

No. 813,345.

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A. J. BRIGGS.
TYPE WRITING MACHINE.
APPLICATION FILED JULY 12, 1904.

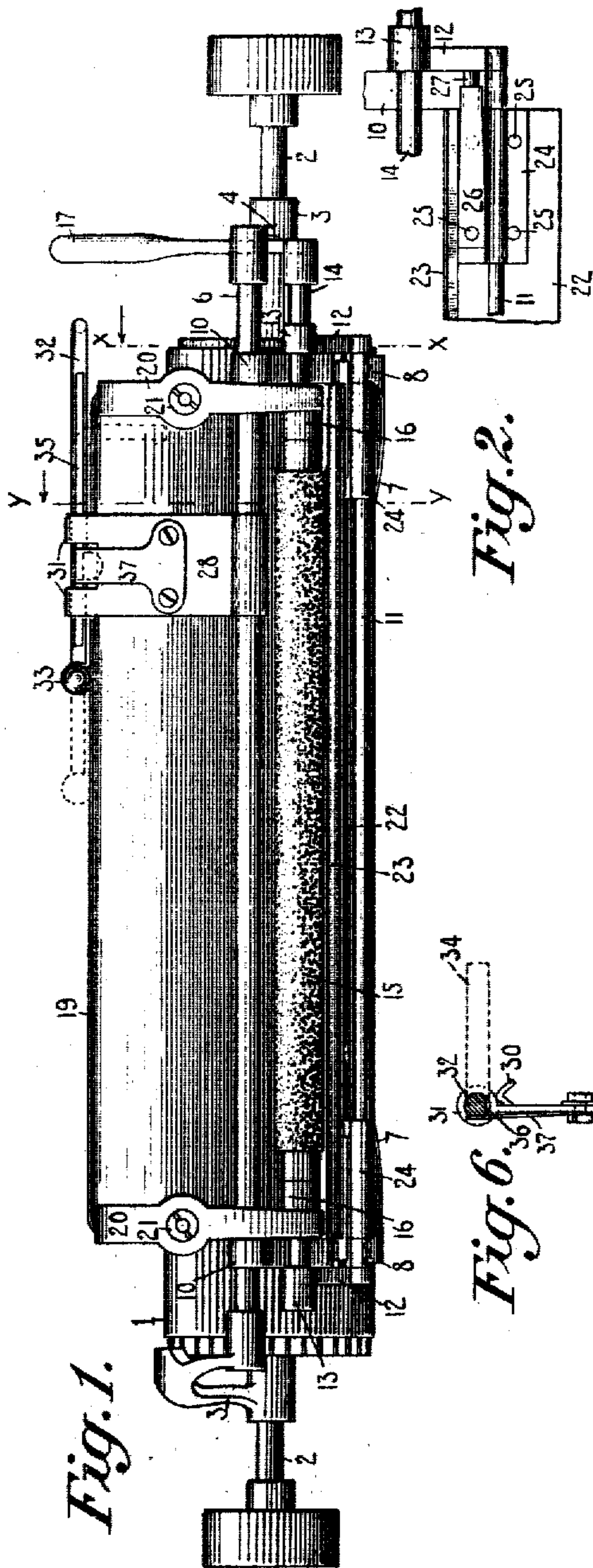


Fig. 1.

Fig. 5.

