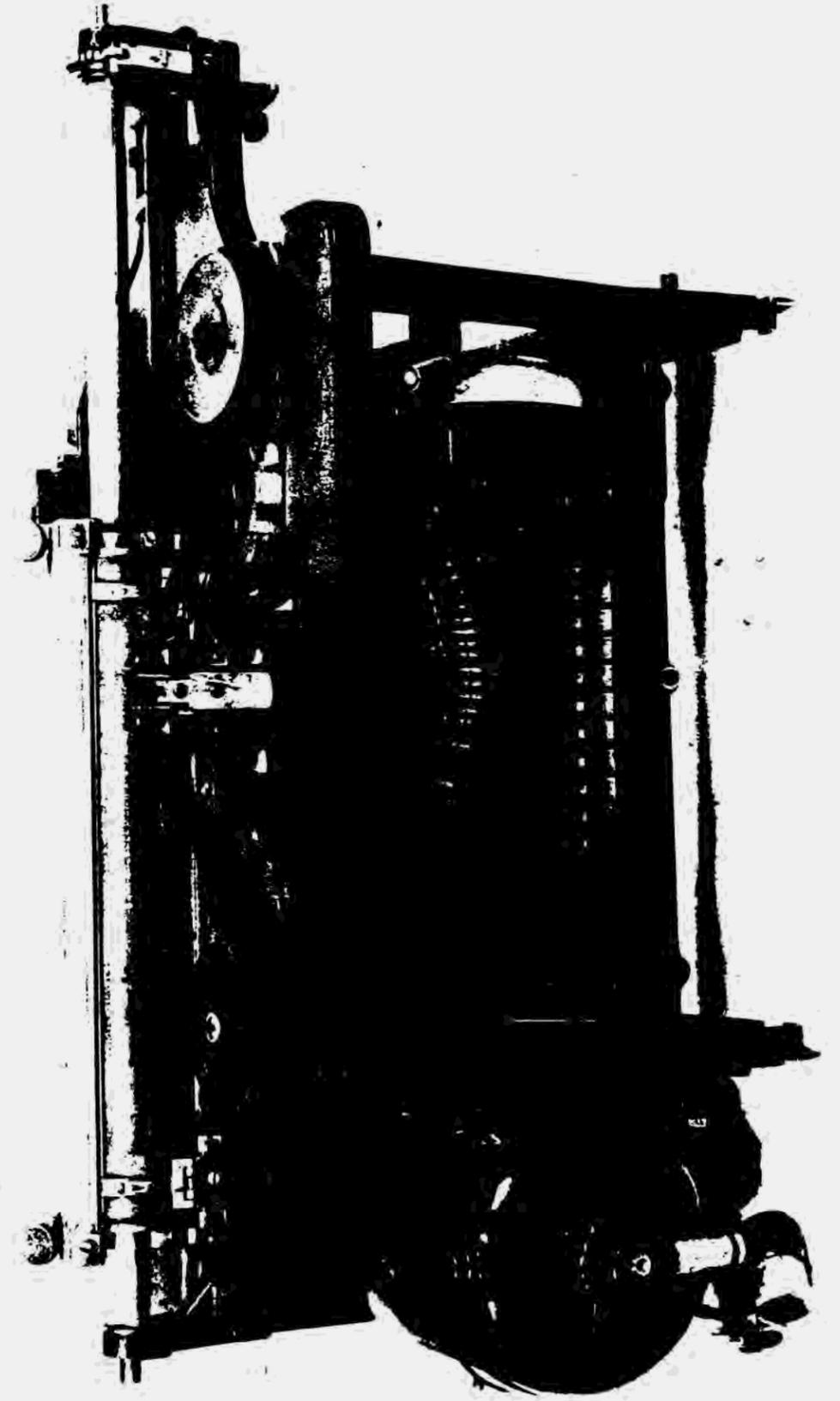
MUSEUM CODE: 1B-3

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 690505-03

PATENT(S):

LIBRARY REFERENCE(S): Kleinschmidt, E. E., Printing Telegraphy...A New Era Begins, 1965, pp. 25-26; McNicol, D., Printing Telegraph Systems, 1925, pp. 51-68.



WESTERN ELECTRIC 1A PAGE PRINTER

Upon seeing the need for a high speed telegraph system, Western Union Telegraph Company called upon the Western Electric Company to co-operate in the development of such a system, with a view to having the Western Electric Company design and manufacture the apparatus finally decided upon. The resulting system, known as the 1A, consisted of the following mechanisms: a distributor with rotating brushes; a motor and its mechanical corrector; a tuning fork whose vibrations kept the motor running at a uniform rate of speed; a transmitter; and a printer. In front of the printer was a box containing the relays, resistances, etc., essential to its operation.

The printer was of the kind in which the paper moved and the typewheel was stationary, except for its rotary movement to bring the desired letter opposite the paper. The typewheel was mounted on a vertical shaft, driven by a spring which was automatically kept under the desired tension by a small motor. After a letter had been selected, the type shaft was released and revolved until it struck a stop thrown up in its path. The position of the stop was determined by the signal sent over the line and brought the desired letter in front of the paper. As soon as the typewheel was stopped, the paper was forced against the typewheel by a printing magnet and the letter was printed. The selection of stops was obtained mechanically by the use of five dotted discs. The position of each disc was determined by an electro-magnet. These disc control magnets were under control of relays. For each combination of relays selected, there was a corresponding movement of the discs which permitted the required stop to be moved into such a position as to stop the rotating typewheel in the proper position.

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YEARS PRODUCED & QUANTITY: 1914 - ;

PRIMARY CUSTOMER(S): Western Union Telegraph Company

CLASSIFICATION CODE: 1-A

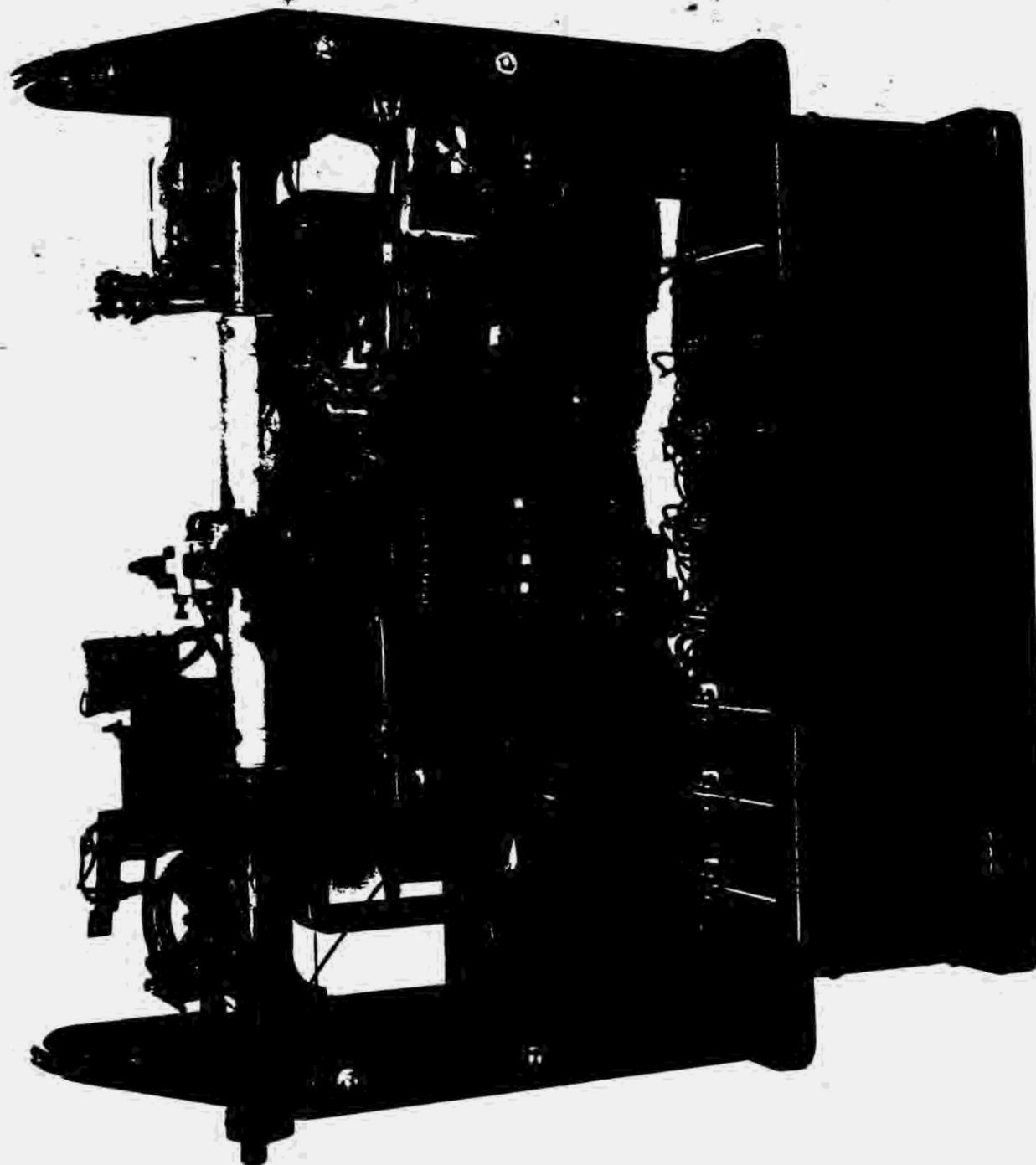
MUSEUM CODE: 1A-2

TECHNICAL BULLETINS & SPECS: "Multiplex Specifications," The Western Union Telegraph Company, 263-C, Section 5, 26 pages.

PHOTO NO(S): 690505-98

PATENT(S):

LIBRARY REFERENCE(S): "Eight Messages Over One Wire," Western Electric News, April 1915, Volume IV, No. 2; McNicol, D., Printing Telegraph Systems, 1925, pp. 30-39.



POTTS PAGE PRINTER 2A

At the time when Western Union was trying to increase operating efficiency, Dr. Louis M. Potts, then associated with the Rowland Telegraphic Company and later with Teletype Corporation, submitted a typewheel printer (later named 2-A) to be placed in competition with the currently used Western Electric typewheel printer (1-A).

The primary objective of this invention was the production of a page printing telegraph receiver which was to be as low cost to manufacture as was commensurate with operating efficiency; which was to be free from liability to get out of order and require as little adjustment from time to time as possible; and which was to be readily adaptable to use on commercial telegraph circuits.

Low cost of manufacture was attained by a great reduction of parts, and by devising and designing the parts with a manufacturing end in view. Certainty of operation and the reduction of adjustments were obtained primarily by eliminating the electrical factor as far as possible. Adaptability to commercial circuits was attained by placing all the operations of the machine so that they may be readily substituted for the usual sounder in a Morse circuit.

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YEARS PRODUCED & QUANTITY: c. 1914

PRIMARY CUSTOMERS: Western Union Telegraph Company

CLASSIFICATION CODE: 2-A

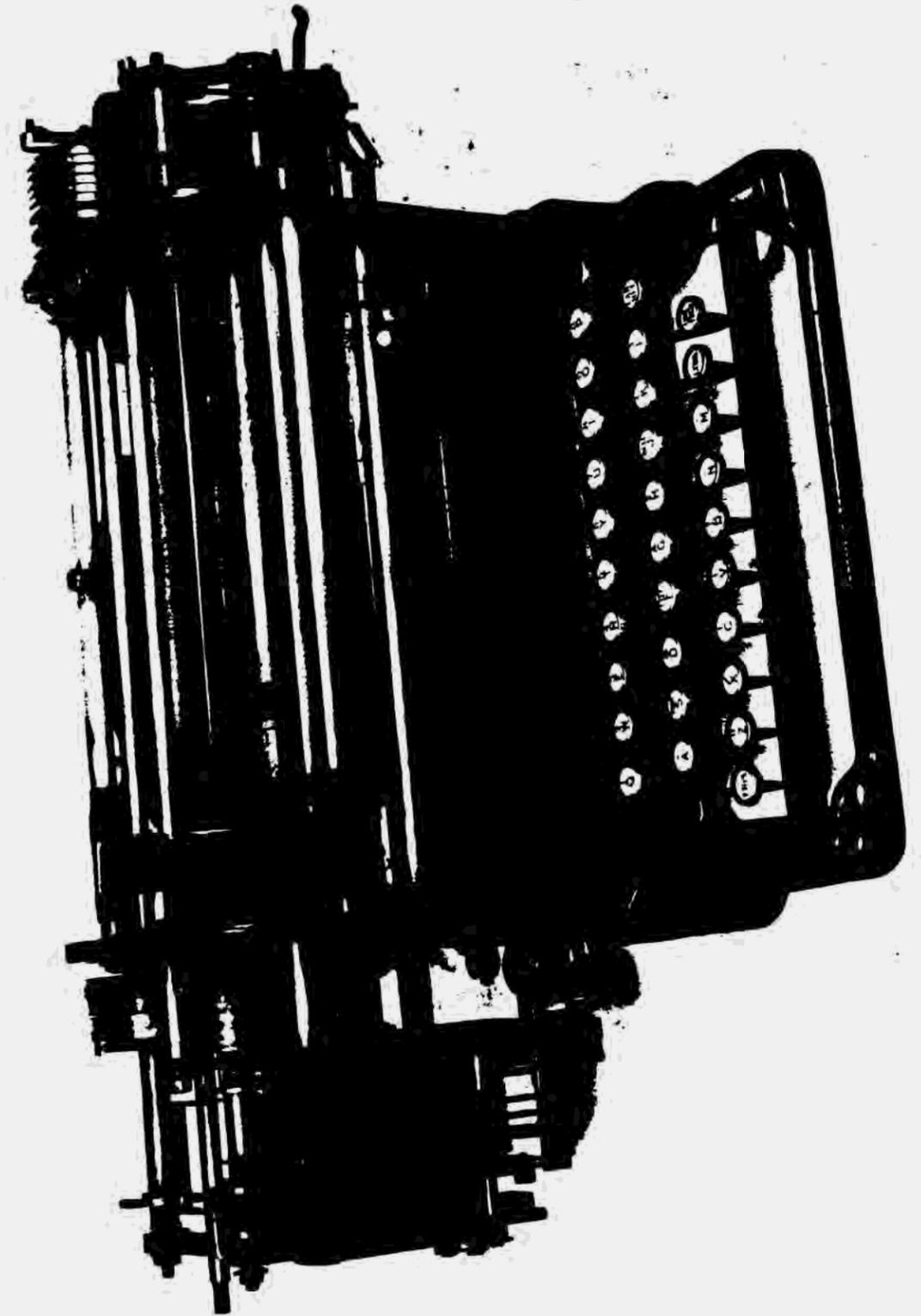
MUSEUM EQUIPMENT CODE: 1A-1

TECHNICAL BULLETINS & SPECS: None available

PHOTO NO(S): 690505-99

PATENT(S): No. 1,229,202 L. M. Potts, Telegraphic Receiver, filed 1/8/14 and granted 6/5/17; see also, No. 1,309,745 L. M. Potts, Machine-Telegraph, filed 5/1/16 and granted 7/15/19.

LIBRARY REFERENCE(S): Kleinschmidt, E. E., Printing Telegraphy...A New Era Begins, 1965, pp 5, and 11.



KLEINSCHMIDT  
TELEGRAPH TYPEWRITER  
18-TYPE

This machine looks similar to the Model 3A and 3B; however, it is of the single magnet variety, and is keyboard operated. This telegraph typewriter was a type-bar, moving platen, page printer and operated on a make and break (or start-stop) line signal. When the sending and receiving stations were idle, the line was closed and the selecting magnets in both printers were energized. Upon depressing a key, a small pin barrel in the keyboard made one revolution and sent out a combination of line impulses which varied with different key levers. At both the transmitting and receiving end this was picked up by the selecting magnets which transferred the selection to five selecting bars to determine the letter to be printed. The transfer was accomplished by another pin barrel which also made one revolution per character and which was started by the first impulse received by the selector magnet. Synchronism between the transmitting and receiving pin barrels was important, although a pause at the end of each revolution meant that the speed of the motors did not need to be absolutely the same.

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YEARS PRODUCED & QUANTITY: 1919-1924; 1927-33, 231 units sold.

PRIMARY CUSTOMER(S): For intercommunication systems.

CLASSIFICATION CODE: known as 18-Type after merger.

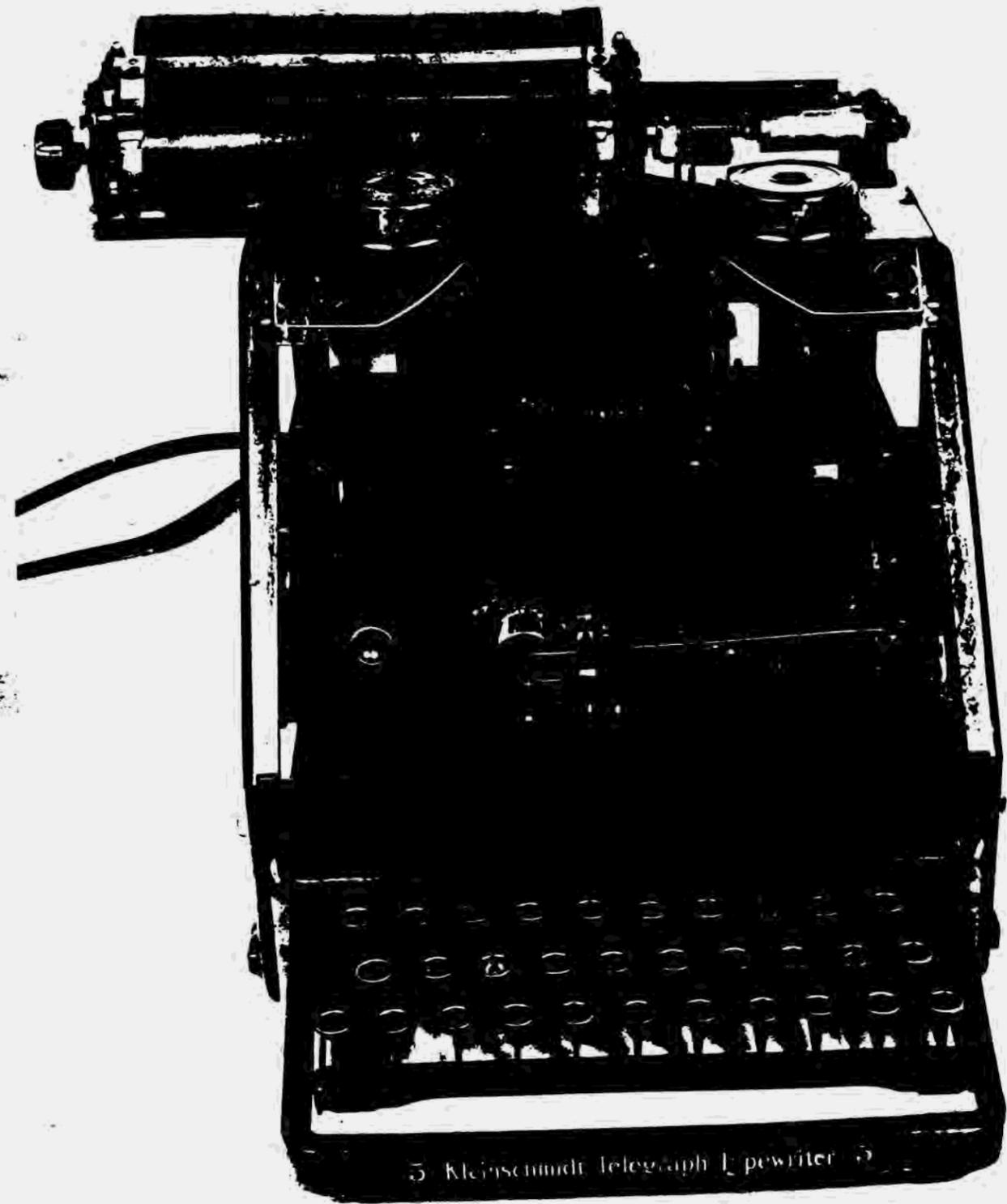
MUSEUM CODE: 18-13

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 690505-01

PATENT(S):

LIBRARY REFERENCE(S): Kleinschmidt, E. E., Printing Telegraphy...A New Era Begins, 1965, pp. 15-16.



