H. S. McCORMACK.

TYPE WRITING MACHINE.

APPLICATION FILED MAY 9, 1908.

929,158.

Patented July 27, 1909.

3 SHEETS—SHEET 1.

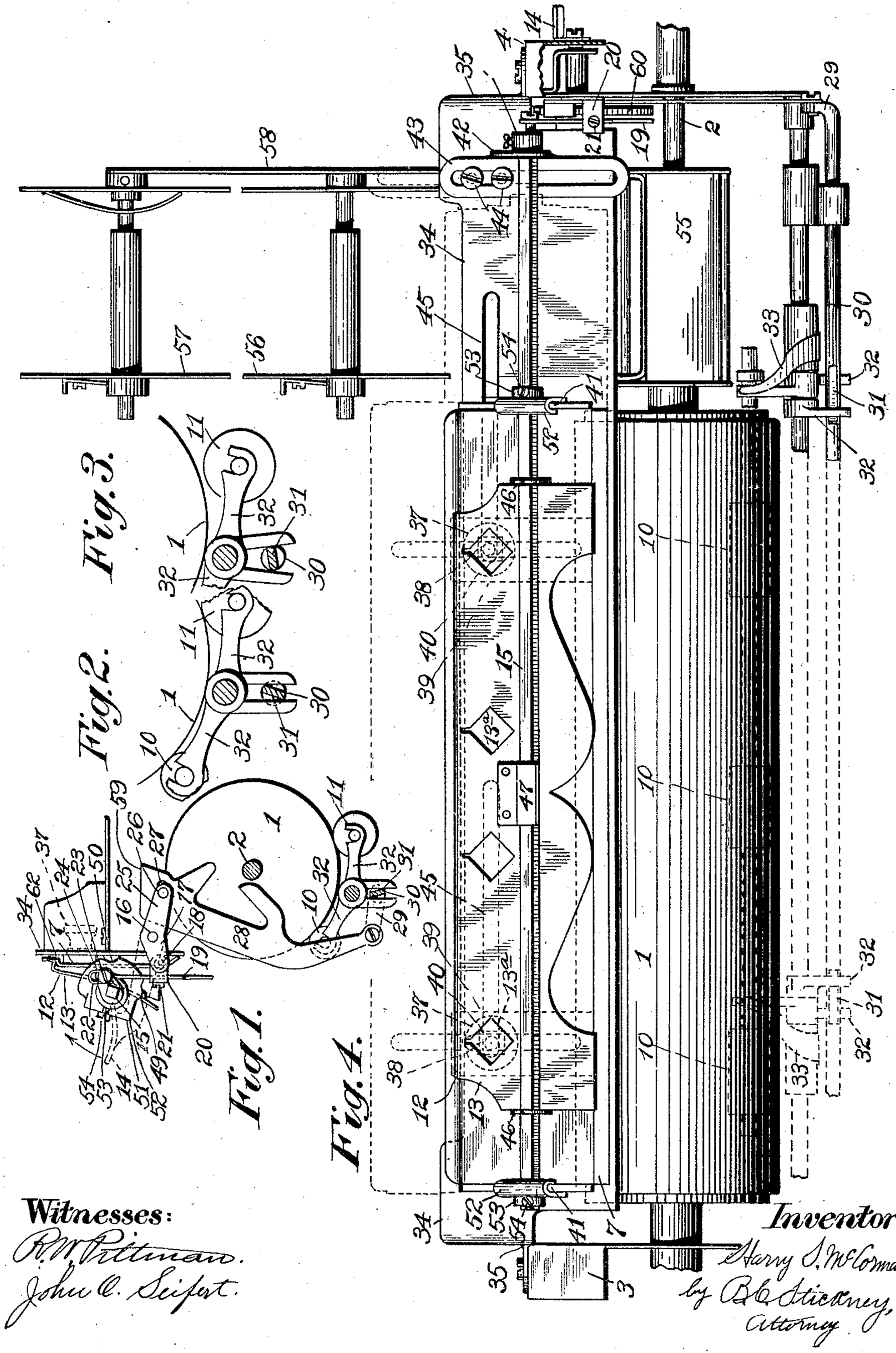

Fig. 1.

Fig. 2.

Fig. 4.

Witnesses:

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3 SHEETS—SHEET 2.

Fig. 11.

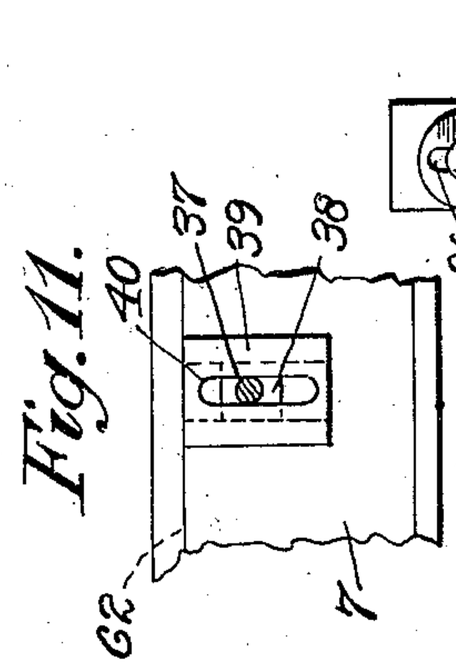


Fig. 10.