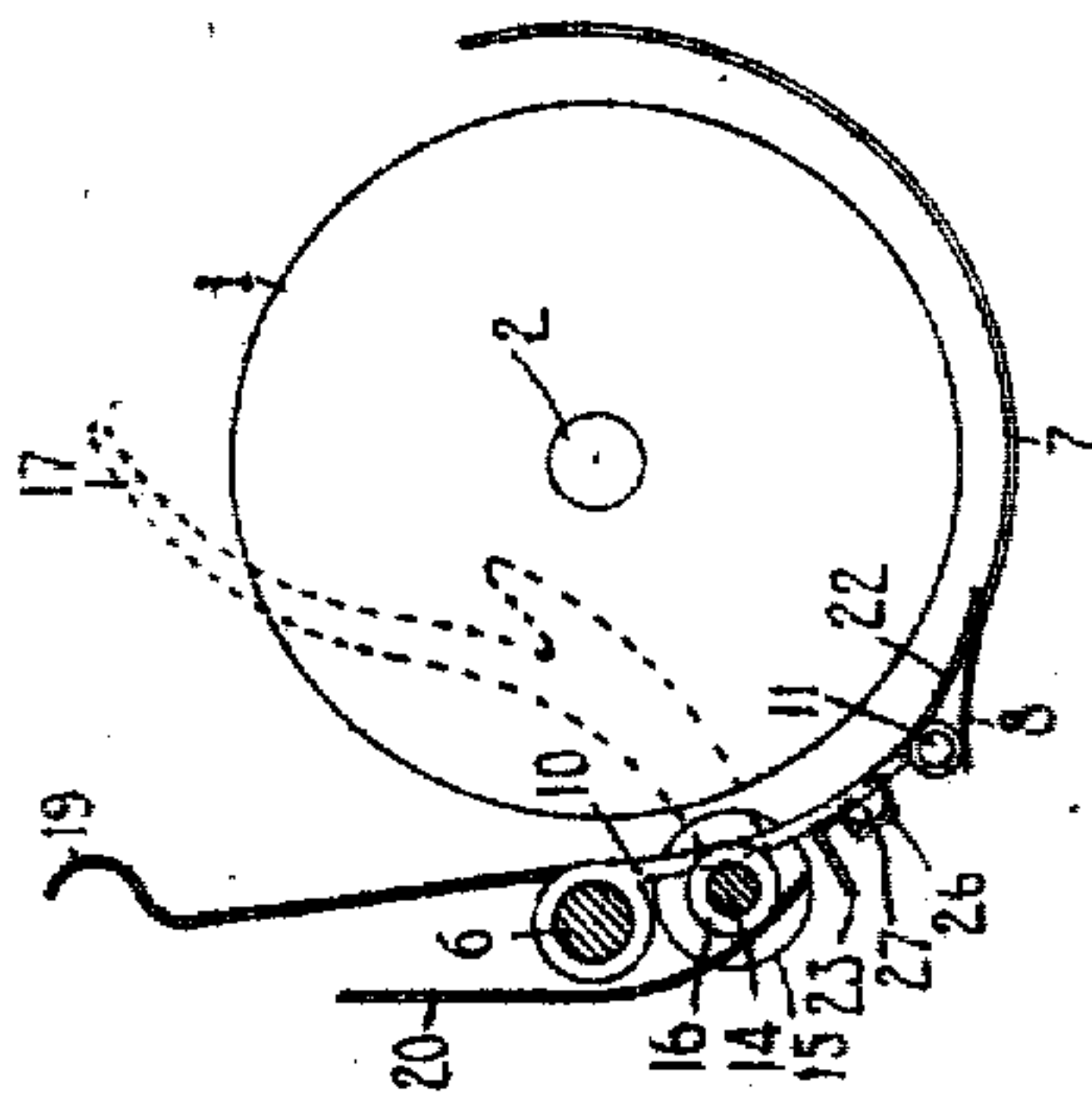


Fig. 4.