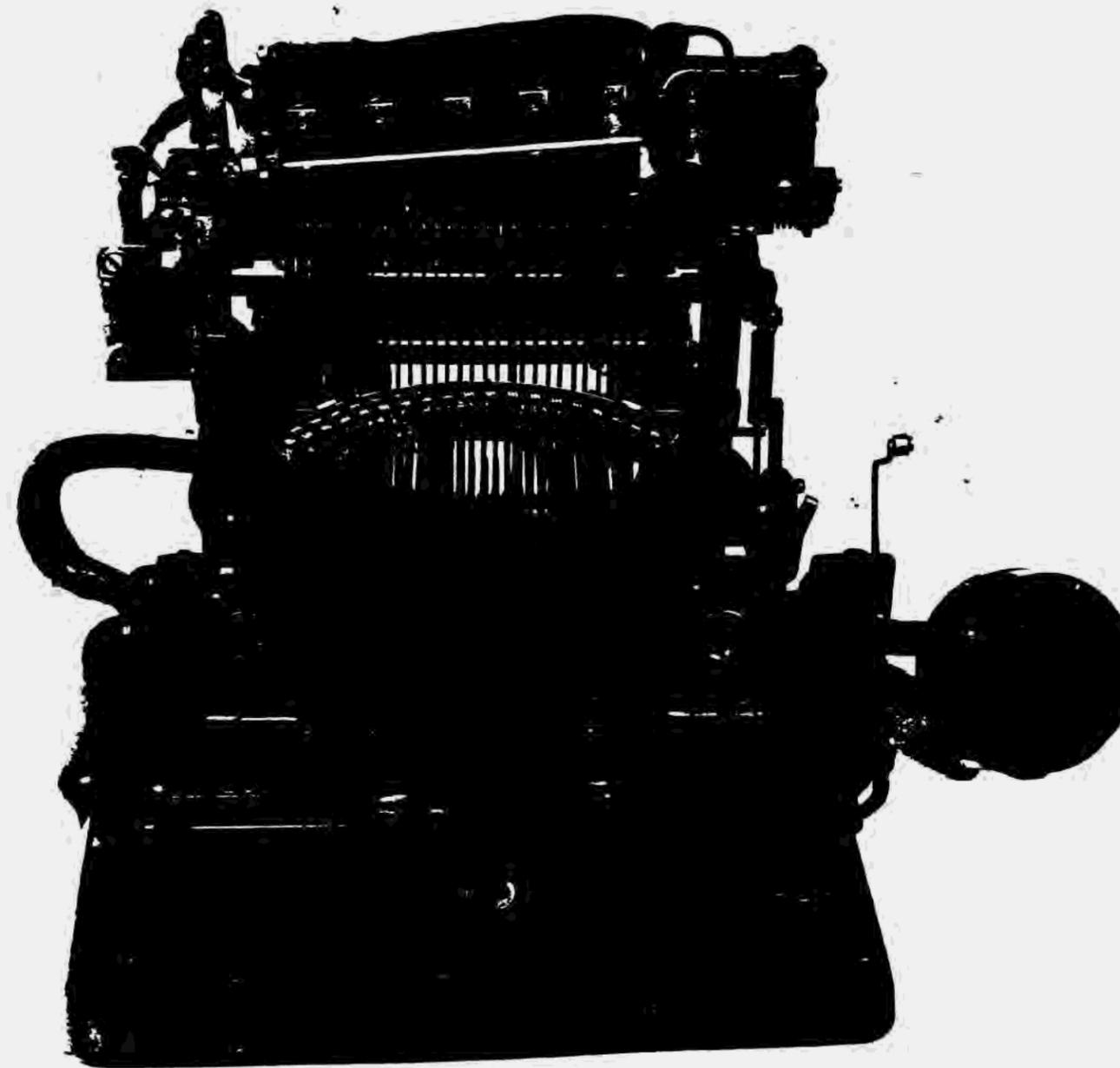
21A TAPE PRINTER

This was a typebar page printer, redesigned to print on tape. Printing was accomplished by using the same selection controls and operating the typebars to print downward on the tape instead of upward against the platen as in the 3A and 3B page printers. A tape gummer to attach the tape to a message blank was also designed. This unit was also made to operate on a seven-level code, using no more or less than three levels for each character.

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YEARS PRODUCED & QUANTITY: c. 1920; 1926-1950, 3,878 units sold.  
PRIMARY CUSTOMER(S): Western Union Telegraph Company  
CLASSIFICATION CODE: 21-A, also 25-A  
MUSEUM CODE: 2B-8  
TECHNICAL BULLETINS & SPECS: NA  
PHOTO NO(S): 690505-100  
PATENT(S):

LIBRARY REFERENCE(S): Kleinschmidt, E. E., Printing Telegraphy...A New Era Begins, 1965, pp. 13 and 33; McNicol, D., Printing Telegraph Systems, 1925, pp. 84-90.



### MODEL 14 TAPE PRINTER

The demand for printing telegraph equipment was increased in 1925 when the Morkrum-Kleinschmidt Company introduced the Model 14 Tape Printer. The Morkrum Company had been working on the development of this single magnet, type-bar tape printer prior to its merger with Kleinschmidt. Although the typing assembly was almost identical to that employed in the Kleinschmidt 21A, the Model 14 had a radically different selector.

On this instrument, the depression of a key first set up a code combination corresponding to the characters to be printed or the function to be performed, and then engaged a clutch which connected a motor to a mechanism that transmitted the code combination in the form of electrical impulses to all of the machines connected to the sending instrument.

The electrical impulses actuated magnets on all of the machines on the circuit, including the sending instrument, and, through certain mechanisms, selected a particular typebar and caused the proper character to be printed on a narrow tape which was automatically spaced after each character.

The paper was arranged so that it could be placed in an upper or lower case position with respect to the type pallets, thus making possible the printing of 58 different characters. When the shift combination was transmitted, the paper was placed in position to print upper case characters and the release combination placed it in position to print lower case characters.

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YEARS PRODUCED & QUANTITY: 1925-1960 58,552 units

PRIMARY CUSTOMERS: Western Electric and Western Union

CLASSIFICATION CODE: M14 (FP=Tape Printer)

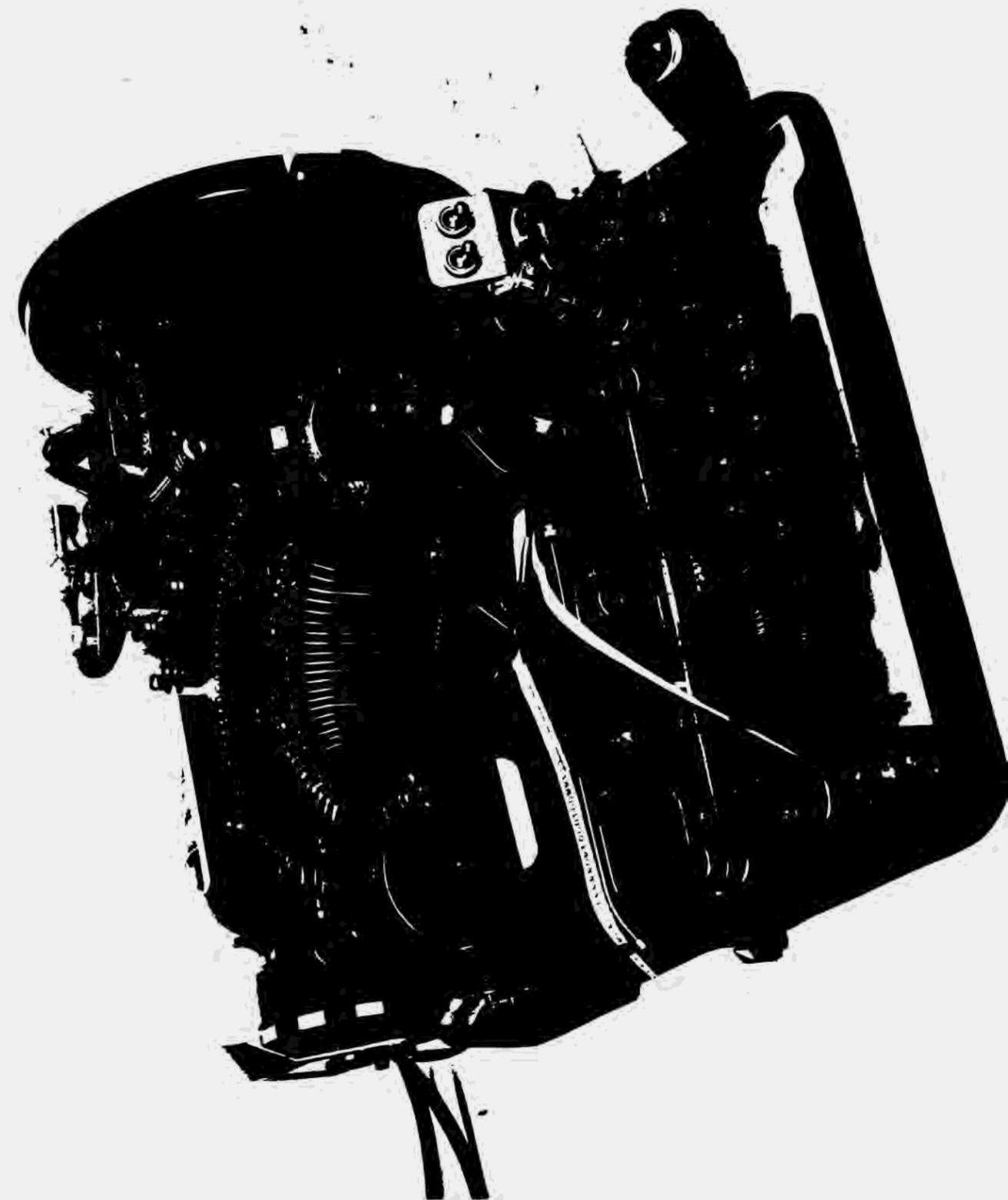
MUSEUM EQUIPMENT CODE: 2C-22

TECHNICAL BULLETINS & SPECS:

PHOTO NO'S: 390505-75,76,77,78; 650322-61,62; 300214-1; 430826-26;  
690505-94.

PATENT(S): No. 2,170,316 W. J. Zenner, Printing Telegraph Apparatus, filed 12/31/36, and granted 8/22/39; No. 2,589,132 T. I. Przysiecki, Automatic Shift Control for Printing Telegraph Apparatus, filed 12/1/49, and granted 3/11/52.

LIBRARY REFERENCES: Kleinschmidt, E. E., Printing Telegraphy...A New Era Begins, 1965, pp. 32-26; A. S. Benjamin, "Teletype Printing Telegraph Systems," Telephony, December 9 and 16, 1933, (reprint); Herbert, T. E., Telegraph, 1926, pp. 712-733; McNicol, D., Printing Telegraph Systems, 1925, pp. 78-84.



MODEL 14 TYPING REPERFORATOR

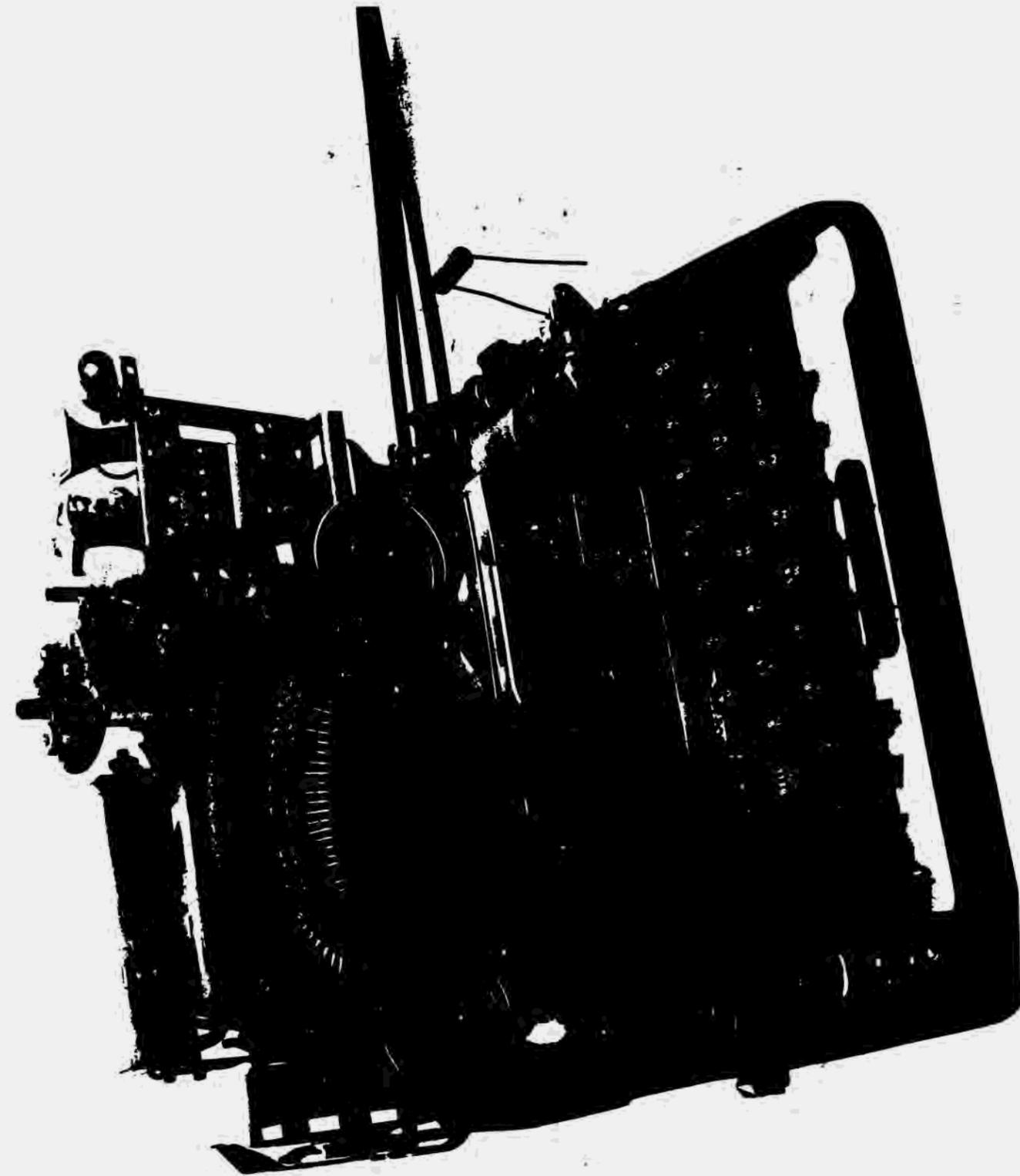
This is essentially the same unit as the Model 14 FP, with the addition of being able to perforate paper tape.

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YEARS PRODUCED & QUANTITY: 1941-1960 70,998 units  
PRIMARY CUSTOMERS: Signal Corps, Navy, WECCO, and W.V.  
CLASSIFICATION CODE: M14 (FPR=Typing Reperforator)  
MUSEUM EQUIPMENT CODE: 5C-14  
TECHNICAL BULLETINS & SPECS:

PHOTO NO'S: 650326-49; 690505-95  
PATENT(S): No. 2,225,794 R. A. Lake, Printing Perforating Telegraph Apparatus, filed 5/20/39, and granted 9/16/41; No. 2,273,909, No. 2,273,910, No. 2,308,554, and No. 2,318,026 C. W. Swan, Printing Telegraph Apparatus, filed 5/20/39, and granted 2/24/42, and 5/4/43; No. 2,303,846, and No. 2,339,785 R. A. Lake, Printing Telegraph Apparatus, filed 5/30/39 and 11/28/41, and granted 12/1/42 and 1/25/44 respectively; and No. 2,589,132 T. I. Przysiecki, Automatic Shift Control for Printing Telegraph Apparatus, filed 12/1/49, and granted 3/11/52.

LIBRARY REFERENCES: NA



### TYPING REPERFORATOR TRANSMITTER DISTRIBUTOR

This Reperforator Transmitter Distributor is a motor driven mechanism which combines in a single unit the functions of a typing reperforator and a tape transmitter distributor which permits the transmission of the last perforated character.

The unit provides a fully automatic mechanism in which the perforated tape may be stored in the form of a loop for subsequent transmission, or in which all the combinations in the tape up to and including the last character perforated may be transmitted. This is accomplished by means of a pivoted tape transmitter which moves along the tape as it becomes taut, until it reaches a position one character space (.100") away from the point at which the code perforations are made in the tape. This 5-level unit uses standard 11/16 wide perforated tape.

The typing reperforator uses a method of tape perforating known as chadless perforating to permit perforation of the tape in the same space that is occupied by the printed characters.

Typing and perforating occur simultaneously, but due to the fact that the platen is to the right of the perforator die block, characters are typed at the right of their respective perforations. The separation between the printed character and its associated perforation is six character spaces. This separation must be taken into account when tearing message tapes from the unit. When the tape is to be used for transmission by means of an external transmitter distributor, the end of the tape should include all of the printed characters in the message and the first printed character of the message must be preceded by at least six sets of code perforations in order to transmit the entire message.

The first and most important application for this machine was in the Bell 81-type switching system.