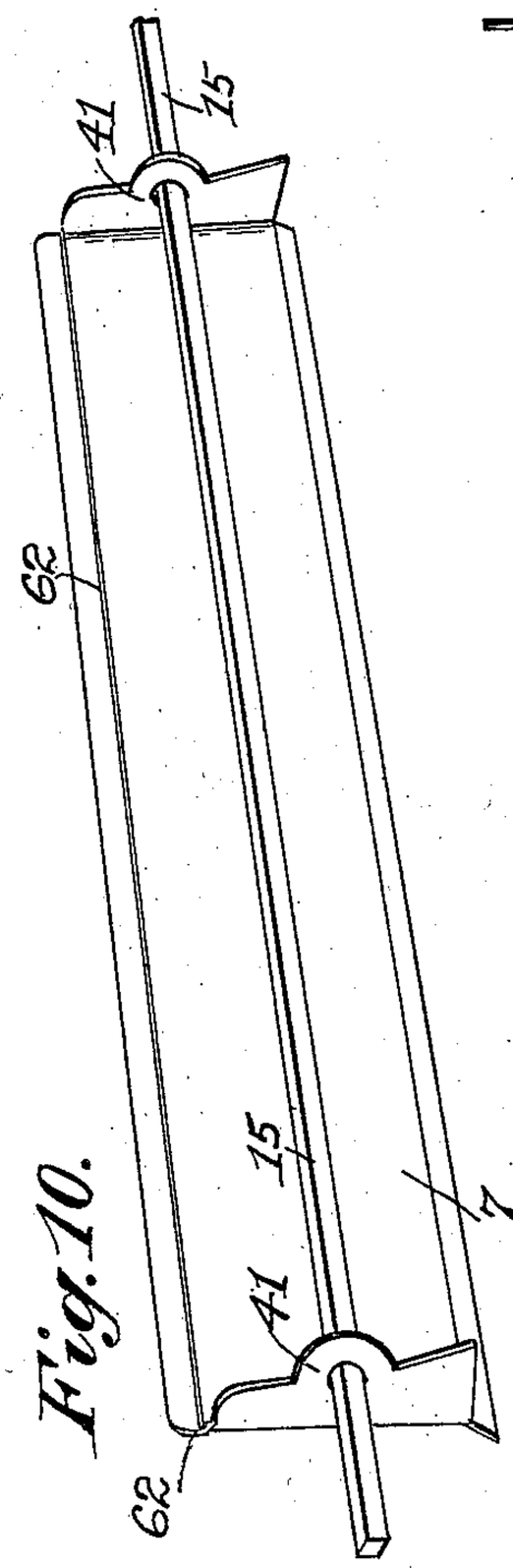


Fig. 5.

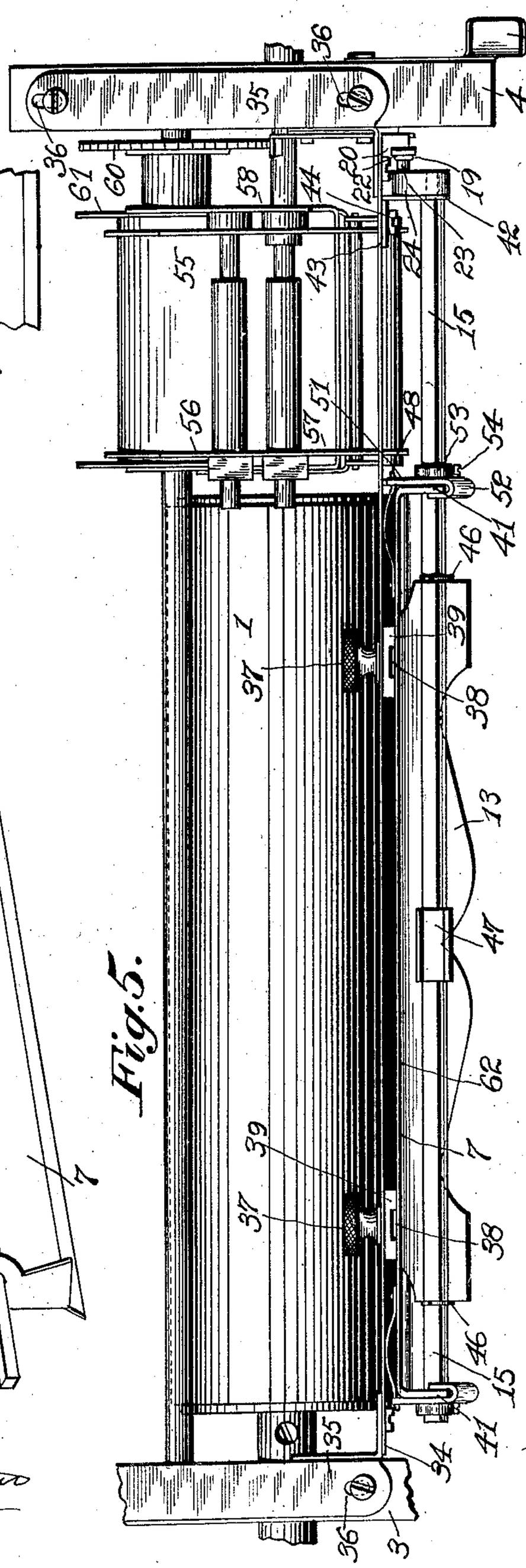
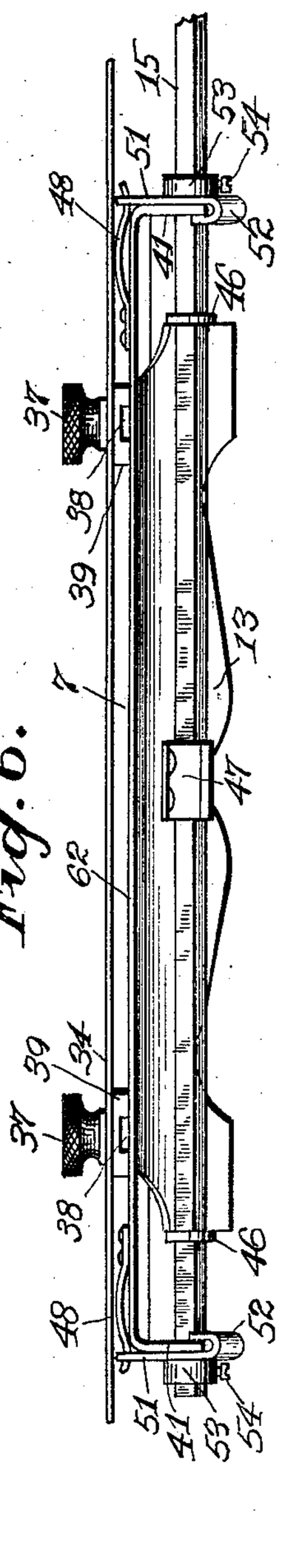


Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 9.

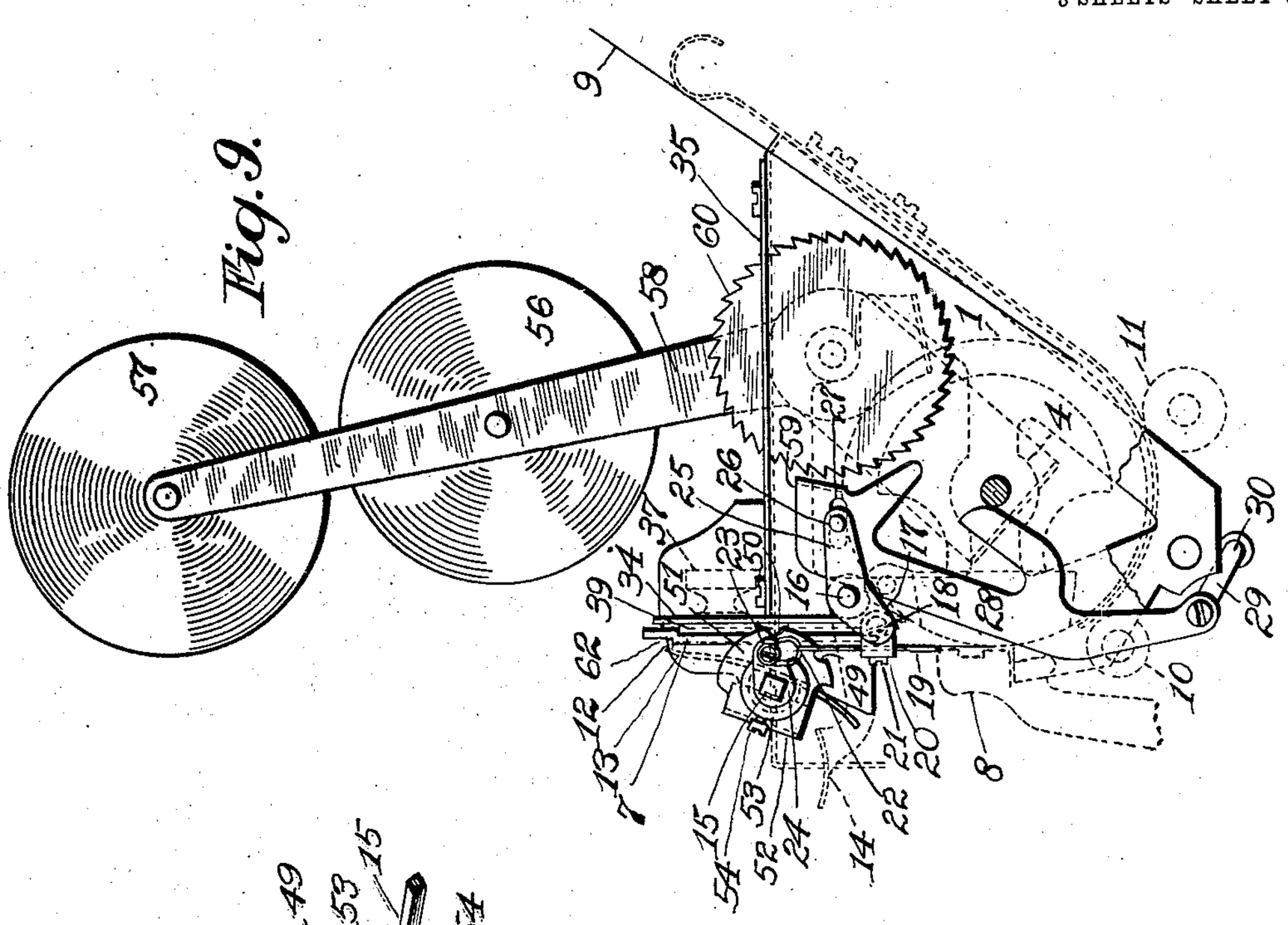


Fig. 7.