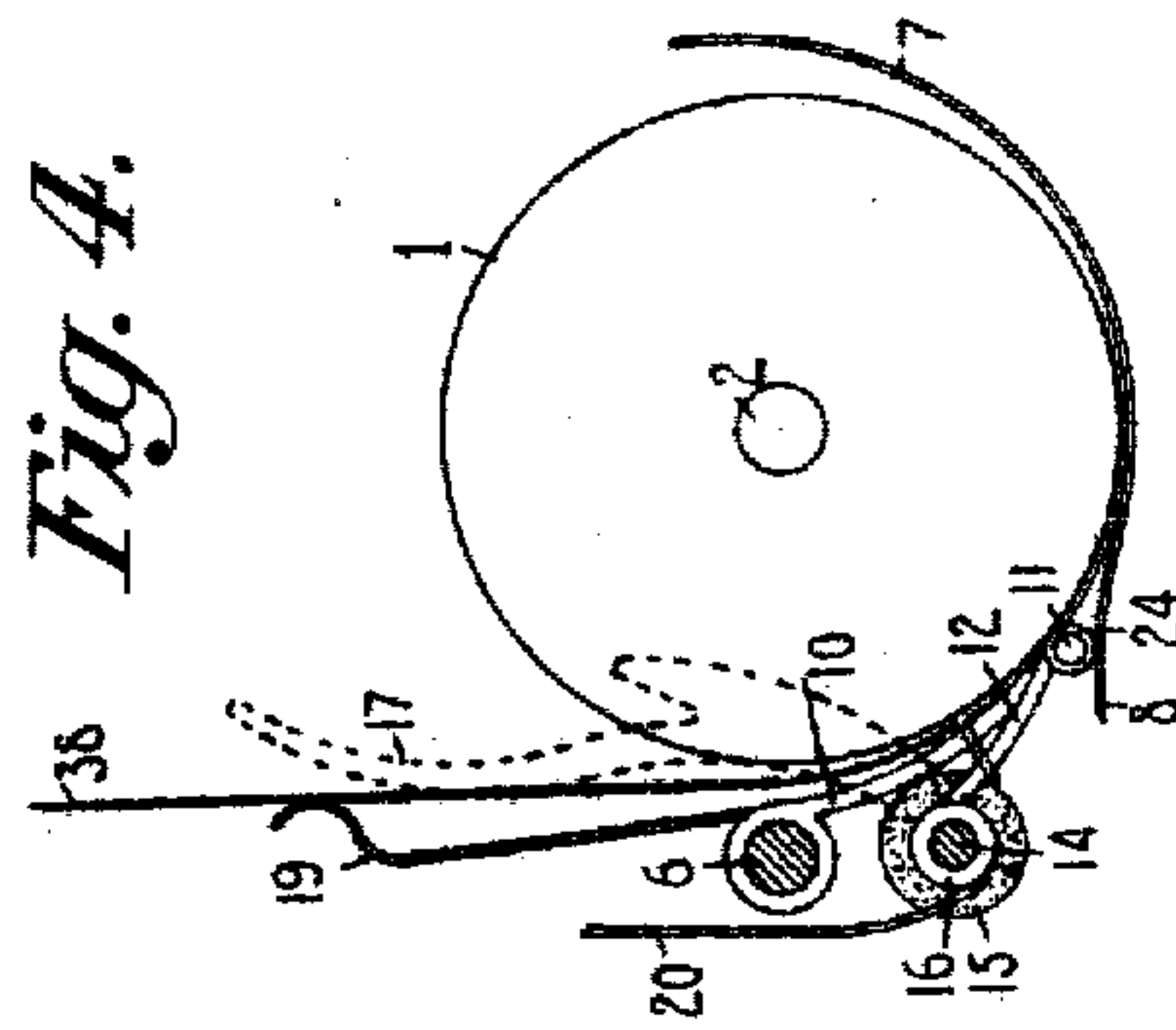


Fig. 3.