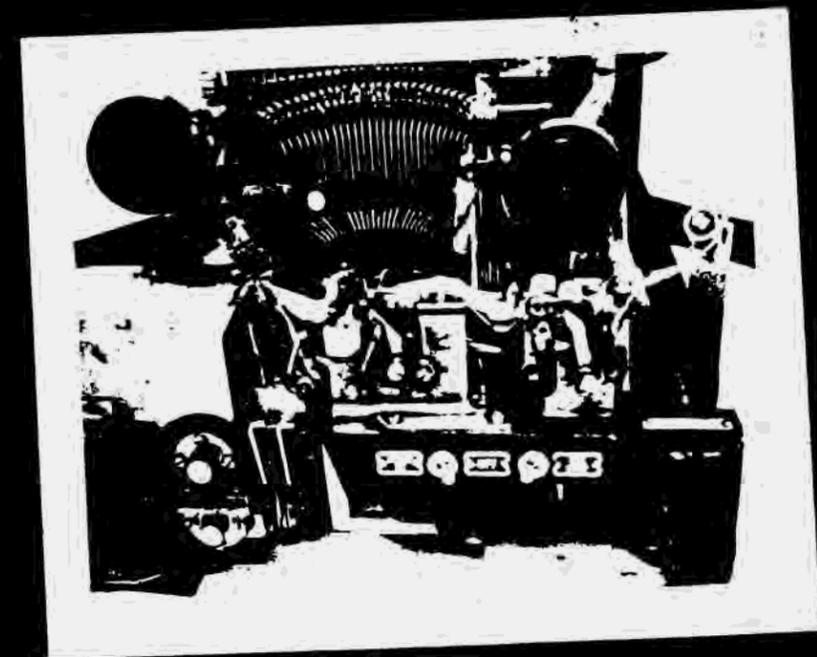
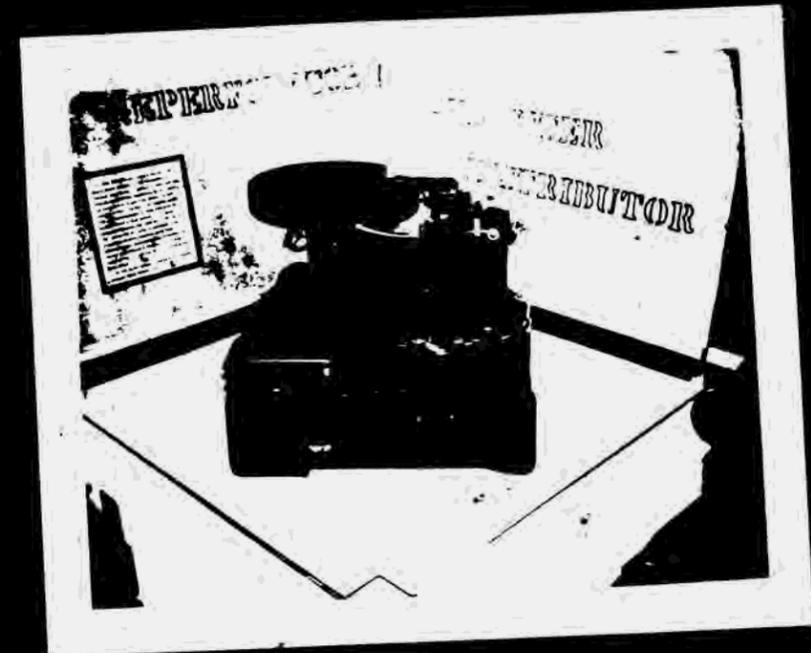
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YEARS PRODUCED & QUANTITY: 1945-1960      6,150 units  
PRIMARY CUSTOMERS: WECO, R.C.A., Gov't, W.U., etc.  
CLASSIFICATION CODE: FRXD  
MUSEUM EQUIPMENT CODE: 5C-17  
TECHNICAL BULLETINS & SPECS: 191, 202

PHOTO NO(S):

PATENT(S):

LIBRARY REFERENCES:



MODEL 14 TRANSMITTER DISTRIBUTOR

This Teletype transmitter distributor provides means for automatically translating 5-unit code combinations (previously perforated in a paper tape by a perforator or reperforator) into electrical impulses and transmitting these impulses to one or more receiving stations. Although made to transmit at 60 w.p.m., this transmitter distributor can be operated at 75 or 100 w.p.m. with appropriate gears.

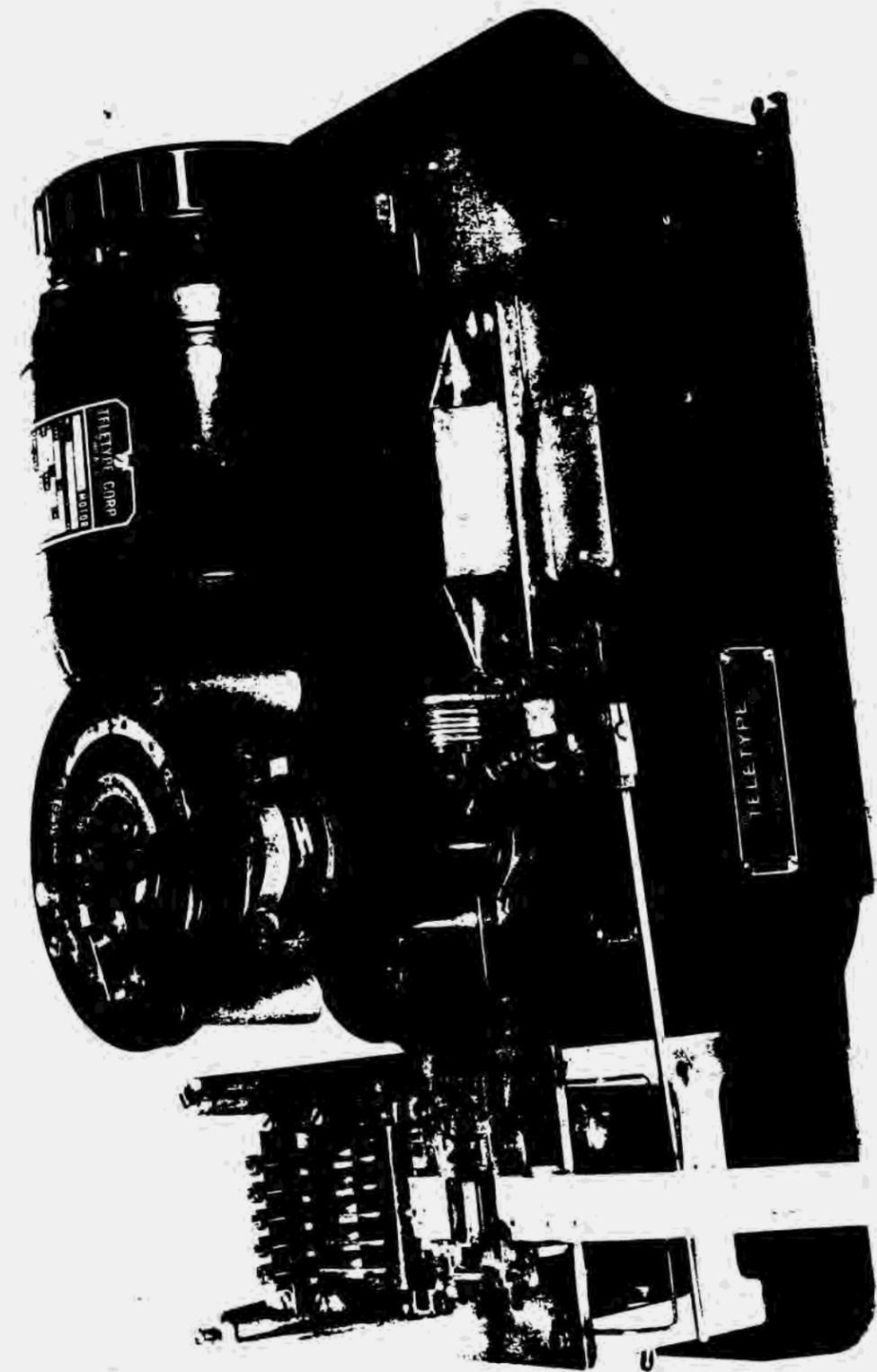
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YEARS PRODUCED & QUANTITY: -1960,108,072 units  
PRIMARY CUSTOMER(S): WECO, Signal Corps, W. U., Navy  
CLASSIFICATION CODE: ML4 (XD-Transmitter Distributor)  
MUSEUM EQUIPMENT CODE: 3C-23  
TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 631218-90; 690505-96

PATENT(S):

LIBRARY REFERENCE(S):



MODEL 14 NON-TYPING REPERFORATOR

The Teletype Model 14 non-typing reperforator set (for use with Model 19 set) is arranged for convenient installation underneath the Model 19 table at left front. It broadens the application of the Model 19 set by adding means for automatic reception and recording of printing telegraph messages in perforated tape form.

The device usually consists essentially of reperforating unit mounted, with a motor unit, and relay, on a common base. The reperforating unit includes a pulling magnet selector, main shaft assembly, perforator and tape feed mechanism; also, mounted on the lower left front corner is an "On" "Off" motor switch.

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YEARS PRODUCED & QUANTITY: 1960 8,949 units  
PRIMARY CUSTOMERS: WECO, W.U., and F.A.A.  
CLASSIFICATION CODE: M14 (RPE=Non-Typing Reperforator)  
MUSEUM EQUIPMENT CODE: 5C-15  
TECHNICAL BULLETINS & SPECS: 147B, 162

PHOTO NO(S): 690505-97

PATENTS(S):

LIBRARY REFERENCE(S):



TELETYPESETTER PERFORATOR (TPE)

This 6-level perforator was developed in 1931 to provide perforated tape for automatic transmission or to control line casting machine operating units for automatically preparing type. The Teletypesetter Corporation, a subsidiary of Teletype Corporation, sold approximately 5,000 units to 1958, at which time the Company was sold to Fairchild Graphic Equipment, Inc.

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YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

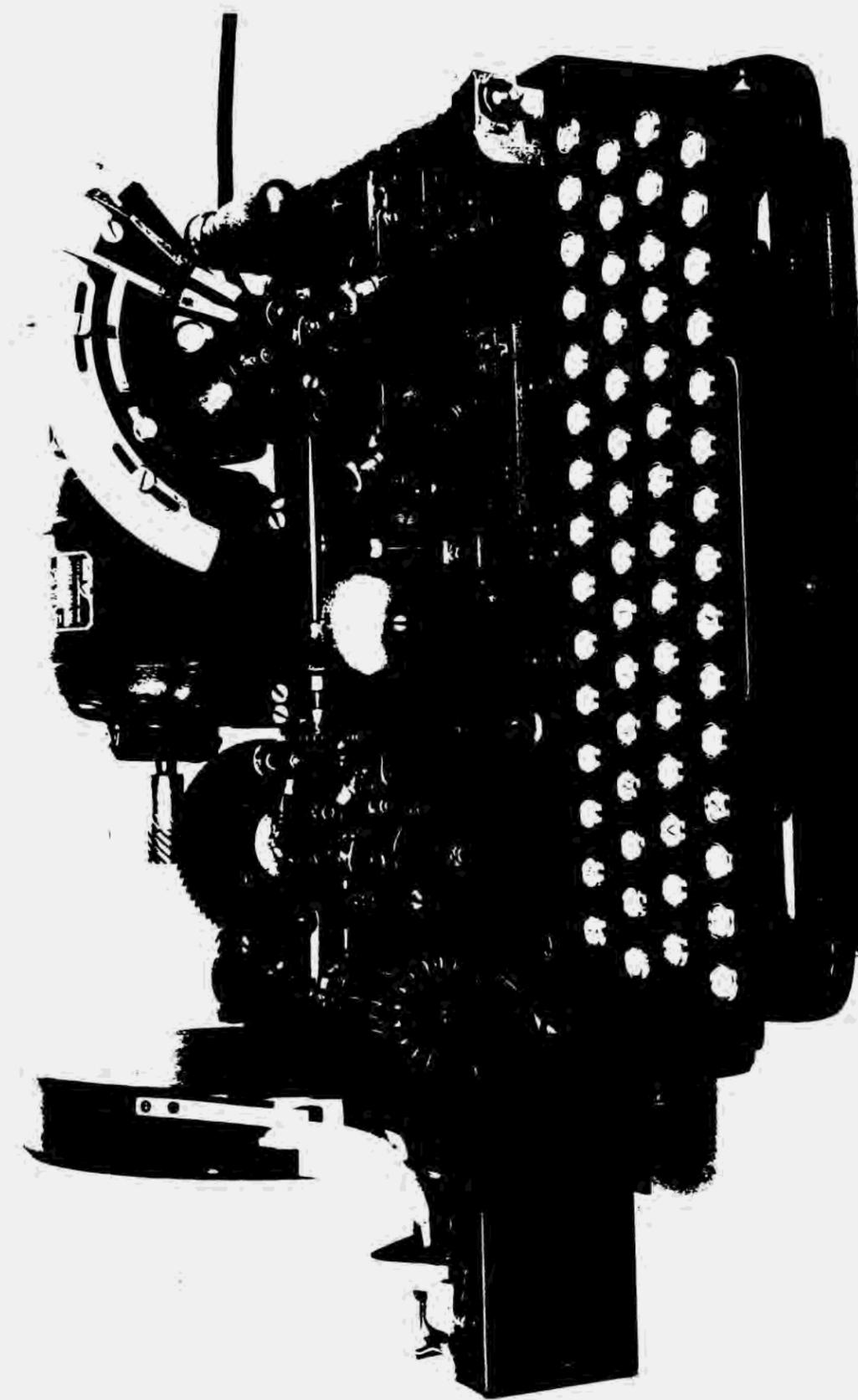
MUSEUM EQUIPMENT CODE: 12C-3

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 690505-27

PATENT(S):

LIBRARY REFERENCE(S):



MODEL 19 SET

The Teletype Model 19 set combines facilities for direct interchange of typewritten telegraph messages, perforation of type for subsequent transmission, automatic transmission of printing telegraph messages under control of perforated tape. The perforator transmitter keyboard which serves for direct sending may also be operated independently (whether or not an incoming message is being received) as a high speed perforator in the preparation of tape for subsequent transmission. Or if desired, tape may be perforated simultaneously with direct transmission. Incoming messages are received in printed page form on either continuous roll or multifold paper.

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YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

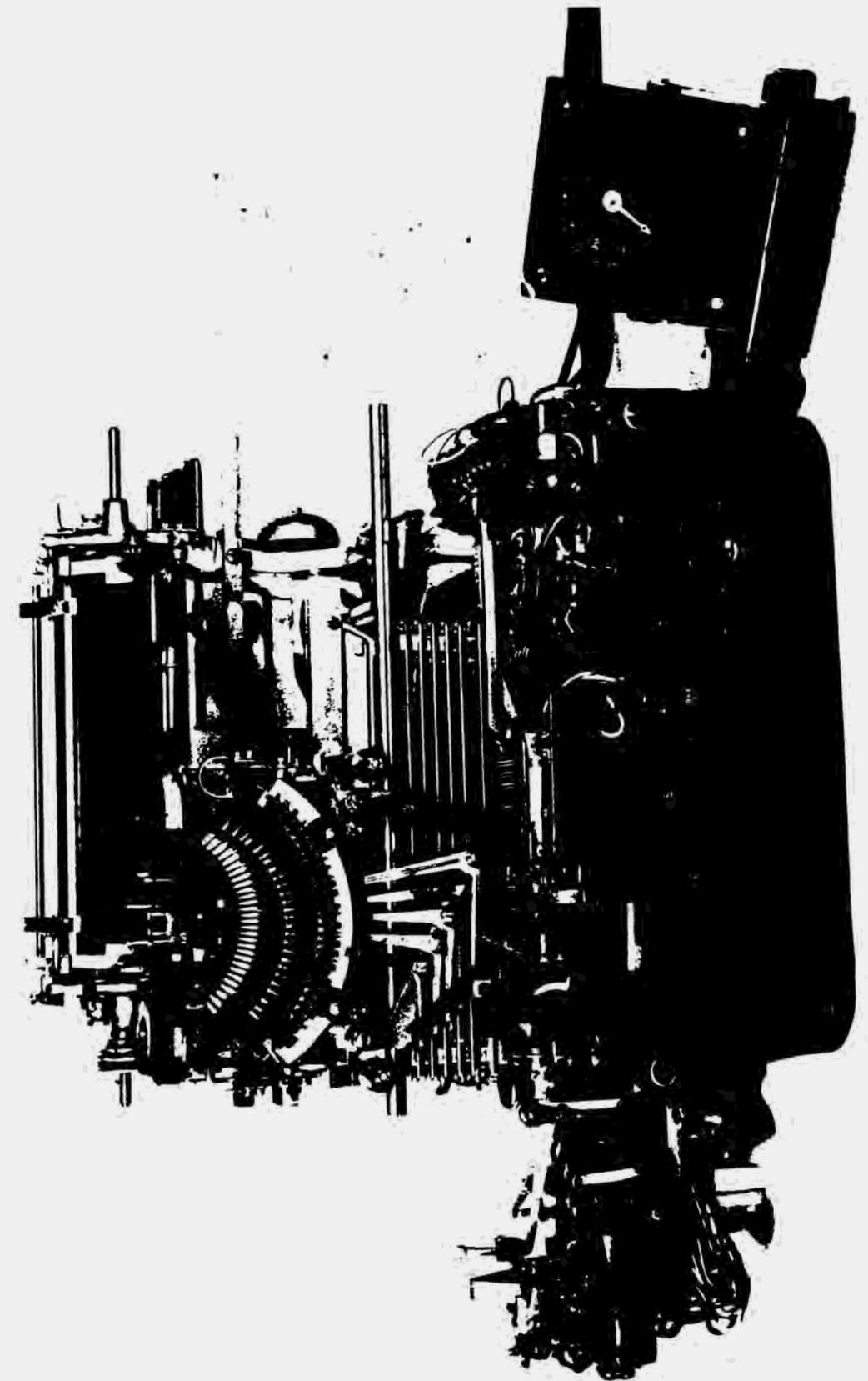
MUSEUM EQUIPMENT CODE: 12C-1

TECHNICAL BULLETINS & SPECS: Tech. Bull. 4.D1-1

PHOTO NO(S): 690505-92

PATENT(S):

LIBRARY REFERENCE(S):



MODEL 26 PRINTER  
(with perforator and transmitter)

The 26 type unit was basically a 24 type modified so that the last printed character in a line could be read immediately after printing. The type pallets of the Model 26 typing unit are guided in grooves in the type wheel so that the selected type pallet may be moved mechanically toward the platen. The type pallet to be selected is determined by the setting of five code discs, which are actuated by line signals through the medium of the selector mechanism. The code discs are so arranged that notches on their outer edges will be lined up permitting a selected stop pin to move into the path of the stop arm located in the type wheel shaft. Thus, the type wheel will be stopped so that the selected type pallet will be positioned opposite the printing hammer which moves the pallet toward the platen. The Model 26 showed applications of ideas patented by L. M. Potts in 1913. This particular piece of equipment may be considered an ASR set, for it includes a perforator and transmitter.

