H. S. McCORMACK.

TYPE WRITING MACHINE.

APPLICATION FILED FEB. 11, 1908.

904,002. Patented Nov. 17, 1908.

Fig. 1.

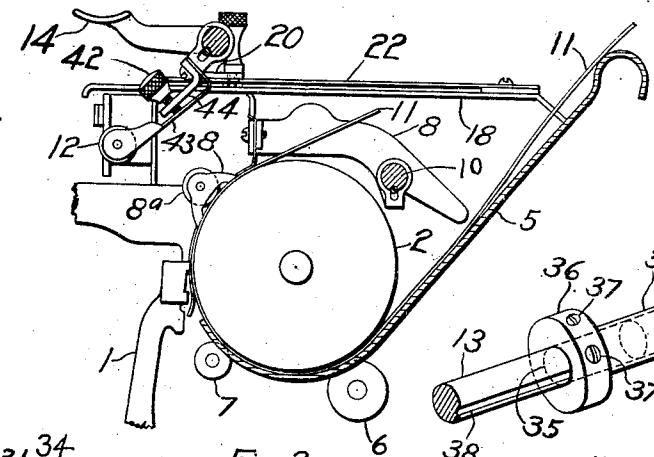


Fig. 2.

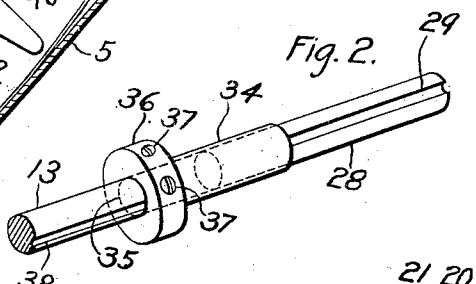


Fig. 3

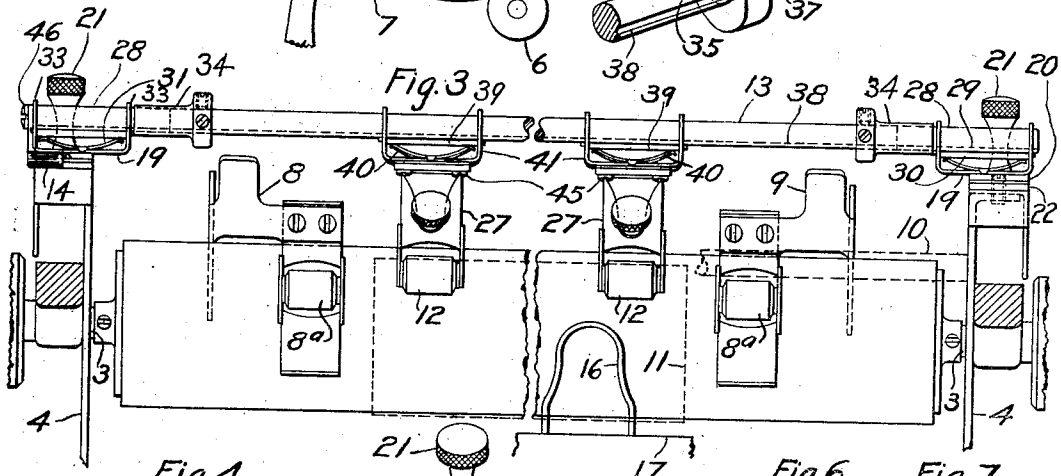


Fig. 4.

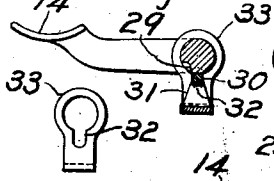


Fig. 5



Fig. 6.

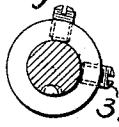


Fig. 7.

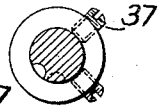
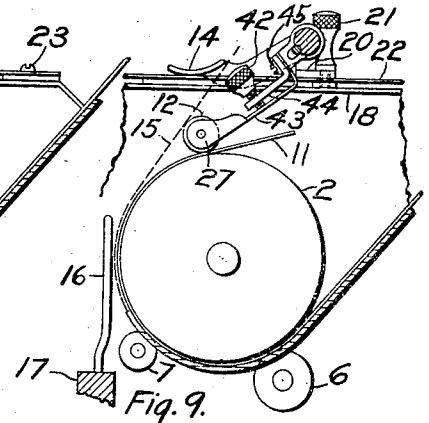


Fig. 8.

Fig. 9.



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UNITED STATES PATENT OFFICE.

HARRY S. McCORMACK, OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

No. 904,002. Specification of Letters Patent. Patented Nov. 17, 1908.

