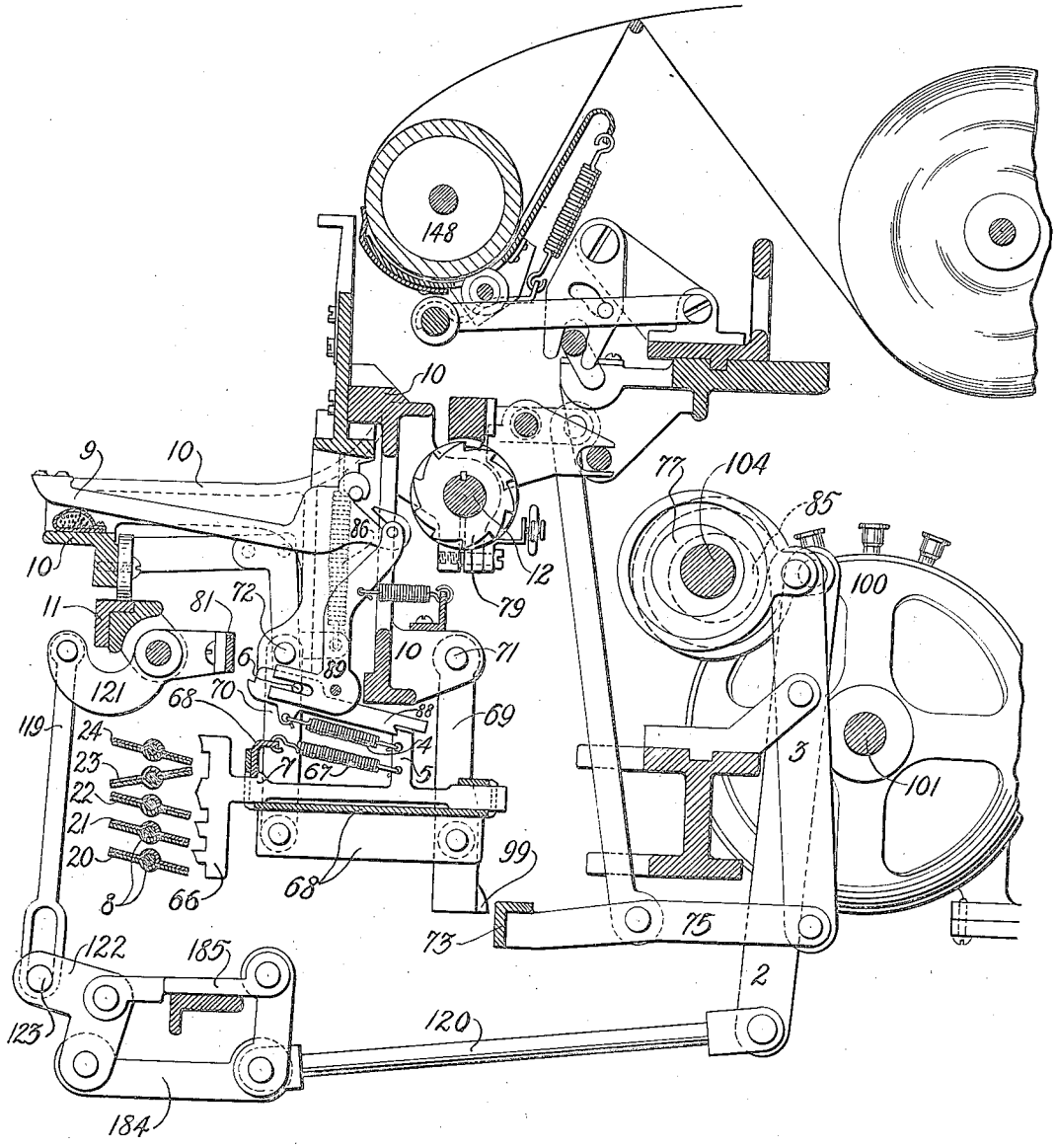
A. H. ADAMS.

PRINTING TELEGRAPH.

APPLICATION FILED JULY 21, 1920.

1,426,803.

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UNITED STATES PATENT OFFICE.

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PRINTING TELEGRAPH.

1,426,803. Specification of Letters Patent. Patented Aug. 22, 1922.

Application filed July 21, 1920. Serial No. 397,806.