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YEARS PRODUCED & QUANTITY: 1937-1949 7,623 units sold

PRIMARY CUSTOMERS: Bell System (5,628) Other (1,995)

CLASSIFICATION CODE: M-26

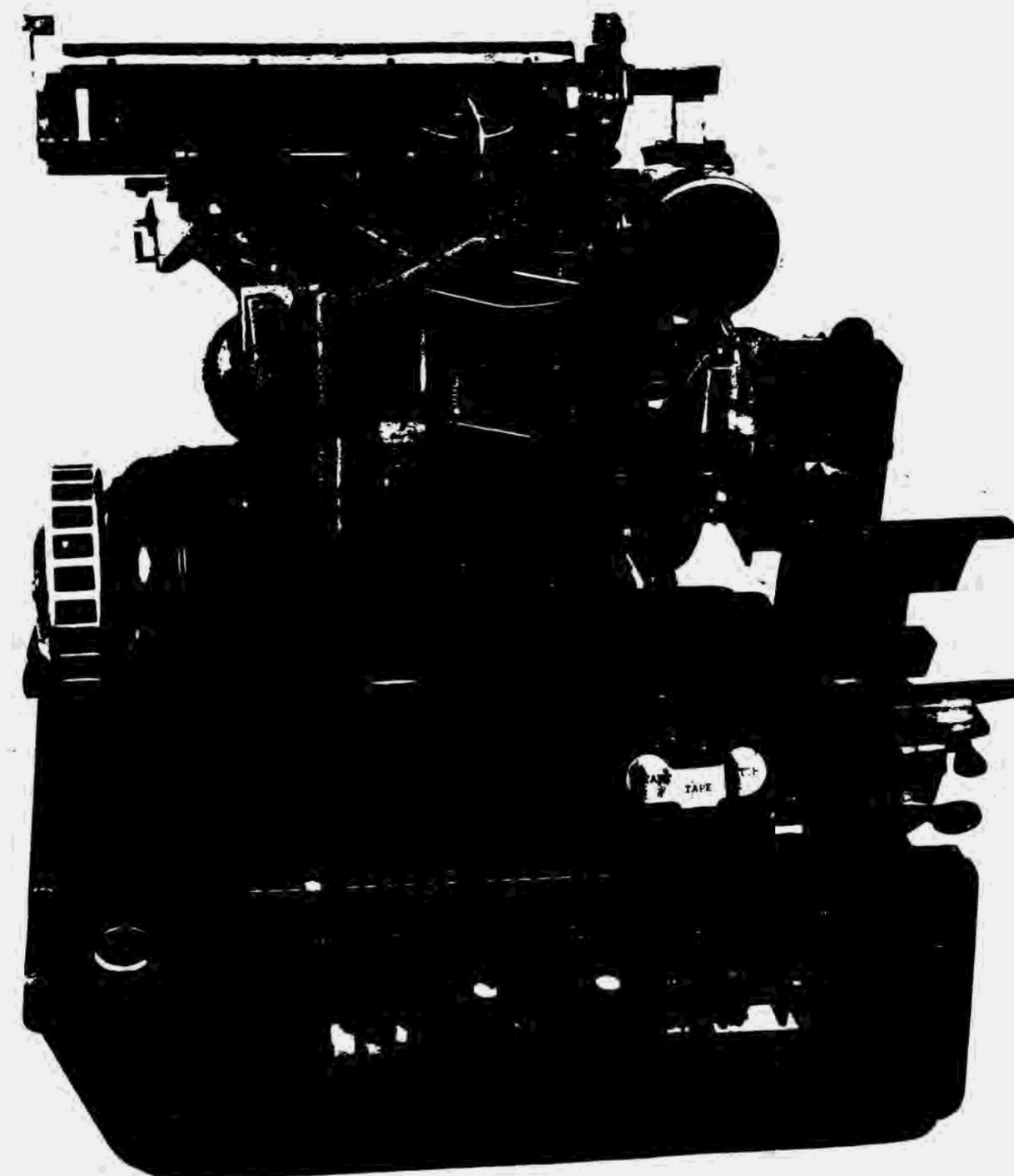
MUSEUM EQUIPMENT CODE: 12C-2

TECHNICAL BULLETINS & SPECS: Bulletin No. 158 (GP)

PHOTO NOS: 380119-59 (3P); 380509-21 (with Perf./Trans.); 690505-93

PATENT(S): No. 1,258,809 L. M. Potts, Transmitting Apparatus for Electric Telegraph and the Like, filed 10/18/13 and granted 3/12/18; No. 1,299,608 L. M. Potts, Selective Signaling Apparatus, filed 10/11/13 and granted 4/8/19; No. 1,632,297 E. E. Kleinschmidt, Printing Telegraph, filed 10/3/21 and granted 6/14/27; No. 1,637,129; No. 2,180,360, H. L. Krum, Printing Telegraph Apparatus, filed 5/4/36 and granted 11/21/39; No. 2,277,715, A. H. Reiber, Combined Keyboard Tape Transmitter, filed 11/9/39 and granted 3/31/42; and No. 2,277,706, R. A. Lake, Combined Keyboard Tape Transmitter, filed 11/9/39, and granted 3/31/42.

LIBRARY REFERENCES: None Available



SEQUENTIAL SELECTOR

The Teletype Sequential Selector is a motor-driven electro-mechanical receiving unit which automatically controls telegraph signal circuits in response to predetermined sequences of printing telegraph signals. These sequences may be composed of both character and functional signals which precede and follow regular Teletype messages. Facilities are available for equipping the unit with as many as 33 contacts. When changes are necessary, a contact may be placed under the control of a required sequence by manually substituting the necessary code levers.

The Sequential Selector unit is mounted by resilient fittings to a metal panel which may be secured to a relay rack, a cabinet shelf or a table. The panel also supports the motor and a countershaft which drives the main shaft of the selector unit. The panel incorporates sliding rails and latches which permit forward movement of the panel relative to its mounting brackets, which are positioned for standard relay rack spacing.

As an adjunct to the contact operating mechanism a mechanical timer is attached to the left, lower rear, side of the Sequential Selector. The timer is geared to the mainshaft through a friction clutch. When it is desirable to introduce a pause in the control sequence, the timer operates in response to a BLANK combination in a transmitter start pattern.

The Sequential Selector incorporates an answer back feature which generates an "H" character signal by means of a cam and contact assembly located near the lower, right, rear corner of the unit. When the Sequential Selector at an outlying station receives the transmitter start pattern signal sequence directing it to start an associated transmitter distributor, the "H" answer back mechanism automatically starts. If there is tape in the transmitter distributor, it will also start and the "H" answer back signal will be shunted out of the signal circuit. If the transmitter distributor is without tape, it will not start. However, the "H" answer back signal will be transmitted over the signal line connected to the transmitter distributor.

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YEARS PRODUCED AND QUANTITY:

PRIMARY CUSTOMERS:

CLASSIFICATION CODE:

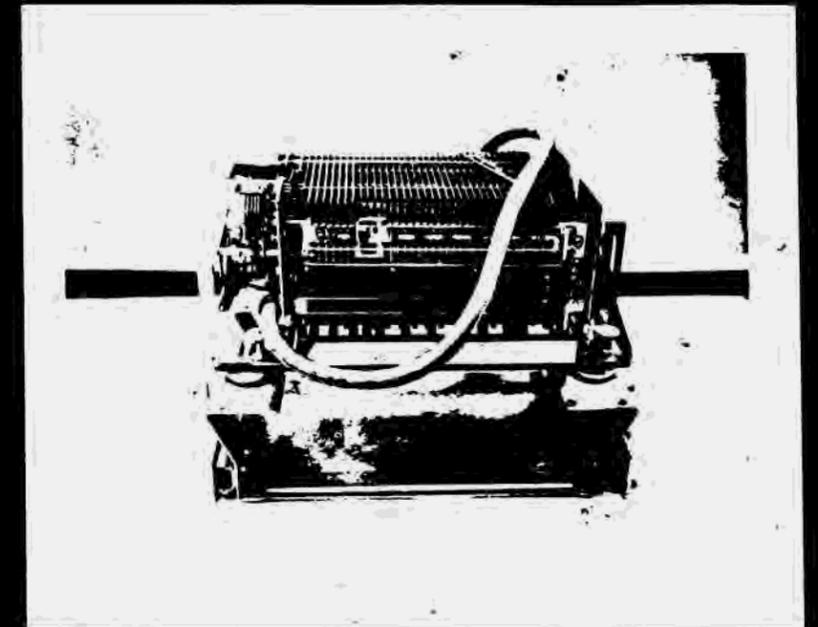
MUSEUM CODE: 9.1C-19

TECHNICAL BULLETINS & SPECS: 210B, 213B

PHOTO NO(S): Polaroid TU154

PATENT(S):

LIBRARY REFERENCES:



28-TYPE  
(MODEL "C")

The objective was to provide a higher speed, lighter weight, lower maintenance printer to largely be made up of punch press parts. The Model "C" used steel tapes for carriage positioning and a type-wheel sector rather than a type box as in later models. The Model "C" keyboard used 15 printer transmitter parts.

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YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

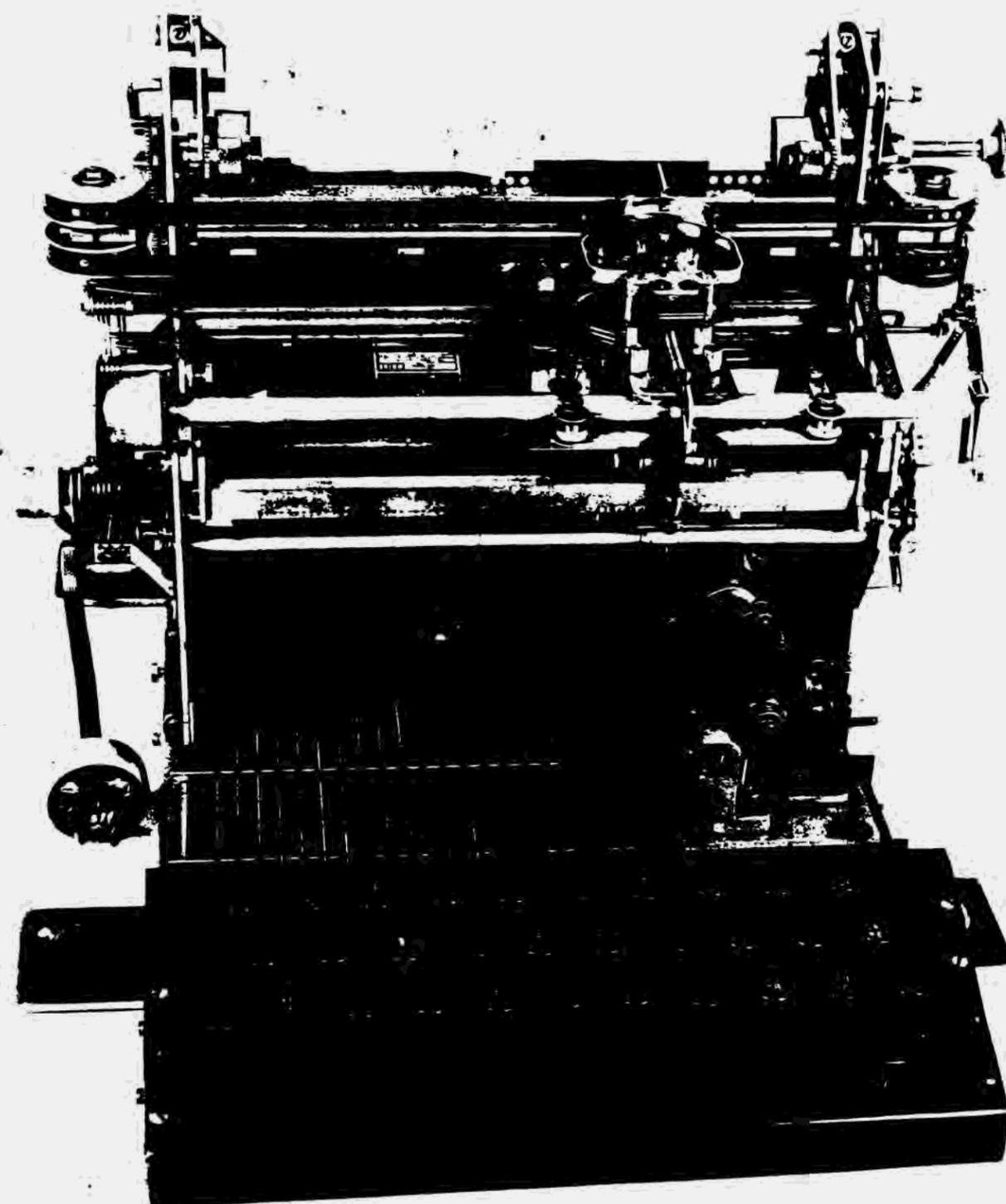
MUSEUM EQUIPMENT CODE: 1C-19

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 690505-26

PATENT(S):

LIBRARY REFERENCE(S):



(28-TYPE)  
PRODUCTION

After a succession of models, laboratory tests, and extensive field trials, the first lot of the new Model 28 page printers was ready late in 1950. Urgent needs of the Armed Forces in the Korean crisis were given priority, and it was not until 1953 that the machine was available to the general public.

In looking at the new printer, perhaps the most striking feature was the replacement of the usual bulky type-basket with a miniature carriage consisting of a 1"x3" type-box and a tiny print hammer. Internally, there were other innovations. The machine had no structural castings; side frames and base plate were resilient sheet metal. Speed and quiet operation were built in, not only with light-weight parts but with the principle of harmonic motions - so that the machine ran more smoothly and easily at 100 words per minute than conventional designs at slower speeds. Clutches were all metal and called for oiling once or twice a year, in contrast to two weeks for felt clutches.

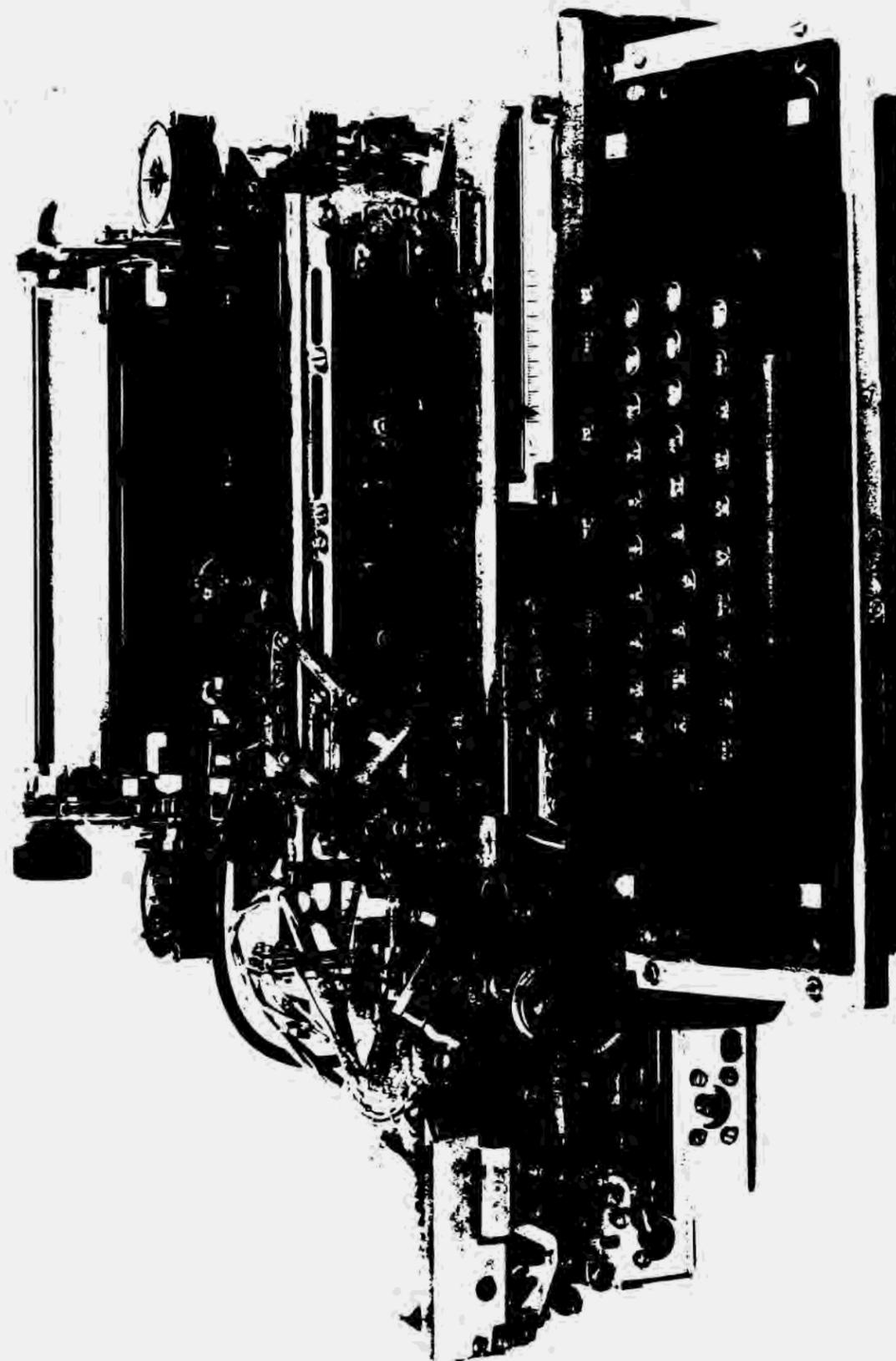
Of exceptional interest is the provision for extra features and remote controls. This is handled through a mechanism called the "stunt box" ("stunt" being an old printing telegraph designation for nontyping functions). In effect a built-in sequential selector, this 9 3/4"x 4 1/2"x 2 3/4" unit has slots which can be equipped with trains of miniature parts or switches to perform an almost unlimited array of tasks. Basically, the stunt box will perform the following operations:

1. Mechanically initiate internal functions within the typing unit of the page printer set.
2. Electrically control functions within the page printer set.
3. Electrically control external equipment.

The Model 28 was designed on the "building block" principle which can best be illustrated in the Model 28-ASR, introduced in 1957. Innumerable variations are possible in the basic combination of send-receive page printer, tape printer, tape punch, and tape reader to fit the requirements of the individual user.

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YEARS PRODUCED & QUANTITY:  
PRIMARY CUSTOMER(S):  
CLASSIFICATION CODE:  
MUSEUM EQUIPMENT CODE: 1C-21  
TECHNICAL BULLETINS & SPECS:  
PHOTO NO(S): 690505-23  
PATENT(S):  
LIBRARY REFERENCE(S):



28-TYPE  
(MODEL "D")

During World War II it was concluded that the Model 15 would require redevelopment in order to meet the growing list of operating requirements and to reduce maintenance costs. The 15-type printer redevelopment program was merged with the 28-type program, and this model resulted.

This unconventional (for the time) machine was compared with a possible new type-bar machine and it was concluded that the new design offered enough promise of basic improvement to warrant further development.

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YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

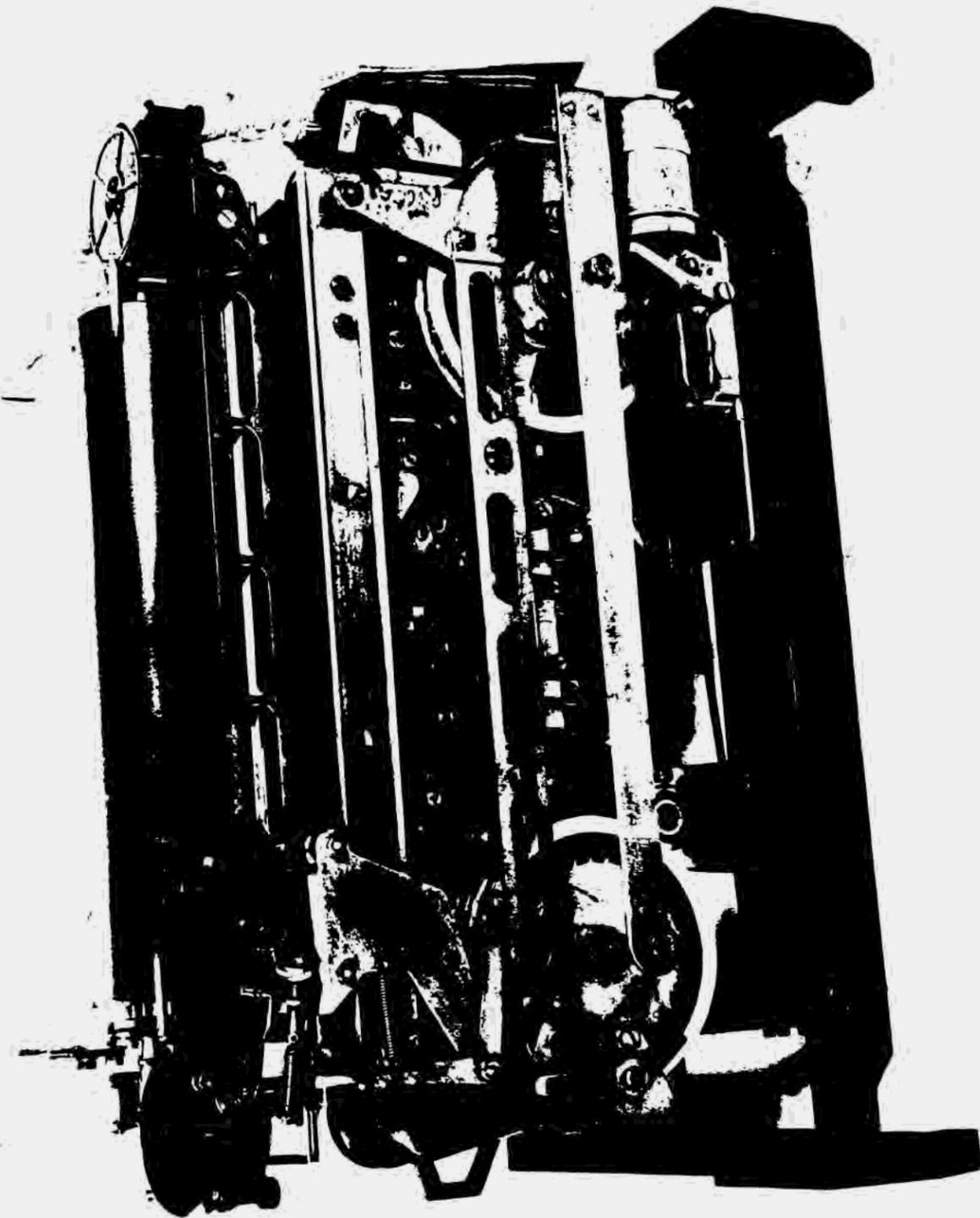
MUSEUM EQUIPMENT CODE: 1C-20

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 690505-25

PATENT(S):

LIBRARY REFERENCE(S):



FACSIMILE (3 UNITS) MODEL 17  
(Distributor)

This was a special facsimile in which the alphabetical and numerical character patterns were constructed by using one or more long lines and several short lines vertical to the printing line. These patterns were cut in discs assembled in a long drum. The signalling frequencies were keyed by the discs in conjunction with brushes which dropped down on to the discs when selected by a punched tape reader and magnet operated code bar arrangement - (60 WPM).