Application filed February 11, 1908. Serial No. 415,287.

To all whom it may concern:

Be it known that I, HARRY S. McCORMACK, a citizen of the United States, residing in New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the paper feeding devices of typewriting machines, and especially those of the front strike variety, in which it is desired to make carbon copies upon a long record sheet (to be subsequently bound into a book) of checks or other short statements or memoranda, which are written and removed from the machine one after another while the record sheet is retained in the machine.

One of the principal objects of the invention is to provide an attachment which can readily be applied to existing machines for enabling this variety of work to be performed with facility. The record sheets in different offices vary in width and stiffness, and it frequently happens that the usual front paper-guiding fingers are inefficient to retain the record sheets, when the usual pressure rolls under the platen are cast off to permit the withdrawal of the check, bill or other small sheet.

The object of my invention is to provide means readily applied to the machine and adjustable to suit the needs of all kinds of record sheets, and to hold the latter firmly against the platen while the checks or other small sheets are being withdrawn from the machine.

In carrying out my invention, I provide a plurality of pressure rolls to run upon the top of the platen to engage the record sheet well above the printing line, and with the requisite force, so that the record sheet cannot become accidentally misplaced during the manipulation of the sheets in front thereof. These pressure rolls are carried upon a rod mounted over the platen and bodily adjustable forwardly and backwardly, to cause the rolls to bear upon the record sheet at that point on the platen which will cause the sheet to take the proper direction as it passes out of the machine. It will be understood that, in the case of a heavy stiff record sheet, the rolls must be carried well to the rear, to direct the sheet backwardly as it emerges from the machine; since if the rolls were well to the front, the sheet would rise straight up from the machine and bother the operator in many ways. On the other hand, in the case of a limp record sheet, the rolls should not be carried so far back that there would be a tendency for the leading edge of the record sheet to reënter the machine at the back of the platen, and other trouble caused.

By adjusting the rod forwardly and backwardly which carries the top pressure rolls, the latter may be caused to bear upon the platen at the exact point to meet the requirements of any particular width or style of record sheet, and all difficulties may be avoided.

Preferably the adjustment of the rod, which carries the pressure rolls, is in a single horizontal plane, forwardly and rearwardly, and I provide means for regulating the inclination of the fingers which depend from the rod and carry the pressure rolls which run upon the top of the platen as aforesaid. By varying the inclination of these pendent parts, compensation is made for different positions to which the rod is adjusted. Each pressure roll moreover, has its individual spring for regulating its own pressure against the platen, to compensate for any inexactness in the adjustment of the inclination of the finger or device on which the roll is carried. A finger-piece is also connected to said rod to enable the operator to swing the rolls away from the platen, for convenience in introducing the record sheets into the machine and in releasing them for withdrawal. The checks are fed up in front of the platen independently of the aforesaid top pressure rolls, and emerge one by one from the machine in front of said rolls.

In the accompanying drawings, Figure 1 is a sectional side elevation of an Underwood front strike writing machine provided with my improvements; the pressure rolls being shown as released from the platen. Fig. 2 is a perspective view to illustrate the manner of connecting a roll-carrying rod with its journal in a manner to permit relative rotative adjustment of the two. Fig. 3 is a front elevation of the parts seen at Fig. 1. Fig. 4 shows the pressure roll release key. Fig. 5 shows details of devices, whereby the roll-carrying rod is securable at different adjustments backward and for-

ward. Figs. 6 and 7 illustrate the different relative positions of the rod and one of its journals seen at Fig. 2. Fig. 8 is a view similar to Fig. 1, but showing the key depressed to cause the pressure roll to bear upon the front side of the platen. Fig. 9 is a view similar to Fig. 8, but showing the pressure roll as bearing upon the top of the platen. This figure also illustrates the manner in which a check emerges from the machine in front of the pressure rolls.

The usual inked impressions are made by type bars 1 upon the front of a palten 2, which is journaled by means of an axle 3 in the ends 4 of a platen frame, which also comprises a rear paper shelf 5. Pressure rolls 6, 7 run upon the under side of the platen and are usually releasable. Paper-guiding fingers 8, 9 are usually carried upon a rod 10, which extends from one platen frame end to the other, but these fingers are not used in the operations for which my present improvements are especially intended. They are shown as moved over to the ends of an extra long platen, where they are out of the way of the checks and record sheets that are to be written. My improvements are illustrated in the form of an attachment which may be readily applied to existing machines, which are usually provided with said fingers 8, 9. Obviously in performing other kinds of work than that herein particularly referred to, said fingers may be used in connection with my improvements.