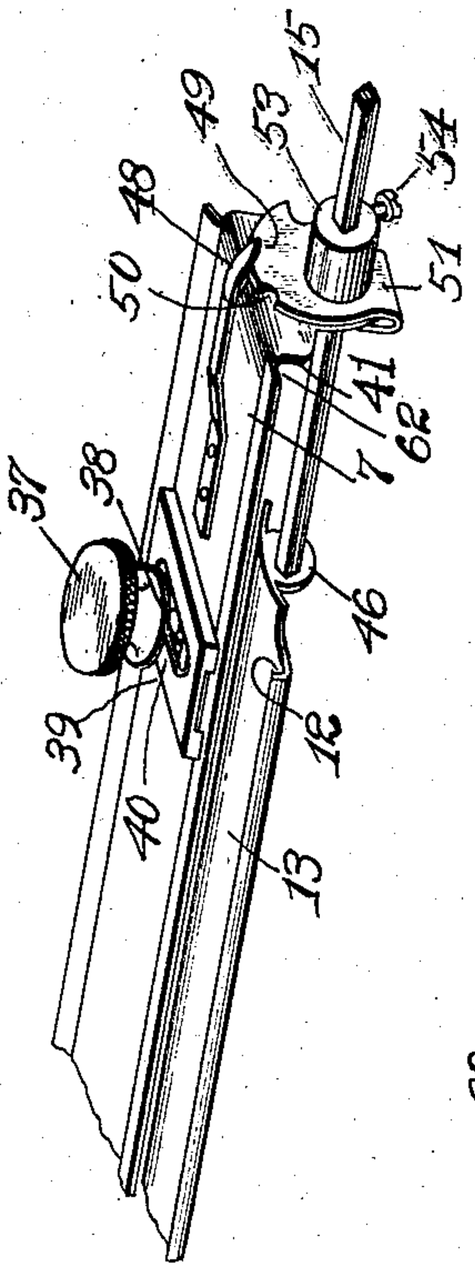
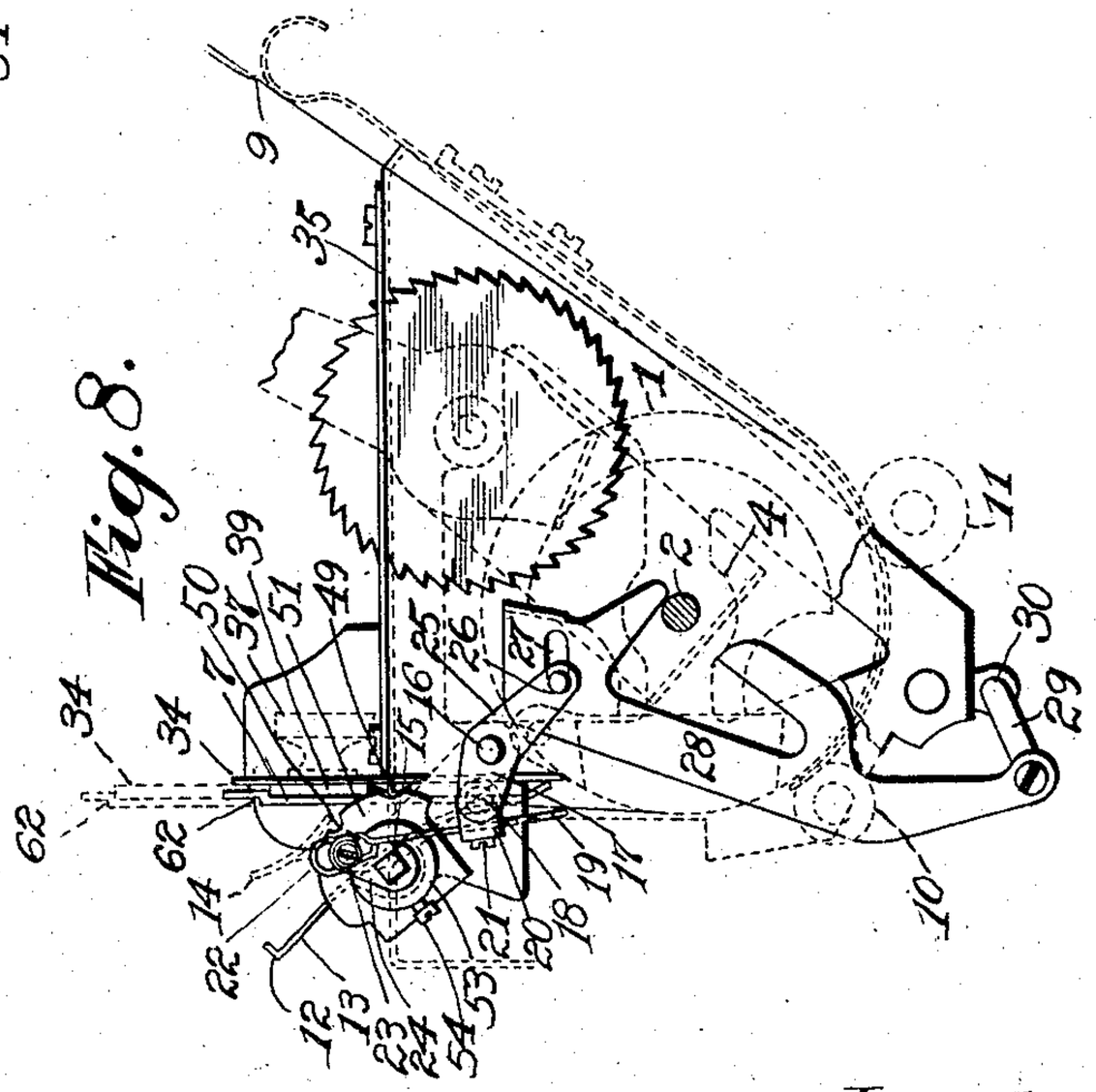