The printer for tape only consisted of an inked spiral ridge on a cylinder against which a magnet driven printing blade pushed the paper.

The character pattern principle reduced the frequency band from about 3000 cycles to 225 cycles. It was then possible with suitable filters to transmit voice and printer signals simultaneously on one voice band.

One of the original applications was for use in police cars to provide a written record as well as voice communication.

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YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

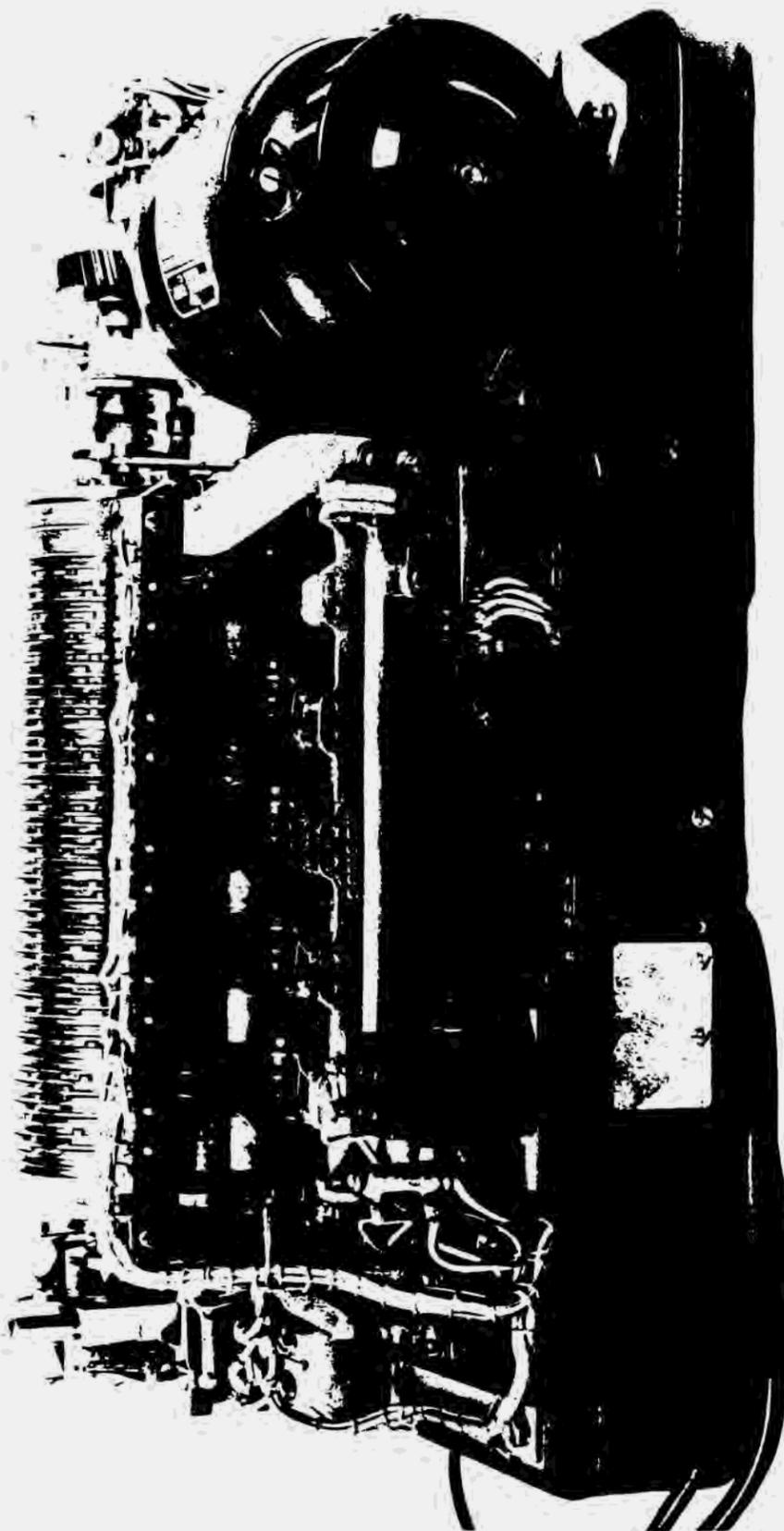
MUSEUM EQUIPMENT CODE: 7C-12

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 690505-16-17-18

PATENT(S):

LIBRARY REFERENCE(S):



MODEL 31 PRINTER

This portable tape printer was developed for intermittent use for the military. It was also used by Western Union Telegraph Company for reporting sporting events, and by Northern Electric.

Used primarily for aircraft installation, the light weight compact type printer featured a typewheel segment (120°), permissively driven against selected stops for positioning. It had a 400 cycle 26V Dynamator with electric speed control to conform to aircraft power supply.

Another interesting feature of the Model 31 was that it would work with any existing radio - telephone installation capable of providing satisfactory two way voice communication. The system operated very much like a press-to-talk radio telephone network except that instead of spoken words it handled typed messages. No manual operation of a press-to-talk control was required since the radio transmitter was turned on automatically when the first Teletype character was sent. One of these units was mounted in President Truman's aircraft.

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YEARS PRODUCED & QUANTITY: 1949-1959 500 units

PRIMARY CUSTOMER(S): Government, and Western Union

CLASSIFICATION CODE: M-31

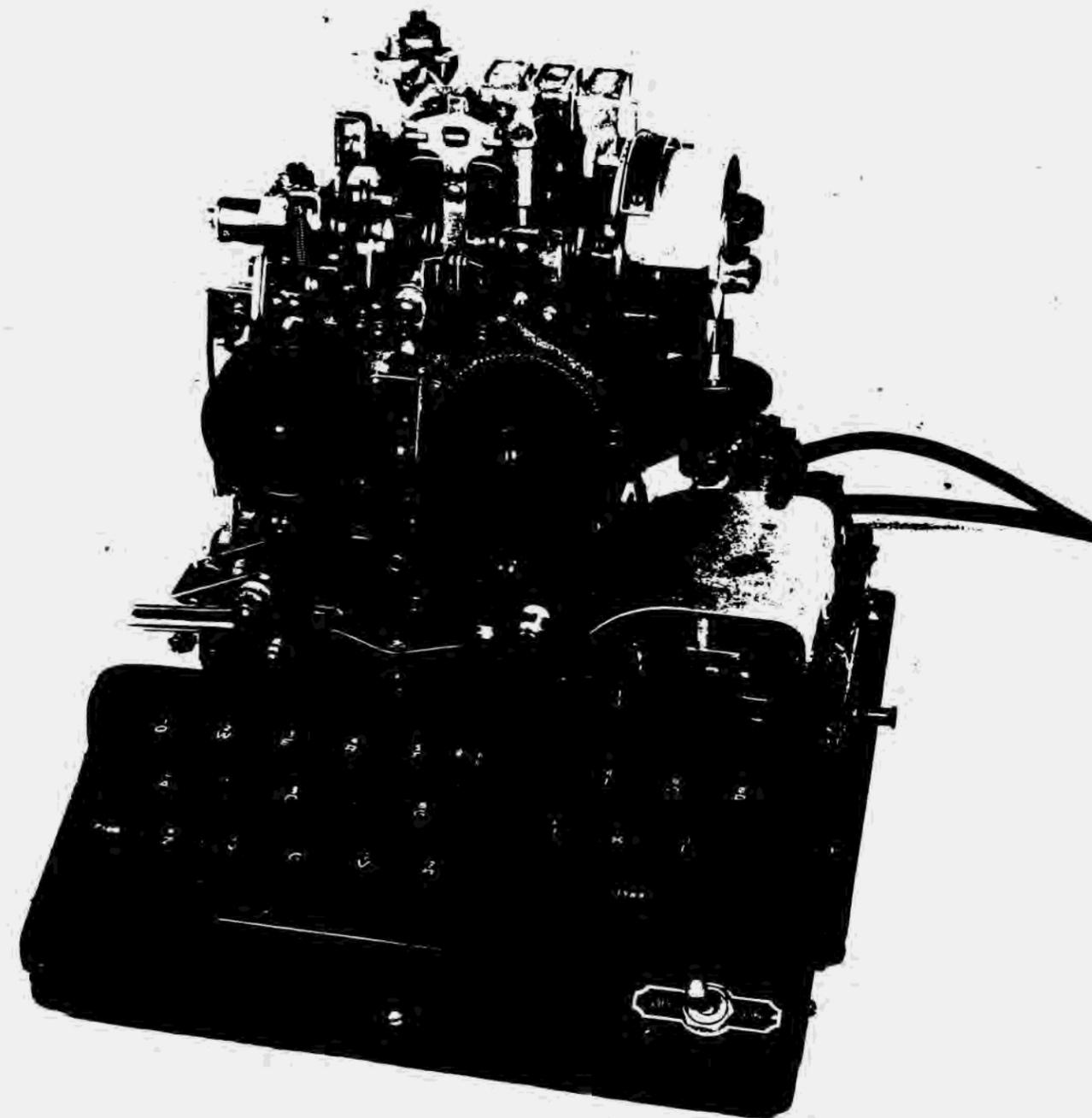
MUSEUM EQUIPMENT CODE: 2C-23

TECHNICAL BULLETINS & SPECS: Gen. Desc. 17. D1-1

PHOTO NO'S: 470708-31; 650627-89 and 90; 690505-08

PATENT(S): No 2,339,313 W. J. Zenner, Printing Telegraph Apparatus, granted 1/18/44.

LIBRARY REFERENCES: R. A. Vanderlippe, "High Flying Teletype," Western Electric Oscillator, October, 1946, pp. 24-26.



TELETYPE MODEL 36 (MONOPULSE) TAPE PRINTER SET

The Teletype Model 36 Monopulse printer is a simplified printing telegraph device designed to supplement conventional Teletype apparatus in local circuit applications where printed message service is desired but where the traffic is not sufficient to justify the installation of standard Teletype equipment. With Monopulse equipment, letters, figures, and the dash symbol (-) may be transmitted at a maximum speed of approximately twenty words per minute from a compact circular keyboard which is alphabetically arranged. Selection is obtained through variations in the length of single pulse signals originating with the keyboard transmitting station. The set is particularly adapted for economical printed inter-communication service in offices, stores, banks, railway stations, factories, warehouses, yards, etc., where all stations will be located within a limited radius and have access to the same 115 volt 60 cycle power source. Monopulse equipment is not adapted for operation with other Teletype apparatus, and because of this and other limitations is recommended for local message service only. For general communications service over extended circuits see Teletype Model 14 and Model 15 printers.

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YEARS PRODUCED & QUANTITY: 1942-1951 149 units  
PRIMARY CUSTOMERS: Bell, General  
CLASSIFICATION CODE: HP (Printer) HK (Keyboard)  
MUSEUM CODE: 2C-24  
TECHNICAL BULLETINS & SPECS: 16, D1-1  
PHOTO NO(S): 690505-11  
PATENTS:  
LIBRARY REFERENCES:



PORTABLE PAGE PRINTER

This portable page printer was developed in 1937 for signal corps field service. However, during World War II, the Model 15 printer mounted in wooden chests (TG7) was used. After the war, the signal corps had a portable printer made to their specifications.

The portable page printer featured a typewheel (or type disc) split into segments for each character, mounted in a vertical position at the front of the platen. To print, a type hammer would strike the front of the segment, flexing it to impress the character against the platen. Featuring a holding magnet selector, the portable page printer operated at a speed of 368 .p.m.

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YEARS PRODUCED & QUANTITY: Never produced in quantity  
PRIMARY CUSTOMER(S): Signal Corps  
CLASSIFICATION CODE: 1C-11  
MUSEUM EQUIPMENT CODE: 1C-11  
TECHNICAL BULLETINS & SPECS:  
PHOTO NO'S: 370629-62 thru 68; 650319-31,32,33; 690505-10  
PATENT(S):  
LIBRARY REFERENCES: None Available



30-TYPE

This was the first really successful attempt to produce a light weight communications device. The unit on display is the Model 32 Automatic Send and Receive Set (ASR). It is a versatile tele-typewriter of modern design to be used in various communication networks and data processing systems. The Model 32 set operates using a five-level code and is capable of transmitting and receiving data at four basic speeds, 60, 66, 75, and 100 words per minute. A printer and punch are provided for recording data, whether originated locally or remotely, by printing it on page copy or perforating and storing it in paper tape. To further automate the set a tape reader permits the transmission of data stored in paper tape. Also, an answer-back mechanism is furnished which can be triggered by a local or remote station to generate up to (20) characters of station identification. The call control unit serves as a convergence point for electrical wiring, and which can also be equipped with a dial and push-button controls to facilitate telephone line communication. The Model 33 is the same machine except that it operates using a eight-level code which provides for greater character capacity and the ability for the operator to type without shifting between letters and figures.

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YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

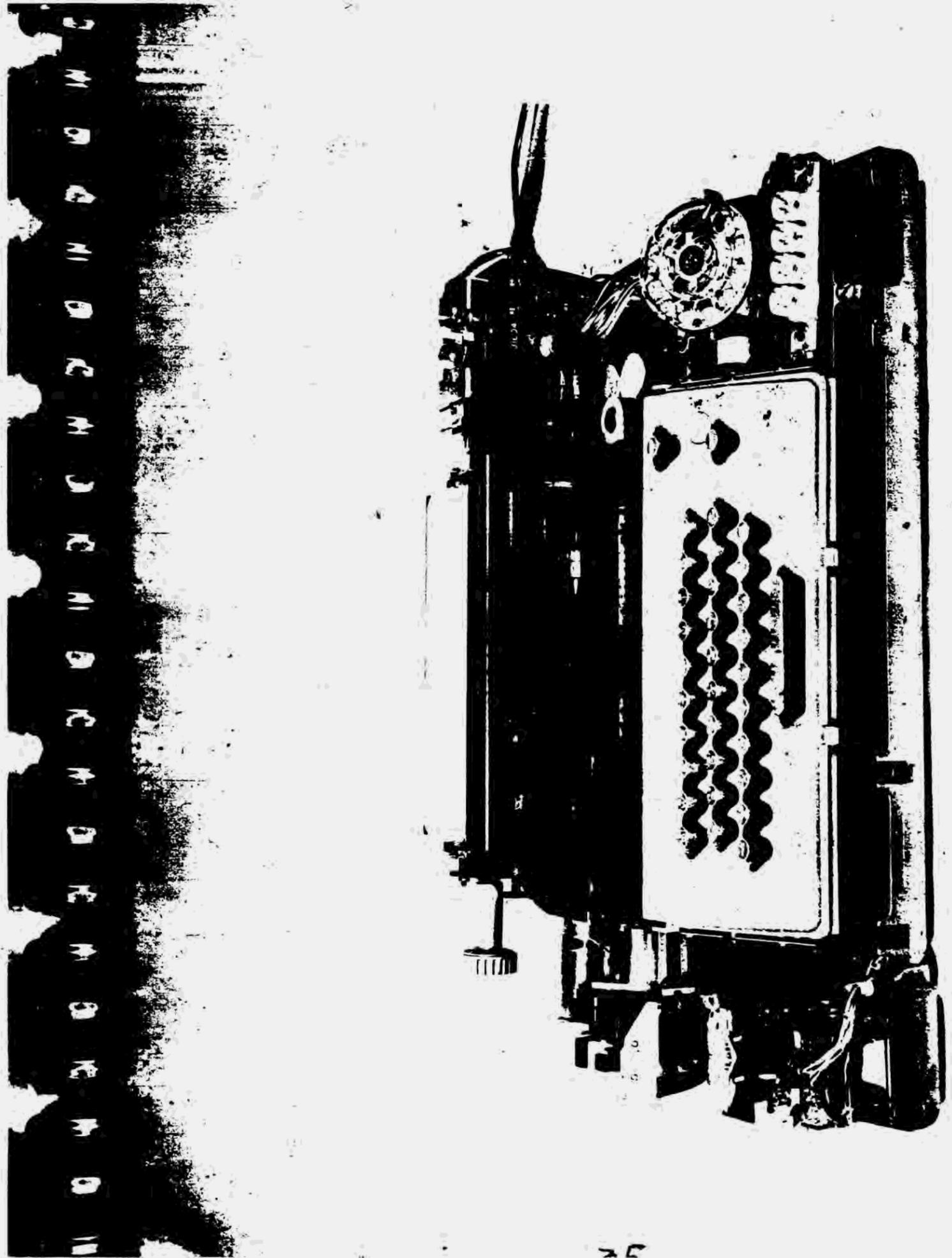
MUSEUM EQUIPMENT CODE: 1C-22

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 690505-20

PATENT(S):

LIBRARY REFERENCE(S):



NEW YORK QUOTATION COMPANY STOCK TICKER

In this system two wires and two type-wheels are used. One of the wires is used exclusively to operate the press lever and the shift mechanism of the tickers. To operate the press lever the press circuit is simply closed momentarily; to operate the shift mechanism the polarity of the current on the press circuit is reversed at the transmitting station.

In printing telegraphy, in the transmission of signals at a high rate of speed, considerable skill is required on the part of the operator to accurately gauge the proper duration of his fingers on the keys of the board, to insure sufficient time for the correct printing of each letter.

In the system in question a device has been introduced by C. L. Healy to "lock" the circuit of each key the moment it is depressed, and keep it locked until after a letter or figure has been transmitted, when the key is automatically unlocked. By the use of this device, it is only necessary that the transmitting operator should depress his key for an instant when the "locking" device comes into play and holds the key circuit closed until the letter or figure is printed, without further thought on the part of the operator.

When a positive current is passing over the line, the type-wheels of the tickers are "set" to print letters on the paper tape. When figures are to be printed, a negative polarity is placed to the "press" circuit.

YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

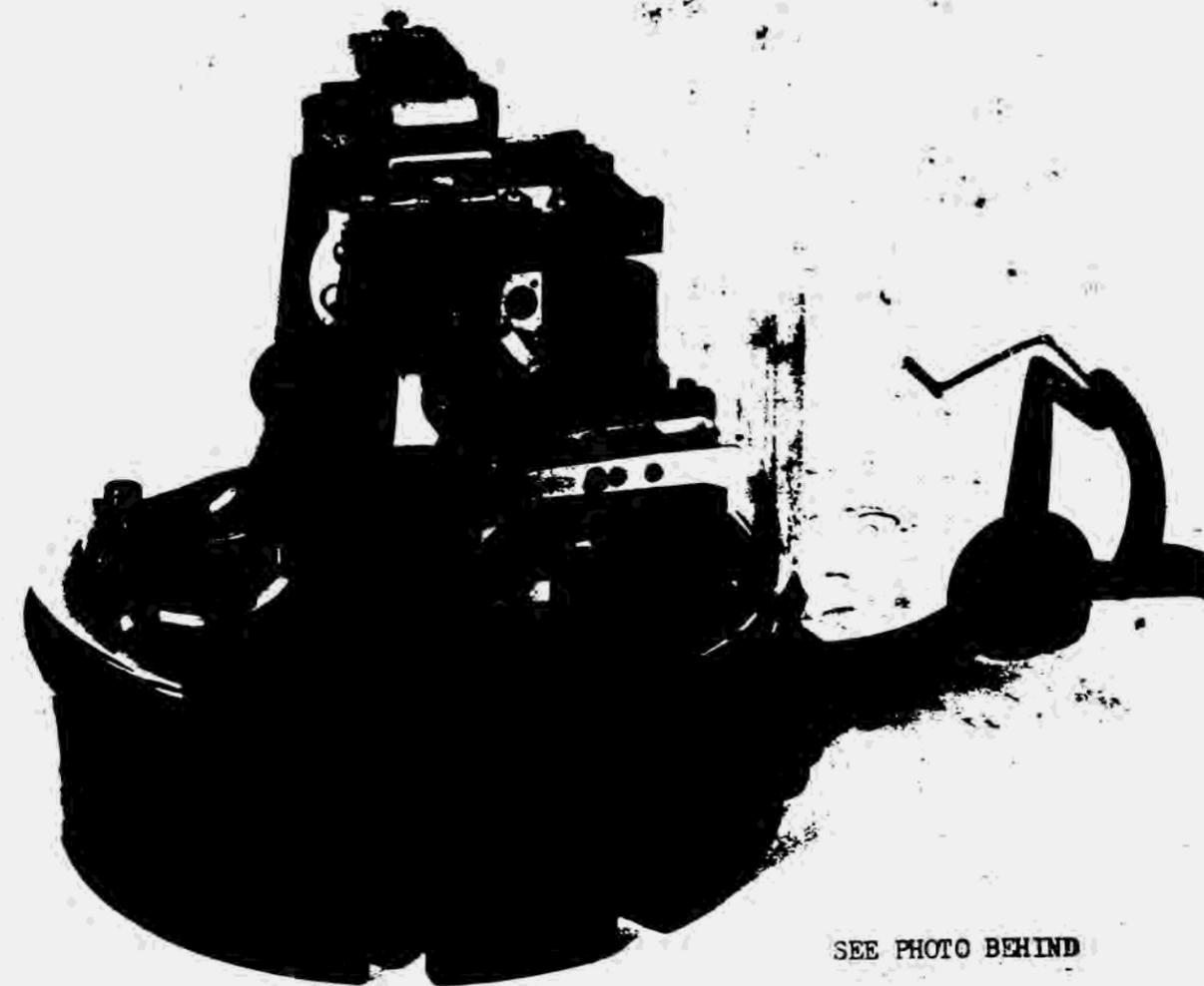
MUSEUM EQUIPMENT CODE: 6A-2

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 650421-20

PATENT(S):

LIBRARY REFERENCE(S):



SEE PHOTO BEHIND

EDISON TICKER

In large cities, where quotations are required in brokers' offices from stock exchanges the messages are always printed automatically upon a band of paper. One such instrument was the Edison or Universal Ticker.

In this device a band of paper driven by an electromagnet in the base was pressed forward by the action of a pulley as the message was printed. The operation of the printing telegraph was based essentially upon a principle extensively used in telegraphy called the "step-by-step principle". An electromagnet caused a ratchet wheel to oscillate under an escapment until some particular tooth was reached. In printers of this type a typewheel was revolved by a succession of electromagnetic impulses producing a step-by-step movement, until the particular letters or figure desired came over the band of paper, when another electromagnet, called the printing magnet, was energized and effected the printing of the letter on the paper band. Two typewheels were carried on the printing shaft, one for letters, and the other for figures, the transition from one wheel to the other being effected by suitable means. There were two pairs of binding posts, one on each side of the instrument, each pair being provided for connection to an independent line. In other words, two lines were employed to operate the instrument, the instruments being connected in series. Each pair of binding posts belonged to one line throughout the entire series. The apparatus could work at as high a speed as 40 words per minute.

YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

MUSEUM EQUIPMENT CODE: 6A-1

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 690505-06

PATENT(S):

LIBRARY REFERENCE(S):



16-TYPE TICKER

A high-speed (in 1930), 750 OPM, type-bar tape printer with specially constructed quick action type-bars, the 16-type was designed to be used as a stock ticker. The 16-type was an outstanding machine, but the depression reduced the market for it.

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YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

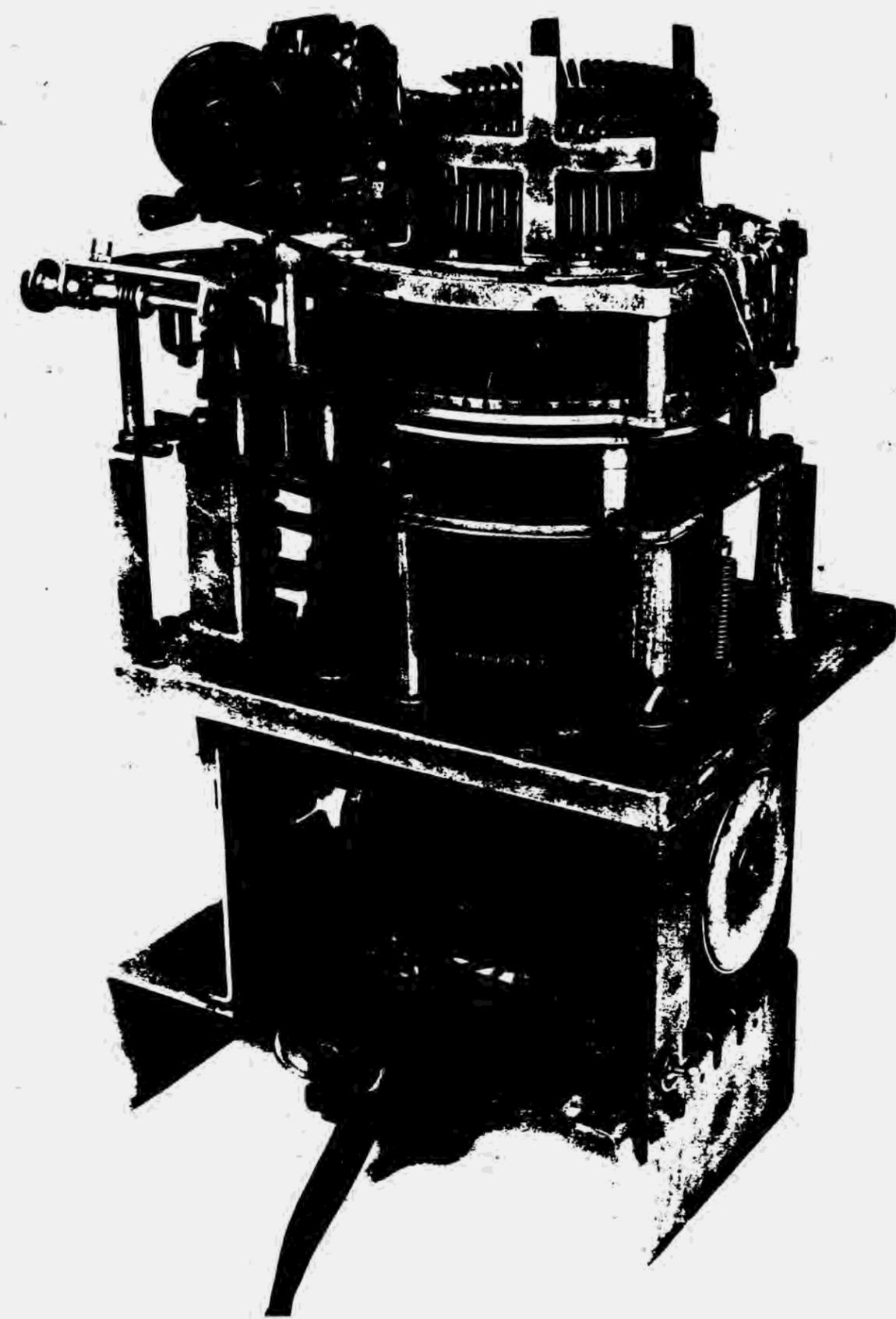
MUSEUM EQUIPMENT CODE: 6C-8

TECHNICAL BULLETINS & SPECS:

PHOTO NO(S): 690505-05

PATENT(S):

LIBRARY REFERENCE(S):



STOCK QUOTATION TICKER (CP TYPE) MORKRUM-KLEINSCHMIDT

During the period that the United States' business cycle was on a continuous upswing (during the late 1920's), securities sales on the New York Stock Exchange were going to constantly higher volume, and the old step-by-step stock ticker did not, by large margins, keep pace in recording stock share transactions. There was a cry for a higher speed stock ticker; in fact, the Stock Exchange officials told Morkrum - Kleinschmidt that they would be happy to convert the entire system if they could get higher speed.

An adaptation of the five-unit-code, start-stop system seemed the solution and the research and development department set out to develop suitable apparatus. Several ideas were studied and, because of the frequent changes from letters to figures, requiring printing in separate rows on the tape, a six-unit code was adapted instead in which combinations for a figure included the sixth selecting pulse to operate the figures print hammer and block the letters print hammer.

The Morkrum - Kleinschmidt Company was soon able to show the Stock Exchange people a stock ticker operating on a telegraph system that worked at twice the speed of the step-by-step operated tickers then in use. A speed of 500 printing operations per minute could be obtained, thus attaining a one-hundred-percent increase in the transmitting and recording of stock quotations on the tape. The Stock Exchange Ticker Service Company ordered 15,000 of these high-speed tickers and the Western Union Telegraph Company also ordered a quantity for their National Stock quotation distributing systems.

YEARS PRODUCED & QUANTITY: 1928-1940

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

MUSEUM EQUIPMENT CODE: 6B-1

TECHNICAL BULLETINS & SPECS: Bulletins 136, 137

PHOTO NO(S): 690505-04

PATENT(S):

LIBRARY REFERENCE(S):



28 TAPE PRINTER (TICKER) \*

The tape printer unit serves as a receiving-only tape-type printing telegraph unit when connected to terminal facilities of a wire or radio telegraph circuit. The unit receives stock quotations and transactions on an input signal of 6-level 9-bit stock ticker code at a speed of 900 operations per minute and a signal speed of 135 baud.

Through action initiated by energization and de-energization of the selector magnets which attracts or releases the armature, the electrical signaling code combinations are transformed into mechanical motion which, when acted upon by rotation of main shaft, prints on one inch wide paper tape for direct reading or on transparent tape for projection, and advances the tape and ribbon.

The tape printer unit consists of a selecting mechanism (basically a Model 28 2-cycle selector converted to 6-level); with range finder transfer assembly; code bar assembly; main shaft assembly with a selector clutch; code bar clutch, function clutch, and tape box clutch; an aggregate motion transverse positioning mechanism controlled by four all steel clutches; double print hammer printing mechanism; typebox; ribbon feed and tape feed mechanism.

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\*This unit is actually a 37-type device. It was referred to in various bulletins as 28-type. This was for political reasons. It is basically a 37-type printing mechanism since it uses aggregate motion positioning.

YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

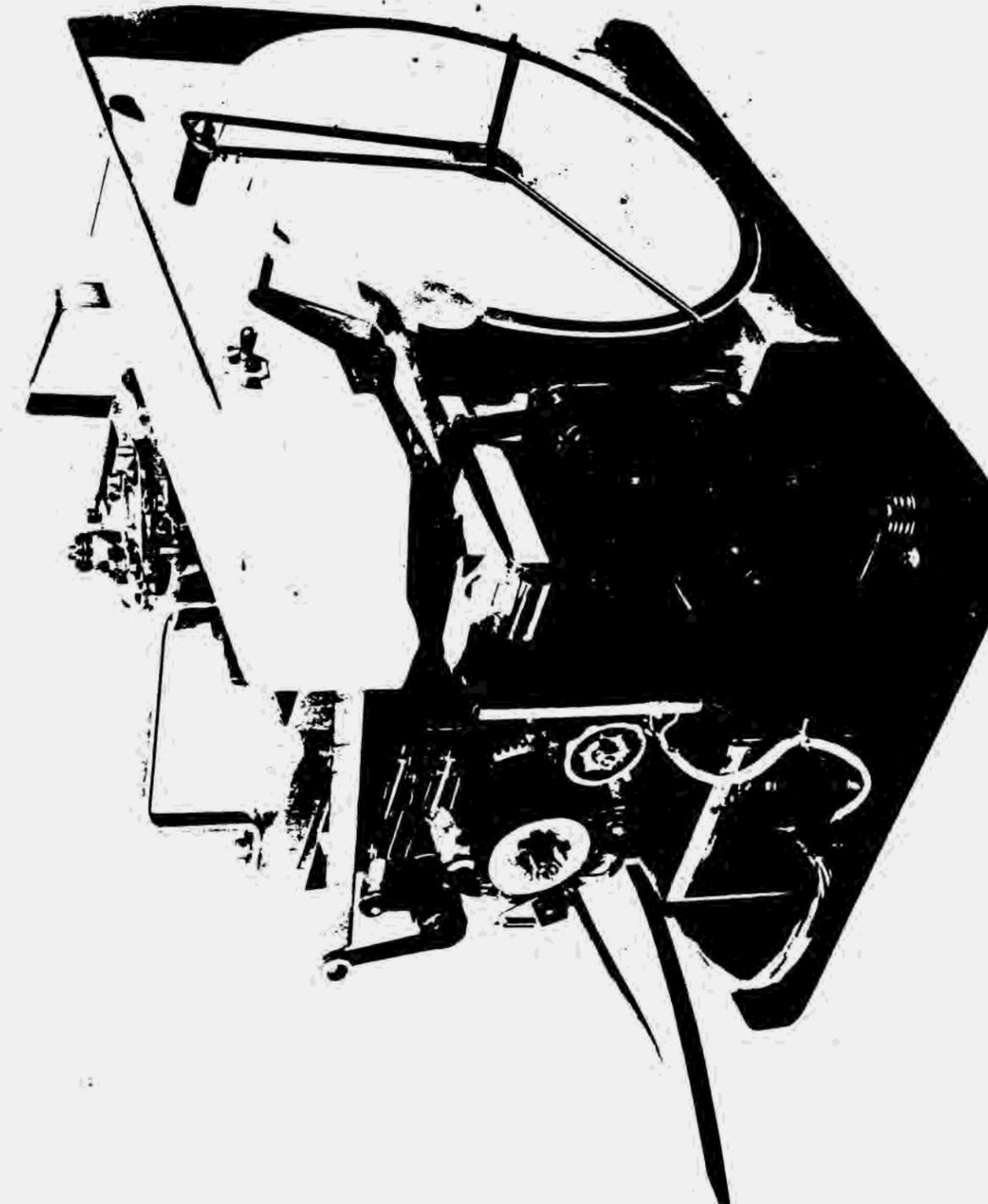
MUSEUM EQUIPMENT CODE: 6C-9

TECHNICAL BULLETINS & SPECS: 573-140-100TC

PHOTO NO(S): 690505-04

PATENT(S):

LIBRARY REFERENCE(S):



AN/FSC-25

KLEINSCHMIDT TELEPRINTER MODEL 154

This automatic send/receive set, called a "complete station set" by the manufacturer combines a type-bar page printer with a reader and punch. The set is equivalent to the Teletype Model 28 ASR. Operating speed 100 WPM.

YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

MUSEUM EQUIPMENT CODE: 12D-5

TECHNICAL BULLETINS & SPECS:

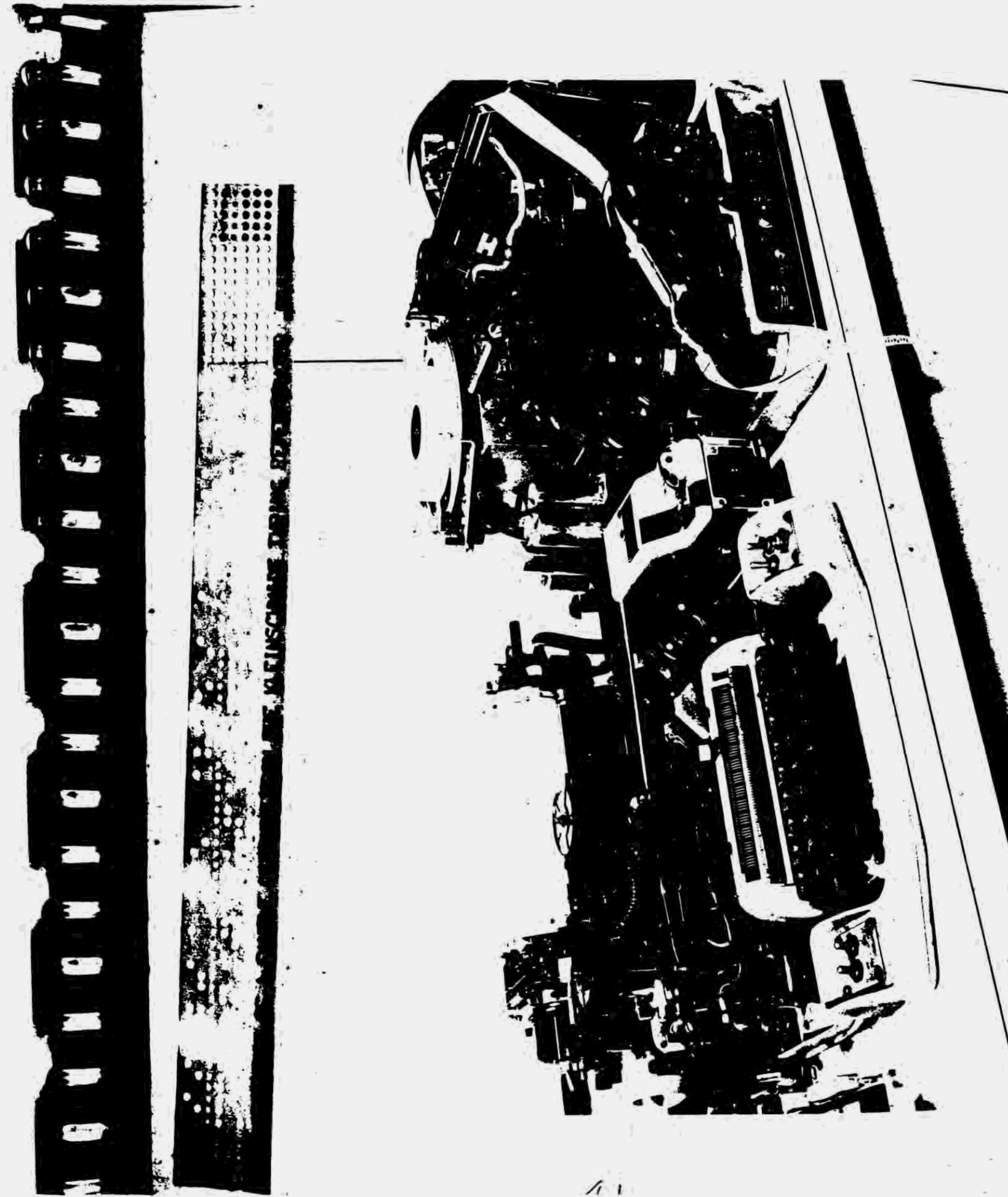
PHOTO NO(S): 690505-29 510708-95

PATENT(S):

LIBRARY REFERENCE(S):

SCRAPPED per memo 4-21-77 File D-6(7)

*R. R. Smessaert*  
R. R. SMESSAERT - 9151  
3-6-78



AN/T6C-14A

MITE TACTICAL PAGE PRINTER (MODEL AN/T6C-14A)

Model AN/T6C-14A light weight tactical page printer developed for the Marine Corps. Total weight with immersion-proof carrying case and all accessories - 39 lbs.