A long record sheet 11 is introduced into the machine, and fed line-by-line by the rolls 6, 7. The usual overlying carbon sheet is not shown. Upon the upper portion of the platen run two or more pressure rolls 12, which by means of instrumentalities hereinafter described, are caused to bear with considerable force upon the record sheet, so that it is not likely to become disarranged when the rolls 6, 7 are cast off. The rolls 12 are carried upon a rod 13, which may be swung up by means of a key 14 to carry the rolls away from the platen, as at Fig. 1, during the introduction of the record and carbon sheets. Then the key 14 is depressed to swing the rolls down upon the record sheet.

The checks 15 are introduced either singly or in a connected series, and detached one by one as they are written. They are held against the platen by means of the usual curved loop of wire 16, which is mounted upon a fixed portion 17 of the machine. The checks emerge from the machine in front of the rolls 12, as seen at Fig. 9. It will be understood that as soon as one check is written, the rolls 6, 7 are cast off and the sheet 15 drawn up, while the record sheet 11 remains stationary. Then the succeeding check is written line by line, and its record made on the sheet 11, and the operation is repeated indefinitely, the records following one another closely upon the record sheet to economize room thereon.

The rod 13 carrying said rolls 12 is bodily adjustable forwardly and rearwardly along the tops 18 of the platen frame ends. Yokes or supports 19 in which said rod is journaled, are fixed upon bases 20, the latter being releasably secured by screws 21 upon a pair of plates 22, the latter attachable by screws 23 to said tops 18 of the platen frame, which tops I usually provide with tapped holes, to which said screws are adapted. The screws 21 are threaded into nuts 24, the latter having squared shanks 25 to fit in slots 26 extending longitudinally in the plates 22. By releasing the screws 21, the supports 19 may be carried forwardly or backwardly along the plate 22 together with the rod 13, as from the Fig. 8 to the Fig. 9 position, and then the screws may be tightened to secure the rod in its new position.

In order to tip the pendent fingers or devices carrying the rolls 12 (said devices designated generally as 27) to compensate for the different positions to which the rod 13 is adjusted forwardly and backwardly, so that the rolls 12 may always run firmly upon the platen, I provide for relative rotative adjustment of the roll-carrying rod 13, and its journals 28 which turn in the yokes or brackets 19; said journals being constructed to have a single rotative position when the rolls 12 are running upon the platen, regardless of the forward and backward adjustment referred to. It will be seen that these journals have longitudinal grooves 29, in which rolls 30 are pressed by bow-springs 31; said rolls being guided in suitable vertical slots 32 formed in the upstanding ears 33 of the yokes 19, Fig. 4. Upon the inner end of each journal is driven a tubular piece or sleeve 34, the inner end of which forms a socket 35 to receive the end of the rod 13, and said sleeve 34 is formed at its inner end with a head 36 to receive set screws 37 to bear against the rod 13 and secure it at different rotative adjustments. Said rod is shown provided with a longitudinal groove 38 to receive rolls 39 pressed by springs 40, the latter carried upon yokes 41 resembling the yokes 19, and slidable along the rod 13, as well as independently rotatable thereon. The springs 31 and 40 are powerful, so that the rolls 12 are pressed with considerable force upon the platen or the paper thereon. Thus, it will be seen that after adjusting the rod 13 bodily forward or backward, as for instance from the Fig. 8 to the Fig. 9 position, the screws 37 may be loosened, and the rod 13 rotatably adjusted to change the inclination of the fingers 27, as shown, so that the rolls 12 may run firmly upon the platen; the screws 37 being tightened to secure the

rod 13 in its new position. The relative adjustment of the rod and journal is illustrated at Figs. 6 and 7, Fig. 6 corresponding to Fig. 8, and Fig. 7 corresponding to Fig. 9.

In order to compensate for any inaccuracies of adjustment and for other purposes, screws 42 may be turned to vary the pressure of springs 43 upon which the rolls 12 are directly mounted; said screws threaded through ears 44 pendent from the yokes 41 and secured thereto by screws 45.

The finger-piece 14 may be depressed to throw the rolls against the platen, and elevated to release the rolls, regardless of any adjustment of the rod 13. The finger-piece moves forwardly and backwardly with the rod when the latter is adjusted, and it is fixed by a screw 46 to the end of a journal 28, so as to rotate the latter and the rod. When the finger-piece is lifted to cast off the pressure rolls, Fig. 1, the roll 30 is forced down out of the groove 29, Fig. 4, and bears upon the cylindrical periphery of the journal, and hence the springs 31 are incapable of turning the journals back to normal positions. On the contrary, they cause such friction of the journals in their bearings as to detain the journals mechanically in roll-releasing position, as at Fig. 1, so that the key 14 may be relinquished, and both hands of the operator may be employed in manipulating the sheet 11.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a rod mounted on the platen frame over the platen and bodily adjustable forwardly and backwardly, means for securing the rod where adjusted, and pressure devices mounted upon said rod to bear against the platen.