Fig. 8.



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UNITED STATES PATENT OFFICE.

HARRY S. McCORMACK, OF NEW ROCHELLE, NEW YORK, ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

No. 929,158. Specification of Letters Patent. Patented July 27, 1909.

Application filed May 9, 1908. Serial No. 431,745.

To all whom it may concern:

Be it known that I, HARRY S. McCORMACK, a citizen of the United States, residing in New Rochelle, in the county of Westchester 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 paper controlling devices of typewriting machines and particularly to those of the front strike variety.

In my co-pending application No. 402,583 is disclosed a provision for readily and accurately adjusting the sheet both endwise and sidewise with reference to the printing point before the writing begins; a tablet or plate standing on edge above the front portion of the platen and above the printing point, upon which the sheet can readily be adjusted while not clamped by the usual paper rolls which run upon the platen. Said application discloses a stop at the top of the tablet to which the top edge of the sheet may be set, and provision is made for moving the stop out of the way to permit the sheet to advance line by line. A directrix is shown for guiding the leading edge of the sheet up to the stop, and the directrix and stop are connected to the same key that releases the pressure rolls, so that the stop and directrix are thrown into operative position when the rolls are released and vice versa. The tablet and directrix are also adjustable along the platen to accommodate different widths of sheets.

One of the principal objects of the present invention is to provide simplified and improved means for handling and controlling the sheet; the construction and operation embodying the same general principles as in said application, but the mechanism being simplified and otherwise improved.

In the present construction, a sheet guiding register plate or tablet is mounted for adjustment up and down upon a main plate or bar which extends along the platen frame and is fixed thereto, and a directrix is adjustable up and down with said sheet-guiding plate or tablet; both the directrix and the tablet being also adjustable along the platen. The directrix is mounted directly upon a rock shaft which is connected to the roll-releasing key, the directrix being splined to the rock shaft and adjustable therealong; the shaft being adjustable up and down with the registering tablet, and having an extensible connection to the key.

In operating the device shown in said application, there is sometimes liability (unless care is taken) of the inserted sheet being disarranged after it is set to the stop and before the pressure rolls clamp the sheets against the platen, since the stop starts to move away from the sheet while the rolls are moving toward the platen.

One object of the present invention is to overcome this difficulty, and accordingly, I provide a lost-motion construction between the key and the stop, to permit the latter to remain in effective position until the pressure rolls clamp the paper; the remainder of the return movement of the key being utilized to throw the stop out of the path of the paper.

In the accompanying drawings, Figure 1 is a sectional side elevation of a platen, pressure rolls and stop mechanism, the key being shown as having made about half of its return movement. Fig. 2 is a diagram to illustrate the position of the roll-releasing rock shaft when the finger key is in normal position. Fig. 3 is a view similar to Fig. 2, but showing the pressure rolls locked away from the platen. Fig. 4 is a front elevation of the platen frame of an Underwood front strike writing machine, embodying my present improvements. Fig. 5 is a plan of the same. Fig. 6 is a plan to illustrate the directrix in effective position, as at Figs. 1 and 9. Fig. 7 is a perspective of one end of the register plate or tablet and the directrix associated therewith, showing particularly how the directrix is yieldingly detained in normal position. Fig. 8 is an end elevation of the platen frame and other parts, showing the same in normal position. Fig. 9 is an end elevation showing the rolls released from the platen, and the sheet-stop in effective position. Fig. 10 is a perspective view of the sheet registering plate or tablet. Fig. 11 is a rear view of one of the keepers or guides within which are confined the nuts that secure the tablet where adjusted.

The cylindrical platen 1 is mounted by means of an axle 2 in the ends 3, 4 of a platen frame, forming part of a carriage.

Mounted on edge in front of the platen is a tablet 7, which is nearly vertical, inclining upwardly and a little forwardly, and standing above the front side of the platen and over the point where the types 8 strike the paper.