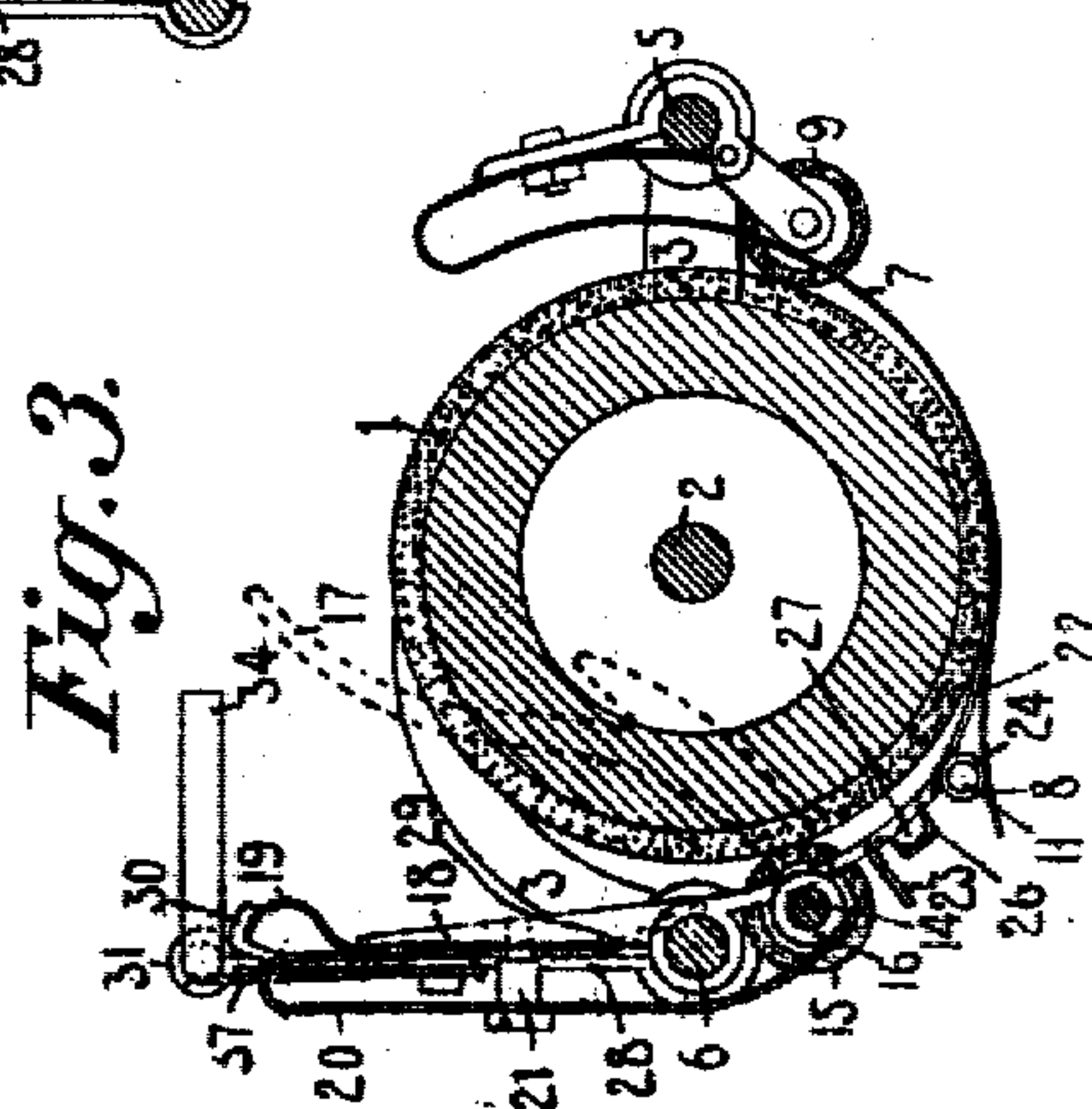


Fig. 2.