2. In a typewriting machine, the combination with a revoluble platen and a platen frame having ends, of a rod extending along the platen and over the same, means supporting the ends of said rod upon the ends of the platen frame in a manner to permit bodily adjustment of the rod forwardly and backwardly in a single plane, pressure devices pendent from said rod to bear upon the platen, means to permit rotative adjustment of said rod to vary the inclination of the pressure devices to compensate for the forward and backward adjustment of the rod, and means to secure the rod at different points in its rotation.

3. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of supports mounted upon said frame and adjustable forwardly and rearwardly, a rod extending along and over the platen and carried upon said supports, a pressure device mounted upon said rod, a spring to cause the pressure device to bear against the platen, and a finger-piece connected to the rod to turn it and lift the pressure device away from the platen.

4. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of supports mounted upon said frame and adjustable forwardly and rearwardly, a rod extending along and over the platen and carried upon said supports, a pressure device mounted upon said rod, a spring to cause the pressure device to bear against the platen, and a finger-piece connected to the rod to turn it and release the pressure device away from the platen; means being provided for the mechanical maintenance of the rod and pressure device in released positions.

5. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of supports mounted upon said frame and adjustable in a single plane forwardly and rearwardly, a rod extending along and over the platen and carried upon said supports, a pressure device mounted upon said rod, a spring to cause the pressure device to bear against the platen, and a finger-piece connected to the rod to turn it and lift the pressure device away from the platen; means being provided to permit adjustment of the pressure device to different inclinations to compensate for the backward and forward adjustment of the rod, so that the pressure device may always bear upon the cylindrical surface of the platen.

6. In a typewriting machine, the combination with a revoluble platen and a platen frame having ends, of a rod extending along the platen and over the same, means supporting the ends of said rod upon the ends of the platen frame in a manner to permit bodily adjustment of the rod forwardly and backwardly in a single plane, pressure devices pendent from said rod to bear upon the platen, means to permit rotative adjustment of said rod to vary the inclination of the pressure devices to compensate for the forward and backward adjustment of the rod, and means to secure the rod at different points in its rotation; each of said pressure devices having independent means for regulating its pressure upon the platen.

7. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of supports mounted upon said frame and adjustable in a single plane forwardly and rearwardly, a rod extending along and over the platen and carried upon said supports, a pressure device mounted upon said rod, a spring to cause the pressure device to bear against the platen, and a finger-piece connected to the rod to turn it and lift the pressure device away from the

platen; means being provided to permit adjustment of the pressure device to different inclinations to compensate for the backward and forward adjustment of the rod, so that the pressure device may always bear upon the cylindrical surface of the platen; said pressure device having independent means for regulating its pressure upon the platen.

8. A paper-guiding attachment for typewriting machines, comprising a pair of forwardly and rearwardly extending plates to attach to the ends of the platen frame, each plate having a longitudinal slot, a pair of supports, screws to fasten said supports at different positions along said plates, said screws threaded into nuts fitted in said slots, a rod extending along the platen, journals connected to the ends of the rod and mounted upon said supports, yielding means to prevent the journals from turning in said supports, the rod being revolubly adjustable relative to said journals and provided with means to fasten it at different adjustments, and pressure devices adjustable along said rod and bearing upon the platen; said rod being rotatable with said journals to move the pressure devices away from the platen.

9. A paper-guiding attachment for typewriting machines, comprising a pair of forwardly and rearwardly extending plates to attach to the ends of the platen frame, each plate having a longitudinal slot, a pair of supports, screws to fasten said supports at different positions along said plates, said screws hreaded into nuts fitted in said slots, a rod extending along the platen, journals connected to the ends of the rod and mounted upon said suports, yielding means to prevent the journals from turning in said supports, the rod being revolubly adjustable relative to said journals and provided with means to fasten it at different adjustments, and pressure devices adjustable along said rod and bearing upon the platen; said rod being rotatable with said journals to move the pressure devices away from the platen, a finger-piece connected to one of said journals to swing the pressure devices away from and back to the platen; means being provided for mechanically detaining the rod and journals in a position to hold the pressure devices away from the platen.