A bill or sheet of paper 9 is inserted behind the platen and around the under side of the same, while the usual pressure rolls 10, 11 are released, Fig. 9. The leading edge of the sheet rises in front of the tablet 7, and the operator may, by touching the leading portion of the sheet with his finger, slide it upon the tablet 7, up against a stop ledge 12 which rests upon or catches over the top edge of the tablet or plate 7. Said stop ledge 12 is formed upon the upper edge of a directrix 13, which inclines rearwardly from its lower to its upper edge, and serves to guide the leading edge of the sheet 9, up against the stop ledge 12. The directrix is formed with slight holes 13ª, and is substantially shorter than the tablet 7, to give the operator access to the side edges of the sheet 9 to adjust the same.

Before inserting a sheet, the operator depresses a key 14 from the Fig. 8 to the Fig. 9 position. Said key 14 is mounted upon a key shaft 16, which has an arm 17, to which is pivoted at 18 an extensible link comprising a stem portion 19, and a block 20 in which the stem 19 is adjustably secured by a screw 21. The upper end of the link is formed with a vertical loop 22 to engage a wrist 23 carried upon an arm 24 upon said rock shaft 15. When the key 14 is raised, the rock shaft is turned to the Fig. 8 position, and the directrix 13 swung forwardly to clear the sheet 9. To said key shaft 16 is also secured an arm 25 having a pin 26 to engage a slot 27 formed in the upper end of a link 28, to lift the latter, thereby rocking an arm 29 and releasing the pressure rolls 10, 11; said arm 29 being formed upon a rock shaft 30 having flats 31 to engage roll-releasing arms 32; so that the downward movement of the key both releases the rolls to permit the free insertion and manipulation of the sheet, and moves said directrix 13 and stop 12 to operative position.

As soon as the sheet 9 is adjusted, Fig. 9, the key 14 is thrown up, thereby causing the pressure rolls 10, 11 to bite the sheet and also throwing the directrix 13 forward to a position of disuse, so as to permit the sheet to pass up beyond the same and back out of the machine. As soon as the sheet is completed, the key 14 is again depressed to permit the removal of the sheet and the insertion of another sheet, and the operation is repeated. A lost-motion construction is however provided between the key 14 and the gage 12, to permit the key to restore the pressure rolls 10, 11 against the platen, Fig. 1, before the gage is withdrawn from the leading edge of the sheet or when the key is about midway between its upper and lowermost position. During the first part of the upward movement of the key, that is, from Fig. 9 to Fig. 1, the directrix 13 remains stationary, the movement of the key being accommodated by the loop 22 in the link 19; but continued movement of the key after the rolls have reached the platen, causes said link 19 to turn the rock shaft 15 and throw the directrix 13 forwardly to a position of disuse, Fig. 8. Thus it will be seen that the sheet may be held against the stop 12 until it is gripped by the rollers, so that there is no liability of accidental derangement of the sheet after it is adjusted to said stop 12, as has been the case heretofore when the stop has been moved away from the sheet before the latter is clamped by the pressure rolls.

The rock shaft 30 is formed with flats 31 at intervals, and differ from the flats heretofore in use upon the well known Underwood machine, in that they are cut away sufficiently to permit additional rocking of the shaft from the position at Fig. 1, to permit extra upward movement of the key, necessary to throw the directrix 13 forwardly. In other words, a lost-motion construction is provided between the key 14 and rolls 10, 11, to permit the stop-releasing movement of the key while the rolls remain stationary against the platen.

Yielding means to detain the rock shaft 15 in either its Fig. 1 or its Fig. 8 position will presently be described. It will be understood that when the arms 32 are opened as at Fig. 3, the rolls 10, 11 are locked mechanically away from the platen, since the arms at this time are caused by their springs 33 to bear against the cylindrical periphery of the rock shaft 30.

In order to enable the machine to be used for different kinds of bill heads and to enable the latter to be brought always to the exact point at which the writing is to begin, I provide for adjusting the tablet 7 and the stop 12 up and down, so that the initial position of the sheet may be varied as required. The plate 7 is for this purpose carried upon a bar or main plate 34, the end of the latter secured upon the platen frame ends by means of brackets 35, the latter having slots 36 to receive securing screws 37, to permit forward and backward adjustment of the tablet 7 relatively to the platen. Thumb screws 37 pass through the bar 34 to engage nuts 38, the latter confined by keepers or guides secured vertically to the back of the plate 7 and having vertical slots 40 to receive the shanks of the screw 37, Figs. 7 and 11. Each of the keepers is in the form of a channel bar, the nut being confined in the channel and fitting between the sides thereof, so that it cannot turn.

The rock shaft 15 is mounted partly in

ears 41 on the ends of the tablet 7, and at its extreme right hand end in an ear 42 upon a bracket 43 held by screws 44 against the front face of the bar 34. The screws 44 may be loosened when the tablet 7 is to be adjusted up or down, to permit similar adjustment of the bracket 43; and the screws 44 may be detained at the same time as the thumb screws 37, so that the rock shaft 15 may remain level at all adjustments thereof.

It will be understood that the screw may be loosened, and the link 19 drawn up or thrown down through the block 20 to accommodate the vertical adjustment just described, of the rock shaft 15.