Receiving Margins

	<u>60 MA.</u>	<u>20 MA.</u>
Range	76.0	72
Bias	41.0%	42%
End Distortion	40.5%	42%
Internal Bias	5.5%	5%

YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

MUSEUM EQUIPMENT CODE: 1D-1

TECHNICAL BULLETINS & SPECS:

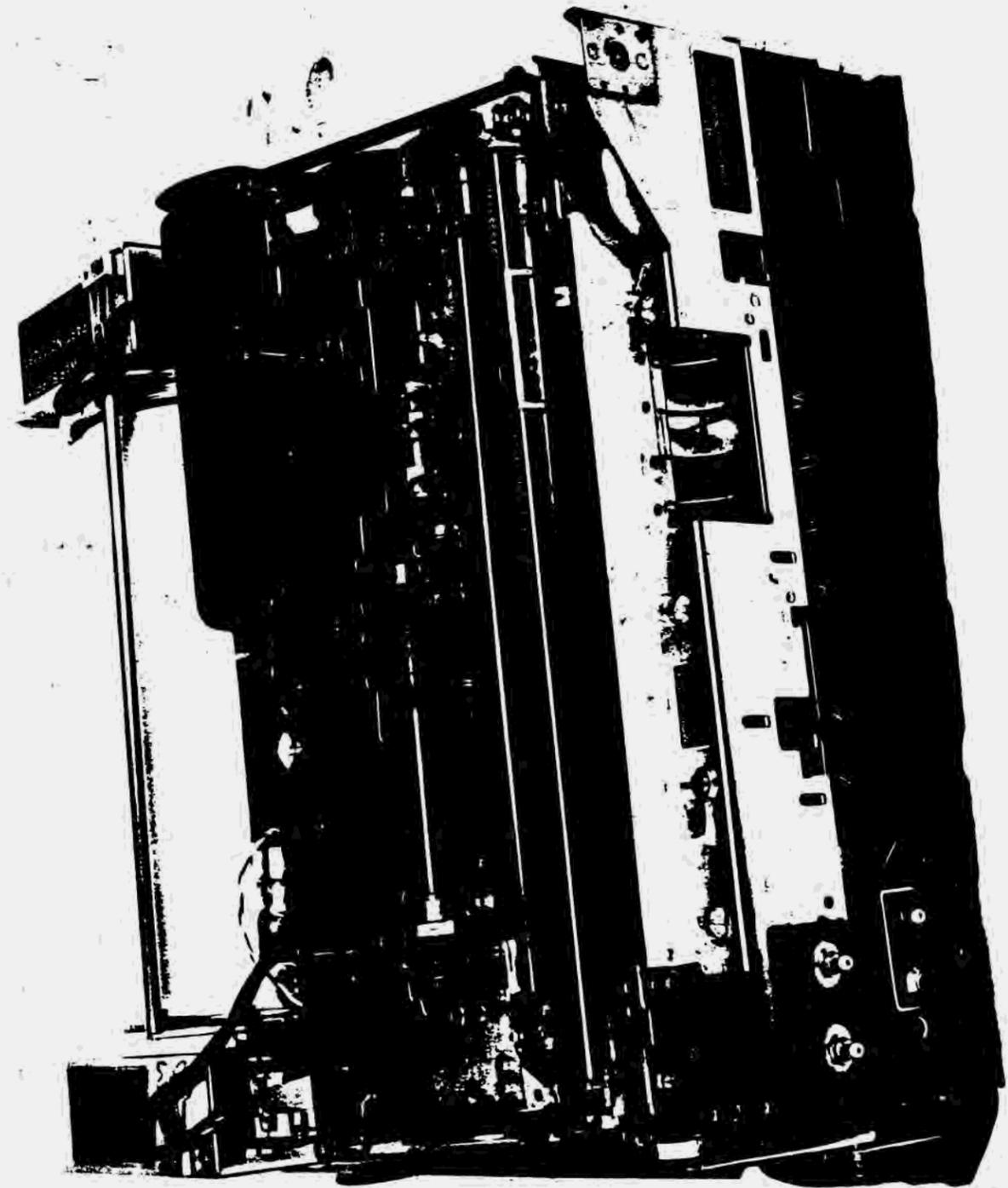
PHOTO NO(S): 690505-41

PATENT(S):

LIBRARY REFERENCE(S):

SCRAPPED per memo 4-21-77 File D-6(7)

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R. R. SMESSAERT - 9151  
3-6-78



MODEL LO 133 LORENZ  
PAGE PRINTER

The Lorenz LO 133 is a 5-level, 7.5 unit code, 133 WPM page printer with tape handling facilities for desk top operation. If the page printer is connected to the public telex network, a manual teleprinter exchange or in point-to-point connection, it is always ready for reception. Automatically it records incoming as well as outgoing messages on paper. For better distinction, incoming and outgoing messages are printed in different colors by means of the two-color shift feature. Different to the typewriter, the platen of the LO 133 is stationary, whereas the type bar carriage moves. The tape Reperforating Attachment ELO 133 and Transmitter Distributor Attachment LS 133 can be incorporated into the page printer. For point-to-point operation, the Page Printer LO 133 is available with an automatic motor switch which, after termination of communication, automatically shuts off the page printer motor according to an adjustable time. For use in teleprinter-on-radio systems where the possibility of a mutilation of the telegraph characters or failure of the "Carriage-Return" and "Line Feed" combination exists, the LO 133 is equipped with automatic carriage-return and automatic line feed facilities.

YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

MUSEUM EQUIPMENT CODE: 1D-5

TECHNICAL BULLETINS & SPECS: Test Report No. 9536 Case No. 17811 File No. D-125

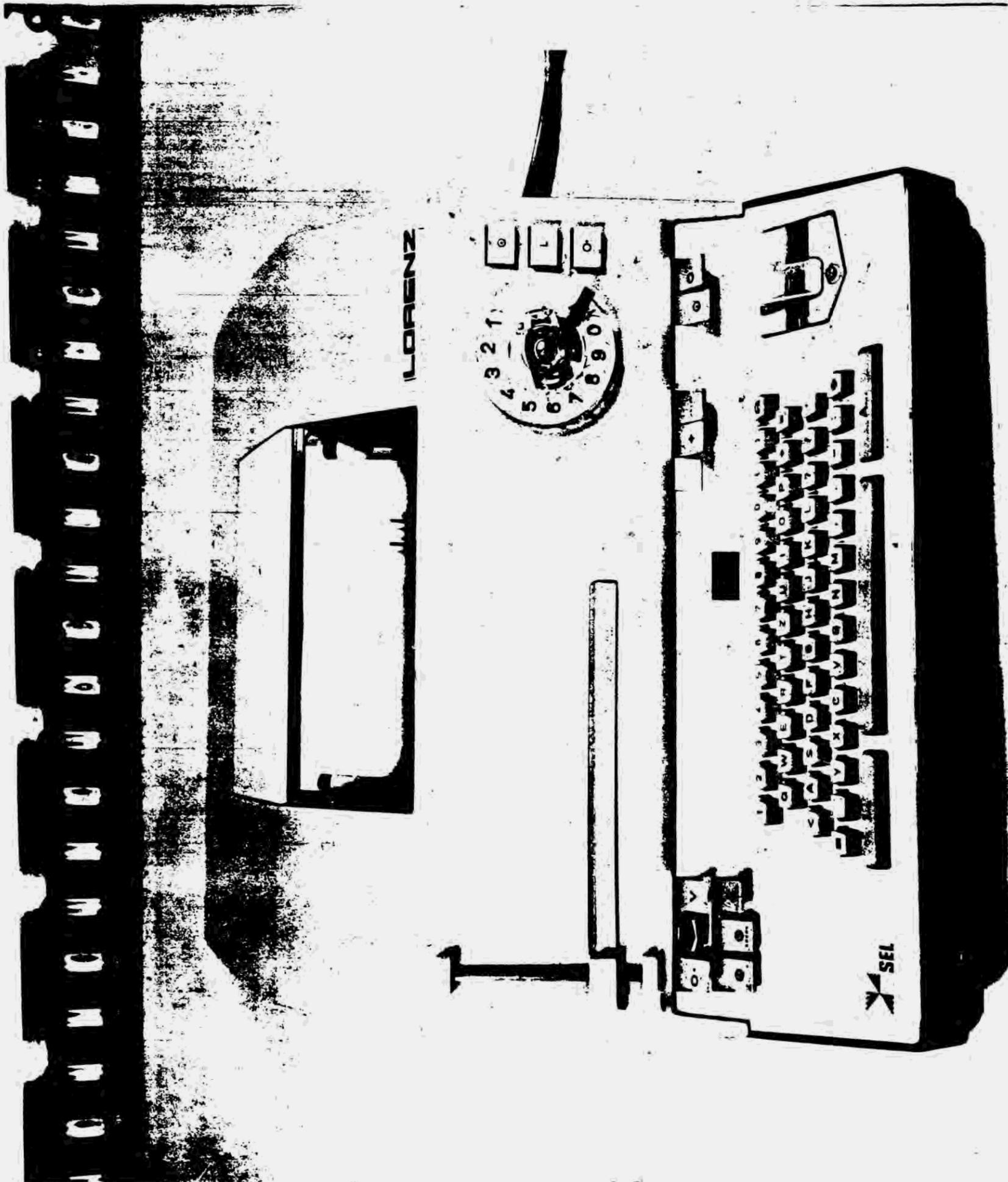
PHOTO NO(S): 690505-46 670804-01,02,03,04,05 671108-90,91,92,93,94,95,96,97,98,99,100,-01,02,03,04,05,06,07,08,09

PATENT(S):

LIBRARY REFERENCE(S):

SCRAPPED per memo 4-21-77 File D-6(7)

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3-6-78



SIEMENS 100

This typebar page printer is equipped with reperforator and tape reader. The signal generator is of the single contact variety and the printer selector magnet is of the holding type.

YEARS PRODUCED & QUANTITY: 1960 Production

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

MUSEUM EQUIPMENT CODE: 12D-1

TECHNICAL BULLETINS & SPECS:

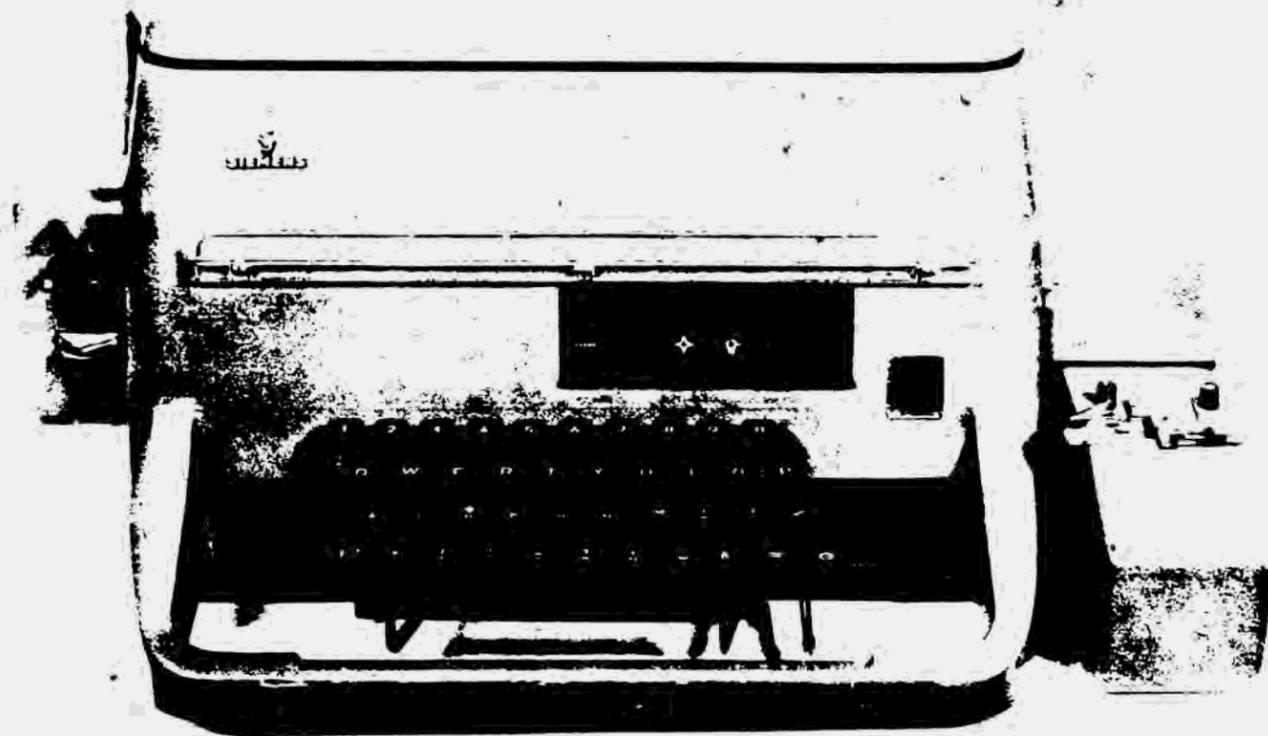
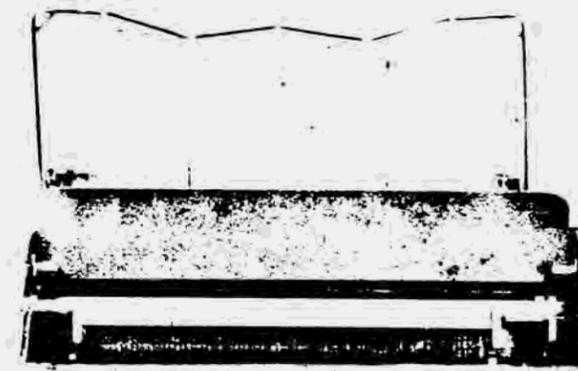
PHOTO NO(S): 690505-43

PATENT(S):

LIBRARY REFERENCE(S):

SCRAPPED per memo 4-21-77 File D-6(7)

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3-6-78



CREED MODEL 75 PAGE PRINTER

This sending-receiving printer was manufactured in 1960 by Creed and Company Limited, Crydon, England. Six contacts are used for transmitting, a polar selector magnet is used for receiving. The printer is operated mechanically by the sending-receiving cam shaft. Operating speed up to 100 WPM.

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YEARS PRODUCED & QUANTITY: 1960 Production

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

MUSEUM EQUIPMENT CODE: 1D-3

TECHNICAL BULLETINS & SPECS:

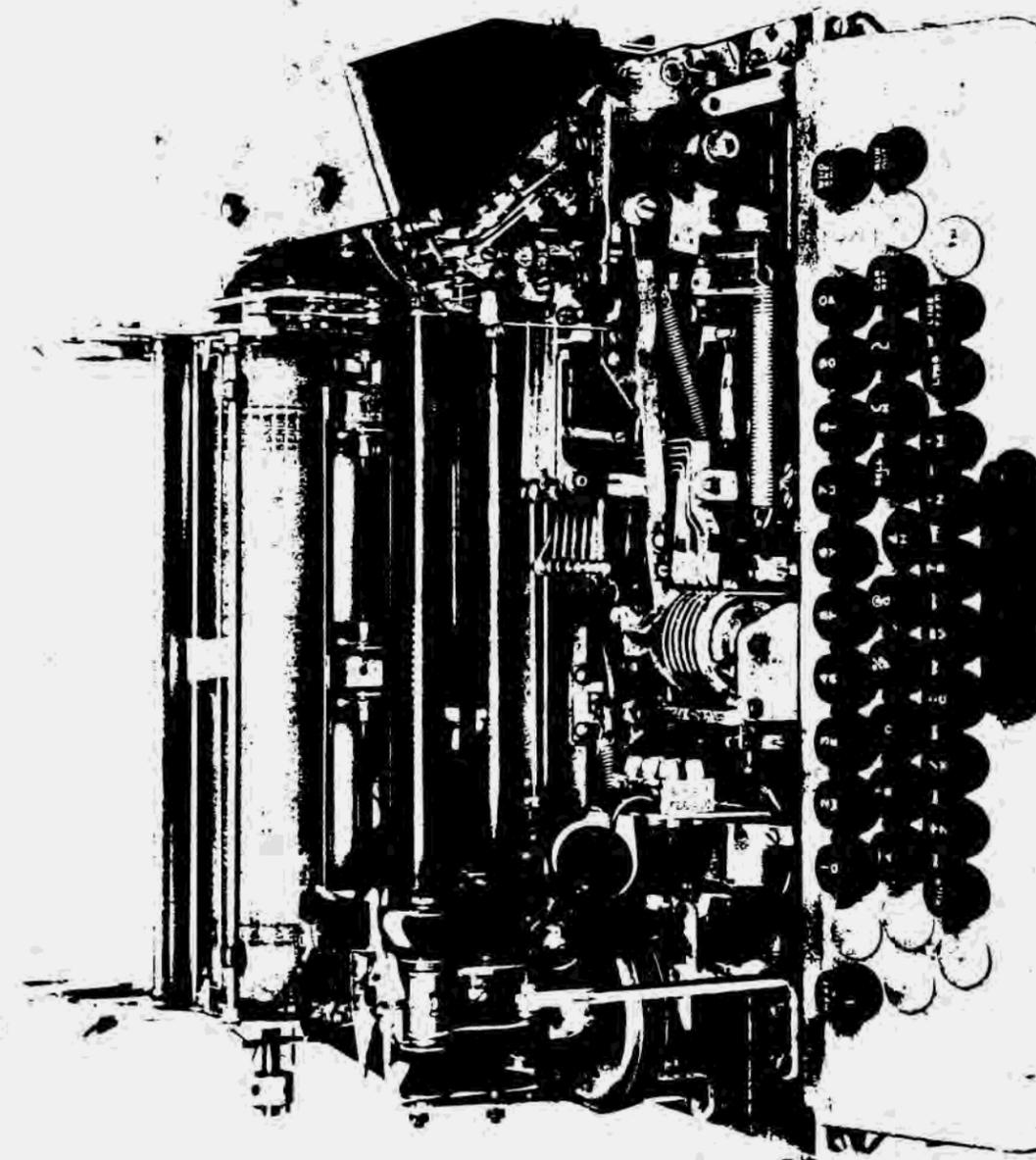
PHOTO NO(S): 690505-45, 610713-43

PATENT(S):

LIBRARY REFERENCE(S):

SCRAPPED per memo 4-21-77 File D-6(7)

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3-6-78



SAGEM TRANSISTORIZED TELEPRINTER

Semi-automatic teleprinter that sends, receives, and monitors teletypewriter messages, using the international C.C.I.T.T. n° 2 code.

Sending: Characters selected at the keyboard are stored, transmitted, and page-printed under electronic control.

Receiving: In-coming code sensing, translation, and page-printing are electronically controlled.