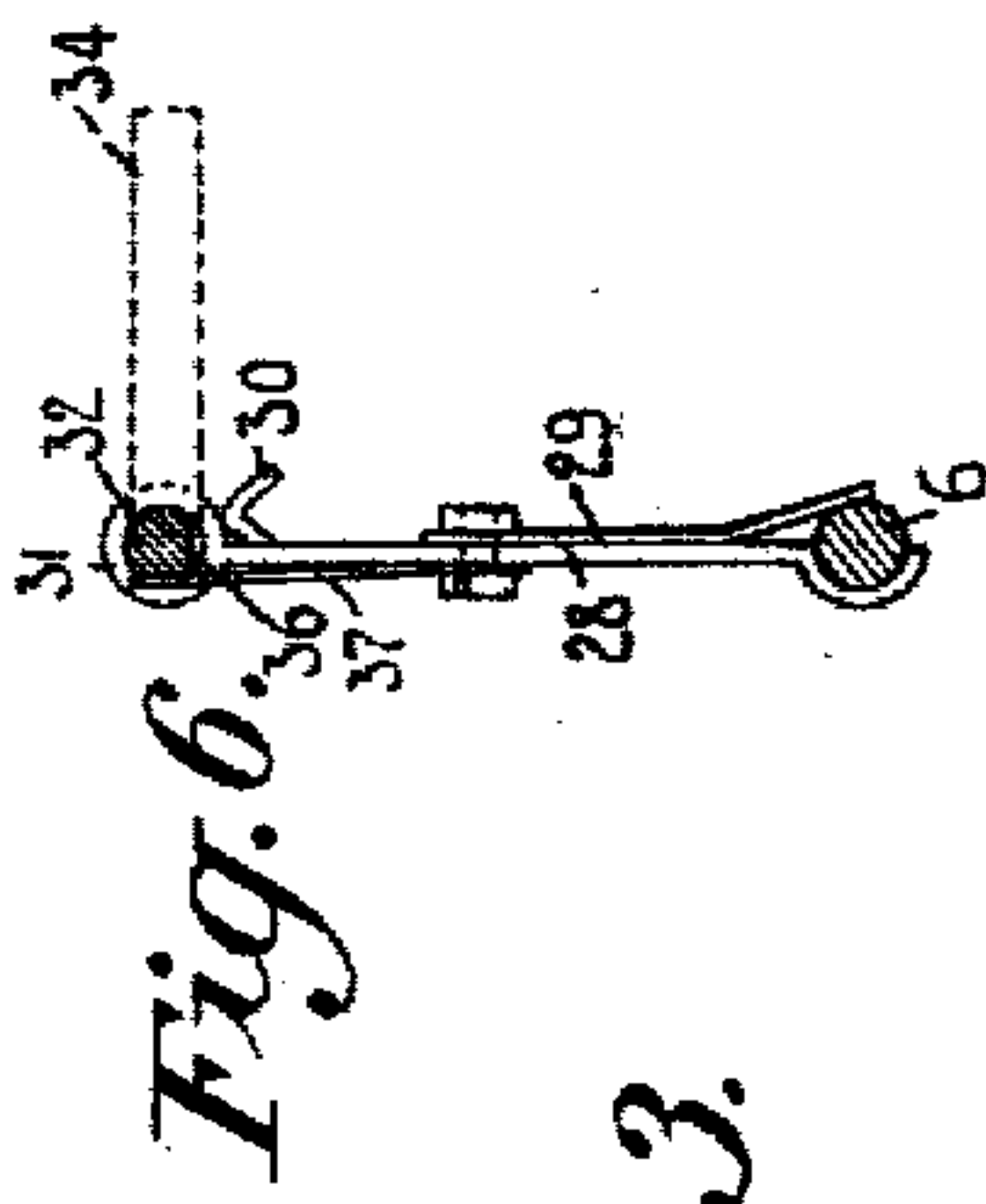


Fig. 6.

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UNITED STATES PATENT OFFICE.

ARTHUR J. BRIGGS, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE SMITH
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TYPE-WRITING MACHINE.

No. 813,345.

Specification of Letters Patent.

Patented Feb. 20, 1906.

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To all whom it may concern:

Be it known that I, ARTHUR J. BRIGGS, a citizen of the United States, and a resident of Syracuse, in the county of Onondaga 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 type-writing machines, and more particularly to the paper-feeding mechanism of such machines.

The main object of the invention is to provide means for regulating and facilitating the insertion and manipulation of the paper in the machine, said means consisting, first, of a paper-stop for the leading edge or top of the sheet as it is introduced into the machine, said stop coöperating with the main feed-roll to secure uniformity in the positioning of the paper; second, of a gage or guide for the side edge of the sheet, said gage serving to position the sheet laterally; third, of a mechanism for separating from the surface of the platen both the main feed-roll and the paper-stop for the top or leading edge of the paper.

To this and other ends, which will subsequently appear, the invention consists of certain features of construction and combinations of devices, all as will be hereinafter set forth, and more particularly pointed out in the appended claims.

The invention is shown in the drawings as embodied in a "Smith Premier" type-writing machine; but it is to be understood that it may be adapted to other forms of writing-machines.

One form of the invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a rear elevation of the platen and platen-frame of a type-writing machine embodying the invention. Fig. 2 is an enlarged fragmentary plan view of the right-hand end of Fig. 1 as seen from the under side. Fig. 3 is a view taken on the line *xx* of Fig. 1. Figs. 4 and 5 are diagrammatic views showing the operation of the invention and corresponding to Fig. 3. Fig. 6 is a view taken on a plane corresponding to the line *yy* of Fig. 1.