The ears 41 upon the tablet 7, will serve as gages for one or both of the side edges of the sheet 9; and the tablet is made adjustable from side to side or longitudinally of the platen, the bar 34 being for this purpose provided with longitudinal slots 45 through which pass the shanks of the thumb screws 37, said screws serving to clamp the tappet 7 to the bar 34 after the tablet has been adjusted either up or down or along the platen.

The directrix 13 may be slid along the shaft 15 as required, being connected to said shaft to enable the latter always to rock the directrix. For this purpose the shaft may be formed of rectangular cross section as illustrated, and the directrix may be provided with ears 46 having square holes to fit upon said shaft. Further support for the directrix 13 may be provided by a small plate 47 secured upon the directrix about midway between its ends and fitted around the shaft 15 and preferably pressing thereagainst, sufficiently to hold the directrix against accidental displacement along the shaft. The rock shaft 15 and directrix 13 are held yieldingly in either the Fig. 8 or Fig. 9 position, by means of spring fingers 48 secured upon the back of the tablet 7 to engage notches 49, 50 formed in disk 51 folded at 52 over the ears 41, so as to be carried along the bar 15 with the tablet 7. Collars 53 having set screws 54 may be provided upon said shaft outside of the disks 51 to prevent endwise displacement of the tablet 7. The springs 48 engage the notches 49, Fig. 8, when the parts are in normal positions, to hold the plate 13 against rattling; and said springs engage the notches 50 when the key 14 is fully depressed, as at Fig. 9, to detain the directrix 13 yieldingly in working position, during the manipulation of the sheet 9, and also until the rolls 10, 11 have been restored to normal positions, Fig. 1.

The tablet 7 and directrix 13 are adjustable to a position in front of a tally-strip mechanism which is arranged at the right hand end of the platen 1, and constructed substantially as disclosed in my application No. 408,235 or No. 402,583, and comprising a segmental platen 55 and tally strip spools 56, 57 mounted upon a bracket 58 rising from the platen frame; the link 28 having a tooth 59 to engage a ratchet wheel 60 secured to a tally-strip winding spool 61, so that the strip is advanced line by line, each time that the key 14 is depressed to permit the withdrawal of the written bill and the insertion of a new one.

It will be observed that the stop ledge or flange 2 is arrested, Figs. 1 and 9, by engagement with a ledge 62 upon the rear of the registering plate 7, said ledge 12 extending back beyond the vertical face of the plate 7, to form an abrupt stop, so that there will be no liability of the edge of the sheet catching between 12 and 62; and considerable space is left between said plate 7 and the upper part of the directrix 13, to afford a free passage for the paper up to the stop.

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 main plate or support extending on edge along the platen and mounted upon the platen frame, a sheet-guiding plate mounted upon the front of said main plate for adjustment up and down longitudinally of the platen, means for securing the sheet-guiding plate where adjusted, and a directrix adjustable up and down with the sheet-guiding plate and also adjustable along the platen and having a stop to position the leading edge of the sheet.

2. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a main plate or support extending on edge along the platen and mounted upon the platen frame and having horizontal slots, a sheet-guiding register-plate on edge in front of said main plate and having on its rear face vertical guides, nuts adjustable in said guides, and thumb screws extending through said slots to engage said nuts to permit adjustment of the sheet-guiding plate endwise and also up and down.

3. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a main plate or support extending on edge along the platen and mounted upon the platen frame and having horizontal slots, a sheet-guiding register-plate on edge in front of said main plate and having on its rear face vertical guides, nuts adjustable in said guides, thumb screws extending through said slots to engage said nuts to permit adjustment of the sheet-guiding plate endwise and also up and down.

a directrix in front of said sheet-guiding plate for the leading edge of the sheet, said directrix adjustable up and down with said sheet-guiding plate and also adjustable along the platen, and having a stop-flange along its upper edge, a key having means to release pressure rolls that run upon the platen, and means connected to the key for swinging said directrix to bring its stop-flange into coöperation with the sheet-guiding plate to position the leading edge of the sheet.

4. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a main plate or support extending on edge along the platen and mounted upon the platen frame, a sheet-guiding plate mounted upon the front of said main plate for adjustment up and down and longitudinally of the platen, means for securing the sheet-guiding plate where adjusted, a directrix in front of said sheet-guiding plate for the leading edge of the sheet, said directrix adjustable up and down with said sheet-guiding plate and also adjustable along the platen, and having a stop-flange along its upper edge, a key having means to release pressure rolls that run upon the platen, and means connected to the key for swinging said directrix to bring its stop-flange into coöperation with the sheet-guiding plate to position the leading edge of the sheet.

5. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a sheet-guiding plate mounted on edge upon the platen frame and extending along the front of the platen and rising therefrom, a directrix in front of said plate and having a stop-flange along its upper edge, a rock-shaft upon which said directrix is mounted, said rock-shaft turning in ears provided upon said plate, a key connected to said rock-shaft to swing the directrix toward the plate, and pressure rolls running upon the platen and released by said key.

6. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a sheet-guiding plate mounted on edge upon the platen frame and extending along the front of the platen and rising therefrom, a directrix in front of said plate and having a stop-flange along its upper edge, a rock-shaft upon which said directrix is splined for adjustment along the plate, and a key connected to said rock-shaft to swing the directrix toward the plate.

7. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a plate mounted on edge upon the platen frame and extending along the front of the platen and rising therefrom, said plate adjustable up and down, a directrix in front of said plate and having a stop-flange along its upper edge, a rock-shaft upon which said directrix is mounted, said rock-shaft turning in ears provided upon said plate, and a key connected to said rock shaft to rock said directrix toward said plate.

8. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a plate mounted on edge upon the platen frame and extending along the front of the platen and rising therefrom, said plate adjustable up and down, a directrix in front of said plate and having a stop-flange along its upper edge, a rock-shaft upon which said directrix is mounted, said rock-shaft journaled upon ears provided upon said plate, and a key connected to said rock-shaft to rock said directrix toward said plate; said directrix adjustable along said plate.

9. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a plate mounted on edge upon the platen frame and extending along the front of the platen and rising therefrom, said plate adjustable up and down, a directrix in front of said plate and having a stop-flange along its upper edge, a rock-shaft upon which said directrix is mounted, said rock-shaft journaled upon ears provided upon said plate, and a key connected to said rock-shaft to rock said directrix toward said plate; said directrix and plate both adjustable along the platen; and pressure rolls running upon the platen and released by said key.

10. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a plate mounted on edge upon the platen frame and extending along the front of the platen and rising therefrom, a rock shaft extending along said plate and adjustable up and down therewith, a directrix mounted upon said rock shaft, and a key connected to said rock shaft.

11. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a sheet-guiding plate on edge and extending along the front of the platen and rising therefrom, a support upon said platen frame to carry said plate, a rock shaft extending along said plate, said plate and rock shaft being adjustable up and down, and said plate being also adjustable longitudinally of the platen, a directrix mounted upon said rock shaft, and a key connected to said rock shaft to swing the directrix to the plate; a gage being provided for the leading edge of the sheet.

12. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a sheet-guiding plate on edge and extending along the front of the

platen and rising therefrom, a support upon said platen frame to carry said plate, a rock shaft extending along said plate and extending through ears provided upon the plate, said support having horizontal slots, and said plate having vertical slots, said slots engageable by securing devices to admit longitudinal and vertical adjustment of the plate and rock shaft, a directrix mounted upon said rock shaft and having a gage or stop for the leading edge of the sheet, and a key connected to said rock shaft to swing the directrix to the plate.

13. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a sheet-guiding plate on edge and extending along the front of the platen and rising therefrom, a support upon said platen frame to carry said plate, a rock shaft extending along said plate and extending through ears provided upon the plate, said support having horizontal slots, and said plate having vertical slots, said slots engageable by securing devices to admit longitudinal and vertical adjustment of the plate and rock shaft, a directrix mounted upon said rock shaft and having a gage or stop for the leading edge of the sheet, and a key connected to said rock shaft to swing the directrix to the plate; said rock shaft being journaled at one end in a bracket which is vertically adjustable upon said support, and having a connection at said end to said key.

14. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a sheet-guiding plate on edge and extending along the front of the platen and rising therefrom, a support upon said platen frame to carry said plate, a rock shaft extending along said plate and extending through ears provided upon the plate, said support having horizontal slots, and said plate having vertical solts; said slots engageable by securing devices to admit longitudinal and vertical adjustment of the plate and rock shaft, a directrix mounted upon said rock shaft and having a gage or stop for the leading edge of the sheet, and a key connected to said rock shaft to swing the directrix to the plate; said rock shaft being journaled at one end in a bracket which is vertically adjustable upon said support, and having a connection at said end to said key; said key being mounted upon the platen frame and connected to rolls that run upon the platen, and said connection being extensible to compensate for the different vertical adjustments of the rock shafts.

15. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a sheet-guiding plate on edge and extending along the front of the platen and rising therefrom, a support upon said platen frame to carry said plate, a rock shaft extending along said plate, the latter having ears in which the rock shaft turns, said plate and rock shaft being adjustable up and down, and said plate being also adjustable longitudinally of the platen, a directrix splined upon said rock shaft between said ears and adjustable along the shaft, and having a stop ledge for the leading edge of the sheet, and a key connected to the rock shaft to swing the ledge to the plate.

16. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a sheet-guiding plate on edge and extending along the front of the platen and rising therefrom, a support upon said platen frame to carry said plate, a rock shaft extending along said plate, the latter having ears in which the rock shaft turns, said plate and rock shaft being adjustable up and down, and said plate being also adjustable longitudinally of the platen, a directrix splined upon said rock shaft between said ears and adjustable along the shaft, and having a stop ledge for the leading edge of the sheet, and a key connected to the rock shaft to swing the ledge to the plate; said key mounted upon the platen frame and connected to pressure rolls that rock upon the platen, and an extensible connection being provided between the key and said rock shaft.

17. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a sheet-guiding plate extending along the platen, a directrix having a stop for the leading edge of the sheet, means for moving said stop to the top of said plate, and a stop upon the rear of said plate to arrest the directrix.

18. In a front strike writing machine, the combination with a revoluble platen and a platen frame, of a sheet-guiding plate extending along the platen, a directrix having along its upper edge a stop ledge for the leading edge of the sheet, means for moving said directrix to bring said ledge over said plate, and a ledge upon the rear of said plate and projecting thereabove to arrest said stop ledge.

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