10. A paper-guiding attachment for typewriting machines, comprising a pair of forwardly and rearwardly extending plates to attach to the ends of the platen frame, each plate having a longitudinal slot, a pair of supports, screws to fasten said supports at different positions along said plates, said screws threaded into nuts fitted in said slots, a rod extending along the platen, journals connected to the ends of the rod and mounted upon said supports, yielding means to prevent the journals from turning in said supports, the rod being revolubly adjustable relative to said journals and provided with means to fasten it at different adjustments, and pressure devices adjustable along said rod and bearing upon the platen; said rod being rotatable with said journals to move the pressure devices away from the platen; sockets being provided upon said journals in which the ends of said rod fit, and means being provided to secure the rod in different adjustments in the sockets; the rod being concentric with the journals.

11. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of supports upon the ends of the platen frame, a rod extending along the platen, journals connected to the ends of the rod and mounted upon said supports, yielding means to prevent the journals from turning in said supports, the rod being revolubly adjustable relative to said journals and provided with means to fasten it at different adjustments, and pressure devices adjustable along said rod and bearing upon the platen; said rod being rotatable with said journals to move the pressure devices away from the platen.

12. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of supports upon the ends of the platen frame, a rod extending along the platen, journals connected to the ends of the rod and mounted upon said supports, yielding means to prevent the journals from turning in said supports, the rod being revolubly adjustable relative to said journals and provided with means to fasten it at different adjustments, and pressure devices adjustable along said rod and bearing upon the platen; said rod being rotatable with said journals to move the pressure devices away from the platen, and a finger-piece being connected to the rod to turn it upon its journal to swing the pressure device relatively to the platen.

13. The combination with a revoluble platen and a platen frame, of a rod extending along the platen, journals concentric with said rod and connected to the ends thereof and mounted upon the ends of the platen frame, yielding means to prevent the journals from turning, means connecting the rod to the journals to permit relative rotation thereof, and pressure devices adjustable along said rod and bearing upon the platen.

14. The combination with a revoluble platen and a platen frame, of a rod extending along the platen, journals concentric with said rod and connected to the ends thereof and mounted upon the ends of the platen frame, yielding means to prevent the journals from turning, means connecting the rod to the journals to permit relative rotation thereof, and pressure devices adjustable along said rod and bearing upon the platen;

said journals being longitudinally grooved, and spring pressed guided rolls engaging the grooves.

15. The combination with a revoluble platen and a platen frame, of a rod extending along the platen, journals concentric with said rod and connected to the ends thereof and mounted upon the ends of the platen frame, yielding means to prevent the journals from turning, means connecting the rod to the journals to permit relative rotation thereof, and pressure devices adjustable along said rod and bearing upon the platen; said journals being longitudinally grooved, and spring pressed guided rolls engaging the grooves, said pressure devices being splined to said rod.

16. The combination with a revoluble platen and a platen frame, of a rod extending along the platen, journals concentric with said rod and connected to the ends thereof and mounted upon the ends of the platen frame, yielding means to prevent the journals from turning, means connecting the rod to the journals to permit relative rotation thereof, and pressure devices adjustable along said rod and bearing upon the platen; said journals being longitudinally grooved, and spring pressed guided rolls engaging the grooves, said pressure devices being splined to said rod, and having individual means for regulating their pressure against the platen.

17. The combination with a revoluble platen and a platen frame, of a rod extending along the platen, journals concentric with said rod and connected to the ends thereof and mounted upon the ends of the platen frame, yielding means to prevent the journals from turning, means connecting the rod to the journals to permit relative rotation thereof, and pressure devices adjustable along said rod and bearing upon the platen; said rod bodily adjustable backwardly and forwardly.

18. The combination with a revoluble platen and a platen frame, of a rod extending along the platen, journals concentric with said rod and connected to the ends thereof and mounted upon the ends of the platen frame, yielding means to prevent the journals from turning, means connecting the rod to the journals to permit relative rotation thereof, and pressure devices adjustable along said rod and bearing upon the platen; said journals being longitudinally grooved, and spring pressed guided rolls engaging the grooves; said journals being mounted upon supports which are adjustable backwardly and forwardly upon the ends of the platen frame.

19. The combination with a revoluble platen and a platen frame, of a rod extending along the platen, journals concentric with said rod and connected to the ends thereof and mounted upon supports which are adjustable backwardly and forwardly upon the ends of the platen frame, yielding means to prevent the journals from turning, means connecting the rod to the journals to permit relative rotation thereof, and pressure devices adjustable along said rod and bearing upon the platen; said journals being longitudinally grooved, and spring pressed guided rolls engaging the grooves, said pressure devices being splined to said rod.

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