The same part will be designated by the same numeral throughout the several views of the drawings, in which—

1 is a platen mounted upon a shaft 2, sup-

ported in side bars 3 and 4, which are connected together by a front rod 5 and rear rod 6, the side bars and the front and rear rods composing the platen-frame. Adjustably mounted on the front rod 5 are the usual marginal spring paper-fingers 7, each having a rearwardly-extending end 8 and the front feed-rolls 9, of which only one is shown. Pivotally supported near the ends of the rear rod 6 are the upper ends of depending links 10, the lower ends of said depending links serving as bearings for a small rod or shaft 11. The ends of the rod 11 project beyond the bearings in the links 10, and to these ends are pinned or otherwise suitably secured the lower ends of the short links or arms 12, which are provided with eyes, so that they may be readily mounted upon the said rod 11. The upper ends of the links or arms 12 terminate in eyes 13, in which the shaft 14 is fixed, and upon this latter shaft the main pressure or feed roll 15 is loosely mounted and is maintained in its proper position longitudinally of the said shaft by means of the collars 16. The left-hand end of the shaft 14, or, as viewed from the rear, as in Fig. 1, the right-hand end, extends beyond the eye 13 in the supporting-link 12 and is provided with a handle or finger-lever 17, which is made fast to the shaft. Suitably secured, as by set-screws, to the rear rod 6 are the vertical standards or supports 18 of the paper-table 19, and attached to the backs of these supports are leaf-springs 20, the lower ends whereof bear against the collars 16 with a pressure regulated in degree by the regulating-screws 21.

Pivotally mounted upon the shaft 11 and extending longitudinally of the platen is a paper-guide plate 22, terminating at the rear in an outturned lip 23, which serves as a stop and regulator for the leading edge or top of the sheet to be written upon. The preferable manner of mounting the paper-guide plate and paper-stop upon the rod or shaft 11 consists, as appears most clearly in Fig. 2, in providing the under side of the plate 22 near its right and left hand ends with bearing-plates 24. The bearing-plates are suitably attached, as by rivets 25, to the paper-guide plate, forming, in conjunction with the latter, long bearing eyes in which the shaft 11 is received. One of the rivets 25 of each set, as also appears most clearly in said Fig. 2,

serves to attach a leaf-spring 26 to the under side of the bearing-plate 22 near each end of the latter, and the outer ends of said leaf-springs bear against bosses or projections 27 on the rear surfaces of the depending arms or links 10 near their lower ends.

The side edge or margin regulator for the sheet to be written upon is supported in a standard 28, which is slidably mounted upon the rear rod 6 of the platen-frame, being maintained in any desired position longitudinally of the platen by the spring 29, which is in frictional contact with the rod 6, as best appears in Fig. 6. The middle portion of the top part of the support or standard 28 terminates in a forwardly-turned lip 30, which hooks over the top of the paper-table 19, and thus serves to maintain the support in proper position vertically. The side top portions of the support terminate in eyes 31, wherein the rod 32 is slidably mounted. The inner end of said rod is furnished with a ball 33, and the other end is turned forwardly at right angles to the main part of the rod, thus forming a stop 34 for the side edge of the paper. The rod 32 is flattened on two sides at 35 and 36 and may be turned back and down into non-working position, as shown by the dotted lines in Fig. 1, the flattened portions 35 and 36 serving, in conjunction with a friction-spring 37, mounted at the back of the standard 28, to maintain the rod 32 in either of said positions. The friction-spring 37 also serves to retain the margin-regulating rod 32 in position longitudinally of the platen, while the ball 33 and the stop portion 34 prevent the rod from becoming separated from its support.

The method of using the means for regulating and positioning the paper and the action of the same will now be described. The normal position of the parts is best seen in Fig. 3, in which it will be assumed that the margin-regulating stop 34 is in the desired relation with the platen, longitudinally considered. As will be seen upon an inspection of Fig. 3, the leaf-springs 20, pressing inwardly against the collars 16 on the feed-roll shaft 14, normally maintain the feed-roll 15 in frictional contact with the surface of the platen, while the shaft 14, pressing against the depending links or arms 10, under the influence of the spring 20, tends to rotate said depending links 10 about their center upon the rear rod 6, pressing said links toward the platen to the position shown in said Fig. 3. In this position the forward end of the paper-guide plate 22, which is rotatably mounted upon the shaft 11, supported in the lower ends of the depending links 10, is pressed into contact with the surface of the platen by the springs 26, and the stopping lip or ledge 23, in which the rear of the paper-guide plate 22 terminates, is separated from the platen. If now preparatory to inserting the sheet to be