To all whom it may concern:

Be it known that I, ARTHUR H. ADAMS, a citizen of the United States, residing at Galion, in the county of Crawford, State of Ohio, have invented certain new and useful Improvements in Printing Telegraphs, of which the following is a full, clear, concise, and exact description.

This invention relates to printing telegraphs and particularly to printing telegraph receiving apparatus wherein the printing of characters and various auxillary operations are performed by power-driven mechanism controlled by line current impulses.

An object of this invention is to provide efficient and reliable means whereby positive cooperation between the selecting members and selectable members is insured.

For the accomplishment of the above object the invention contemplates the employment of a plurality of selecting members or bars which are adapted to be arranged in different combinations and permutations, and a plurality of selectable members or permutation bars which are arranged to be moved into cooperation with the selecting bars for selection purposes. More specifically the invention contemplates the employment of a plurality of horizontal selecting bars, which may be actuated in any suitable manner, preferably by selecting magnets controlled by line impulses. The selecting bars extend entirely across the printer and may be rotated both clockwise and counter-clockwise, for selection purposes, but are not arranged to be moved endwise. A plurality of selectable members or notched permutation bars are provided, and the arrangement of these bars with respect to the selecting bars is such that when the selecting bars are arranged in any combination, only one of the selectable bars will be permitted to move forward and mesh with the selecting bars. Each of the selectable bars controls an operating link or member which is adapted to be moved forward by the selected bar into the path of a reciprocating printing bar, which printing bar is preferably controlled by a rotating power shaft. When an operating link is moved forward and engaged by the printing bar, a type face carried by the selected type lever is thrown against the paper platen and the selected character printed in a well-known manner.

This invention relates to certain features of construction and is a companion case to an application of H. Pfannenstiehl, Serial No. 397,903, filed July 21, 1920. In the co-pending application above referred to, Serial No. 397,903 a complete disclosure and a full description of a commercial receiving printer is given, and therefore in this application, only so much of the apparatus is disclosed and described as is essential to an understanding of the invention.

The above and other features of this invention will be fully set forth in the following description and claims and will be readily understood by reference to the accompanying drawing, which shows a sectional view of the printer taken through the center of the type carriage.

In the accompanying drawing there is shown a paper platen 148 and a type carriage 10. On the type carriage is mounted a plurality of type levers 9, a corresponding number of bell crank levers 89 suspended from the type levers, a corresponding number of operating links 88, and a corresponding number of selectable bars 66. The type carriage 10 is supported by a frame 11 and a rotatable shaft 12. In the arrangement shown, the type carriage is adapted to be moved transversely of the printing platen for line printing.

The selecting bars 20, 21, 22, 23 and 24 are balanced on supporting rods 8, which are mounted in the frame of the machine in any suitable manner. Mounted at a right angle to the horizontal selecting bars is a group of selectable bars 66 equal in number to the number of characters carried by the type levers in a given row of type. The selectable members 66 are carried in slots in the suspended frame structure 68. Each selectable bar is provided with a shoulder 7, which is normally held in engagement with the structure 68 by means of a spring 67, one end of which is connected to 68 and the other to an extension arm carried by each member 66. Suspended from each type lever 9 is a pull bar 89 and between each

pull bar and its corresponding selectable bar is a connecting or operating link 88. In one end of the operating link there is a pin 6 adapted to slide into an open slot in the pull bar 89. The other end of operating link 88 is provided with a shoulder which co-operates with an extension 5 on the selectable bar 66 and is held in engagement therewith by means of a spring 4. From an examination of the drawing it will be noted that the type levers 9 and pull bars 89 are suspended from the type carriage 10 proper, while the selectable bars 66 are supported by a member 68 pivotally connected to suspension arms 69 and 70, which are pivotally connected to and suspended from the type carriage 10 at 71 and 72. The arms 69 and 70 and the cross member 68 are arranged in the form of a parallelogram.