Type: SPE Series 5

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YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

MUSEUM EQUIPMENT CODE: 1D-4

TECHNICAL BULLETINS & SHEETS:

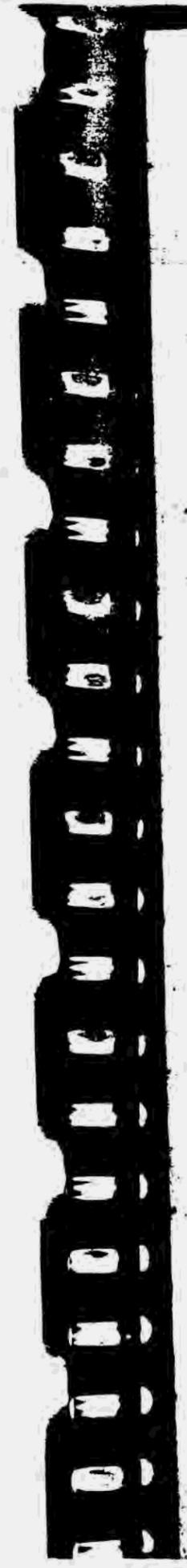
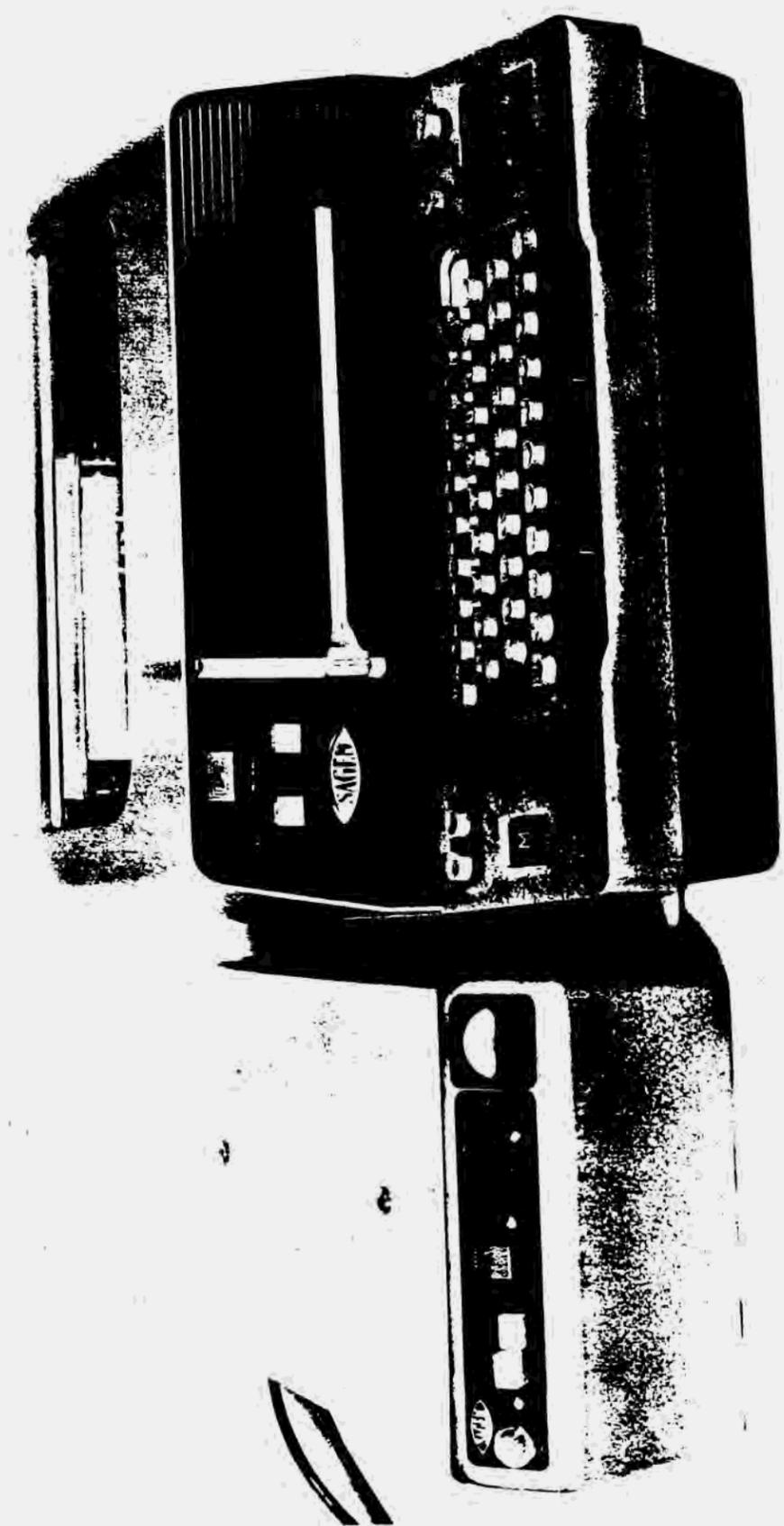
PHOTO NO(S): 690505-44

PATENT(S):

LIBRARY REFERENCE(S):

SCRAPPED per memo 4-21-77 File D-6(7)

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R. R. SMESSAERT - 9151  
3-6-78



MODEL TE300 OLIVETTI  
PAGE PRINTER

The table mounted Olivetti (at \$2,110 in 1969) provides 100 wpm teletypewriter communication using 20-65 ma neutral or polar signalling. The unit employs a binary data stream (11 unit, start-stop code) signal. The TE300 uses a powered keyboard which provides a light touch and high burst rate generally found only in electric typewriters. This machine uses a governed induction motor rather than a series governed motor. Though the induction motor will not tolerate as wide a frequency variation, it does operate from either a nominal 50 or 60 Hertz line, and does away with the need for brushes.

In the Olivetti unit, 96 characters are distributed on six separate typewheels (16 characters per wheel). Each wheel has its own print hammer. The print hammers, type wheels, ribbon storage and feed mechanism, and type wheel positioning mechanism make up the carriage (or "print unit"). The carriage is supported on a rear rail and a rotating drive shaft but is free to move laterally. The unit is comparable to the Teletype M37 Unit. The Olivetti Reperforator, PE308, when selected will punch all characters received or transmitted by the machine in 1 inch paper tape. The reperforator shares the distributor with the Typing Unit. The Olivetti Tape Reader (SE308) is mounted at the left of the keyboard, and translates information punched in 1 inch tape (8 unit code) into serial electrical signals. The unit also employs an electro-mechanical "answerback" device.

YEARS PRODUCED & QUANTITY:

PRIMARY CUSTOMER(S):

CLASSIFICATION CODE:

MUSEUM EQUIPMENT CODE: 1B-6

TECHNICAL BULLETINS & SPECS: Specs. 6806S, 61, 3545, 60, 3355 Test Report 982L

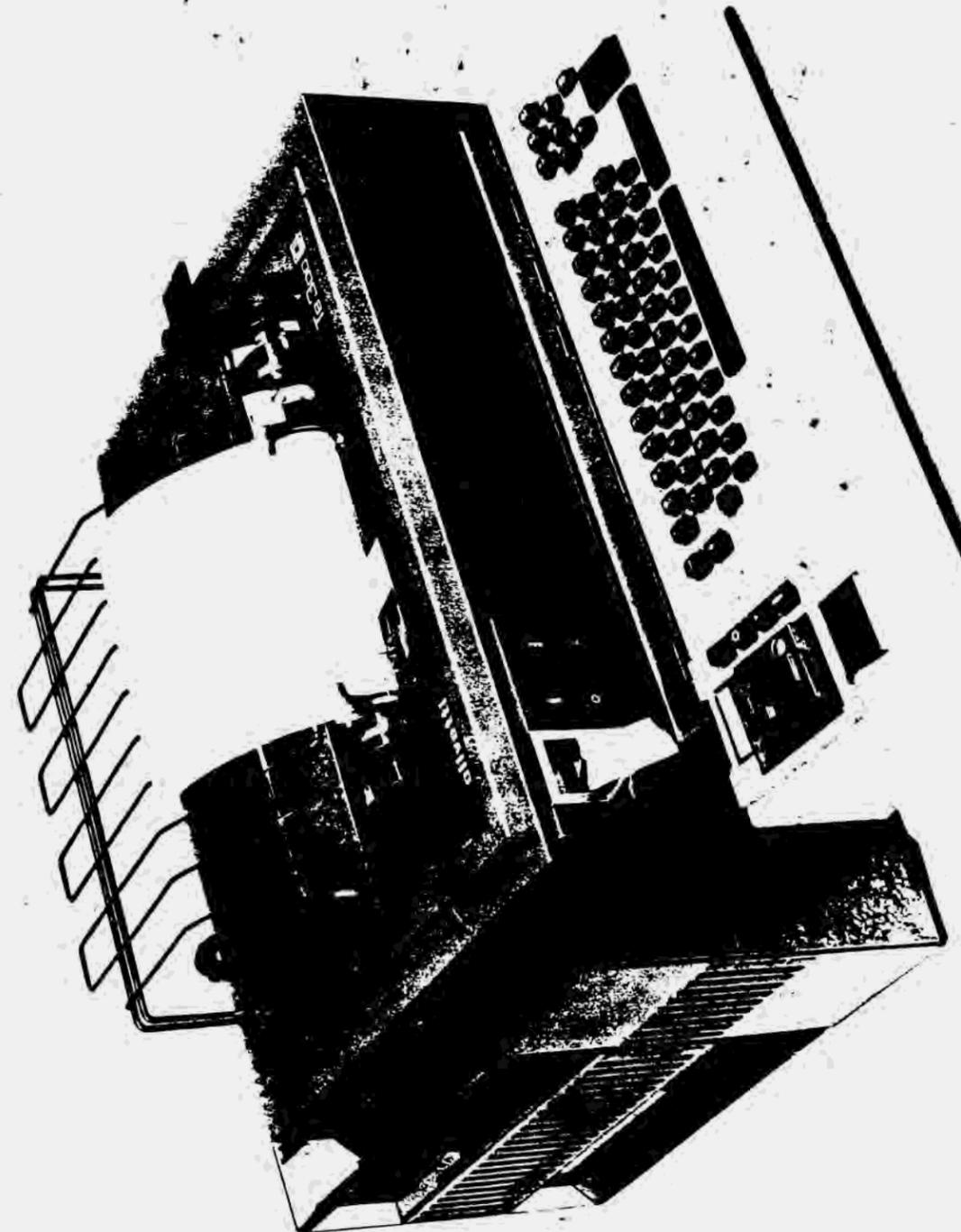
PHOTO NO(S): 681211-50,51 681227-01,02,03,04

PATENT(S):

LIBRARY REFERENCE(S):

SCRAPPED per memo 4-21-77 file D-6(7)

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R. R. SMESSAERT - 9151  
3-6-78



PITTSBURG STANDARD NO. 11

One of 12 different models produced by the Pittsburgh Writing Machine Company of Kittaning, Pennsylvania. The first of these models was an improvement over the formerly named Daugherty typewriter. It was called the Pittsburgh Visible and was produced in 1898. The Pittsburgh Visible had an interchangeable type basket, permitting the use of different keyboards and languages on the same machine. An interchangeable and removable carriage was also a feature. This first model had a fan-shaped arrangement of type-bars. In the later models such as the Pittsburgh No. 11, the type-bars were arranged in parallel position. The company went into receivership in July 1913, and the plant was sold on March 16, 1914, for \$12,000 to J. S. Kuhn of Pittsburgh. The Pittsburgh was later reproduced as the Reliance Premier, the Reliance, and the Shilling. Production ceased in about 1921.

YEARS PRODUCED & QUANTITY: 1908

PRIMARY CUSTOMERS: General Public

CLASSIFICATION CODE: No. 11

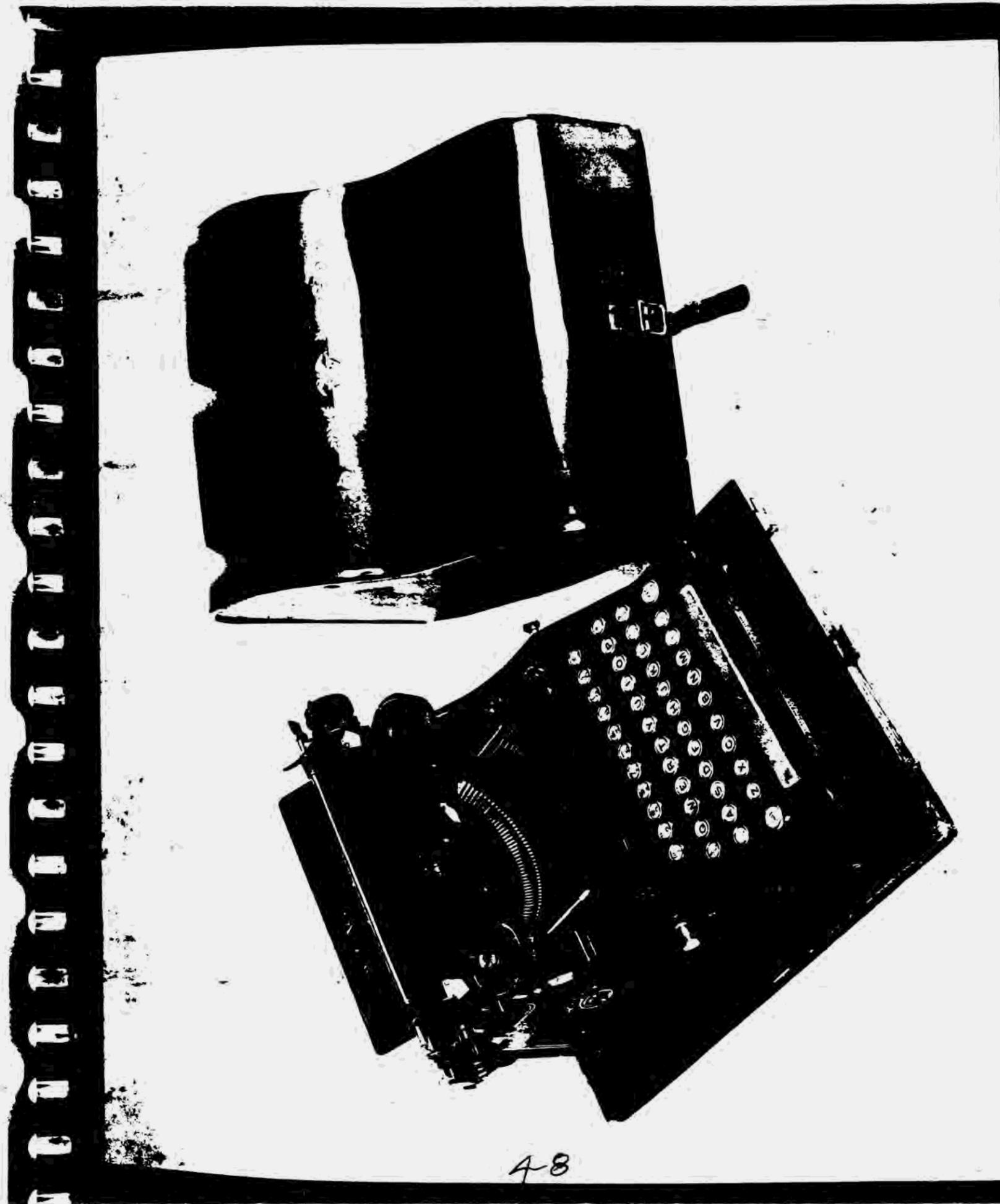
MUSEUM EQUIPMENT CODE: 10A-3

TECHNICAL BULLETINS & SPECS: None Available

PHOTO NO(S): Oelschlager photo

PATENTS:

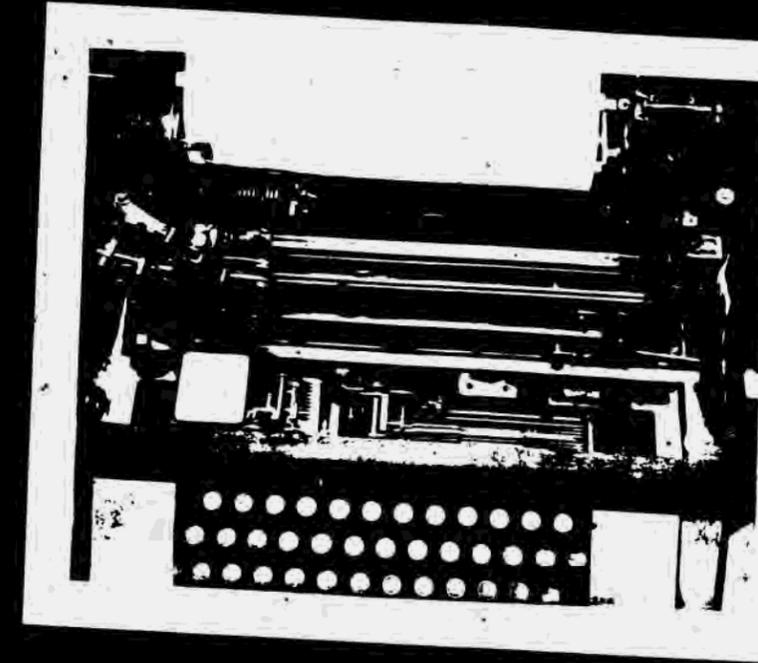
LIBRARY REFERENCE(S): History of the Typewriter, Reprinted from the Original History of 1923, Metropolitan Typewriter Co.; Herrl, George. The Carl P. Dietz Collection of Typewriters, Publications in History No. 7, Milwaukee Public Museum, 1965.



MODEL 20 PAGE PRINTER (6-UNIT)

The Model 20 sending-receiving page printer set provides means for interchanging type written telegraph messages between two or more points by direct keyboard transmission. It utilizes the 6-unit permutation code which permits a wider selection of characters and operations than is provided by the 5-unit code, and prints both capital and small letters. The keyboard is similar in appearance to a standard typewriter keyboard and messages are received in printed page form on continuous roll or multifold paper. This set, which is used primarily in conjunction with Teletypesetter applications, will not operate with Teletype equipment employing the conventional 5-unit code.

PICTURE →  
IS M29  
(M20 WAS 6-UNIT)  
M15



*Picture is M29  
M15*

### FLOOR MODELS (12, 15, and 28)

Three of the four floor models on display are the Model 12, Model 15, and Model 28 ASR. As indicated in a previous description, when other companies began experimenting with type bar printing, the Morkrum Company started intensive development work to produce the Model 12 typebar printer, (far right in photo) using the typebars and operating mechanism of the L. C. Smith typewriter and platen of a Woodstock typewriter.

While the Bell System used the Model 12, they indicated a desire for additional features that would be an advantage in private wire service. The Model 15 (middle in photo) placed in volume production in 1930, incorporated these features and many others. This became the standard Teletype page printer that was to see service all over the world. Quieter in operation than the Model 12, the Model 15 was also less bulky. Of major importance was the fact that the paper platen - which on the Model 12 moved as the message was typed - remained stationary while the type basket moved across the paper, eliminating paper feeding problems. The machine also offered a broader scope for extra features, such as control of associated equipment, tabulating mechanisms, and handling of business forms. In design, it was as nearly as possible a page version of the Model 14 Tape Printer, with all that unit's mechanical simplicity, sturdiness, and extreme reliability for unattended services.

During World War II, Teletype undertook the development of an entirely new line of equipment - the Model 28. It was to run at 100 words per minute, while at the same time be quieter in operation and lighter in weight. It was to have provisions for incorporating extra features and remote controls as well as withstand environmental handicaps such as arctic cold and tropical heat, shock, vibration, and non-level positions inherent in operating aboard moving vehicles. Finally, it was to be designed on the "building block" principle, to permit maximum interchange of parts, mechanisms, and units. As indicated in a previous description, the Model 28 ASR (far left in photo) is the best illustration of this principle. Introduced in 1957 the Model 28 ASR permits innumerable variations in the basic combination of send-receive page printer, tape printer, tape punch, and tape reader to fit the requirements of the individual user.