The necessary power for operating the printing mechanism is supplied by a motor 100. By means of a driving shaft 101 and suitable gears and clutch mechanism, (which is fully disclosed in the copending application, Serial No. 397,903), the motor 100 operates a power shaft 104 on which is mounted a plurality of eccentrics for performing the various operations. After a given selection has been set up on the selecting bars 20 to 24 inclusive, an eccentric 77 mounted on the power shaft 104, operating through rocker arms 3 and 75, moves the universal bars 73 forward and upon engaging a member 99 mounted on the end of the supporting rod 69, the supporting members 68, 69, 70 and the code bars 66 and operating links 88 are moved forward toward the selecting bars. All of the selectable members 66 and operating links 88 will move forward until the unnotched portions of all of the selectable bars, except one, engage the edges of the selecting bars 20 to 24. There will always be one selectable bar, however, notched to correspond with the selection set up on the selecting bars, and this bar will move forward astride the selecting bars, and in moving forward in this manner, will move its corresponding operating link 88 into the path of a reciprocating printing bar 81. The printing bar 81 is reciprocated by means of an eccentric 85 mounted on the power shaft 104, and operates through rocker arm 2, connecting links 119, 120, 184 and 185, and levers 121 and 122. When the striker bar 81 engages the operating link 88, it will, by reason of the pin 6 operating in the open slot in pull bar 89, cause the type carried by a corresponding type lever to be thrust against the paper platen. When the universal bar 73 is withdrawn from the member 99 by means of the eccentric 77, a spring 86, one end of which is connected to the type carriage 10 and the other end to an extension arm of supporting lever 70, will cause the code bars 66 and the frame on which they are mounted to be returned to normal position, as shown in the drawing.

It will be noted that the code bars 66 are normally under the tension of springs 67, tending to move them toward the selecting bars, but are restrained from moving forward by means of a shoulder 7 on each of the selectable bars being in engagement with the supporting member 68. When the support 68 is moved forward by the universal bar 73, the selectable bar 66 would tend to go forward on account of the friction between the selectable members and the slotted portions of the supporting members 68, even if no springs 67 were provided. However, the provision of springs 67, connected in the manner shown, insures the forward movement of the bars 66 until they are brought to a positive stop by engaging the edges of the selecting bars when all pull bars except one will be restrained against further forward motion. When a particular bar 66 has been selected and permitted to move forward, the shoulder 7 carried thereby will remain in engagement with the supporting plate 68, while the remaining bars 66 will be held back by the selecting bars so that the shoulders 7 do not engage the support 68. However, as the members 68, 69 and 70 return to normal, all of the shoulders 7 will be engaged by members 68 and positively restored to their normal position.

What is claimed is:

1. In a printing telegraph receiver, a plurality of selecting bars, a plurality of permutation bars the selection of any one of which determines the character to be printed, a support for said permutation bars, and means for moving said support and said permutation bars toward said selecting bars for selection purposes.

2. In a printing telegraph receiver, a plurality of selecting bars, a plurality of permutation bars the selection of any one of which determines the character to be printed, a type carriage, a support for said permutation bars suspended from said type carriage, and means for moving said support and said permutation bars toward said selecting bars for selection purposes.

3. In a printing telegraph receiver, a plurality of type elements, a selecting bar individual to each of said type elements, a plurality of selectable bars, a support for said selectable bars, flexible means connecting said support and said selectable bars to insure movement of said bars with said support, and means for moving said support and said selectable bars toward said selecting bars for selecting purposes.

4. In a printing telegraph receiver, a plurality of selecting bars, a plurality of permutation bars the selection of any one of

which determines the character to be printed, a support for said permutation bars arranged in the form of a parallelogram, and means for moving said support and said permutation bars toward said selecting bars.

5. In a printing telegraph receiver, a plurality of selecting bars, a plurality of permutation bars the selection of any one of which determines the character to be printed, a type carriage, a support for said permutation bars arranged in the form of a parallelogram and supported from said type carriage, and means for moving said support and said permutation bars toward said selecting bars.

6. In a printing telegraph receiver, a type carriage, type levers mounted on said carriage, actuating levers connected thereto, a plurality of selectable bars, connecting means between said permutation bars and said actuating levers, a plurality of selecting bars, a support for said permutation bars, and means for moving said support to bring said permutation bars into cooperation with said selecting bars.

7. In a printing telegraph receiver; a plurality of selecting bars; a type carriage carrying a plurality of type levers and actuating levers; a plurality of permutation bars; a support therefor; means connecting said actuating levers and said permutation bars; and means for moving said connecting means, permutation bars and support forward for selection purposes.

8. In a printing telegraph receiver, a movable type carriage carrying a plurality of type levers, a plurality of selecting bars, a selectable bar individual to each of said type levers, a support for said selectable bars suspended from said type carriage, and means for bringing said selectable bars toward said selecting bars for selecting purposes.

In witness whereof, I hereunto subscribe my name this 13th day of July A. D., 1920.

ARTHUR H. ADAMS.