written upon the finger piece or lever 17, which, it will be recalled, is fixedly attached to the feed-roll shaft 14, be pushed rearwardly, the parts will assume the positions shown in Fig. 4. During the first portion of the rearward swing or travel of the finger-lever 17 the shaft 11 is swung about its axis of movement toward the platen, carrying with it the pivoted guide-plate 22, the forward edge of the latter serving as a fulcrum. This movement is continued until the guide-plate 22, which is bent to conform to the surface of the platen, is seated against the latter, the leaf-springs 26 yielding to permit the guide-plate to move sufficiently in advance of the bosses 27 for this purpose. In this position, as will be apparent from an inspection of Fig. 4, the paper-stop 23, which is integral with the guide-plate 22, is in contact along its base with the platen. The shaft 11 having now reached the end of its movement toward the platen serves as a fulcrum for the supporting-links 12 of the feed-roll shaft 14, and the further rearward movement of the finger-lever 17 will cause the feed-roll 15 to be swung away from the platen about the shaft 11 as an axis and against the tension of the springs 20. The parts will now be in the position diagrammatically illustrated in Fig. 4. If the sheet to be written upon (designated as 38 in said figure) be inserted, it will pass down behind the platen until its leading edge or top contacts with the paper-stop 23. If the return movement of the finger-lever 17 be now begun, the feed-roll 15 will first be moved back under the tension of its springs 20 toward the platen until it frictionally grips the sheet 38, after which the paper-stop 23 will move out of the path of the leading edge of the sheet and will return with the guide-plate 22 to the normal position. (Shown in Fig. 3.) It being presupposed that the sheet 38 has been inserted into the machine with its left-hand edge in contact with the margin-regulating arm 34, the said sheet is now in position to be fed around the platen in the usual manner.

If it be desired to advance or retract the sheet freely or to withdraw it altogether from the machine, the finger-lever 17 is moved forwardly from normal position to the position shown by the dotted lines in Fig. 5, and this forward movement causes the parts to assume the positions illustrated in said figure, the feed-roll 15, the guide-plate 22, and the paper-stop 23 all being revolved rearwardly away from the platen about the back rod 6 as an axis, the guide-plate 22 forcing the front marginal paper-fingers 7 to the position shown. The paper may now be withdrawn readily, and if the front side feed-rolls 9 be swung out of contact with the platen in a manner well understood an entirely free passage circumferentially of the platen will be afforded.

It will be seen that I provide means for straightening or squaring the leading edge or top of the sheet as it is introduced into the machine for frictionally gripping or controlling the same while it is maintained thus straightened or squared and for at the same time bringing the sheet into a predetermined relation longitudinally of the platen. It will also be seen that the second and following sheets may be positioned in the machine to be written upon correspondingly with the first sheet and that the movement of the actuating means in the reverse direction from normal position frees the sheet from control of the regulating and feeding means just described, so that it may be readily removed or shifted.

Various changes may be made in the parts and combinations of devices as described without departing from the invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, and means for moving the paper-stop and feed-roll, the feed-roll being revoluble about the axis on which the paper-stop is mounted.

2. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, and means for moving the paper-stop and feed-roll, the feed-roll and the paper-stop both being revoluble about the same axis, said feed-roll normally being in contact with the platen, and said paper-stop normally being out of contact with the platen.

3. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, and means for moving the paper-stop and feed-roll, the feed-roll and the paper-stop both being revoluble about the same axis, said feed-roll normally being in contact with the platen, and said paper-stop normally being out of contact with the platen, said means first moving the paper-stop into contact with the platen, and afterward moving the paper-feed roll out of contact with the platen.

4. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, a finger-piece and means actuated by the finger-piece for moving the paper-stop and the feed-roll, the feed-roll and the paper-stop both being revoluble about the same axis, the feed-roll normally being in contact with the platen and the paper-stop normally being out of contact with the platen, the said moving means first moving the paper-stop into contact with the platen and afterward moving the feed-roll out of contact with the platen, both movements being caused during the travel of the said finger-piece in one direction.

5. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, a finger-piece, and means actuated by the finger-piece for moving the paper-stop and feed-

roll, the feed-roll and the paper-stop both being revoluble about the same axis, the said means being adapted to move the feed-roll against the sheet so as to frictionally control it and afterward to move the paper-stop out of the path of the leading edge of the sheet, both movements being caused during the travel of the said finger-piece in return direction.

6. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, a finger-piece, and means controlled by the finger-piece for moving the paper-stop and the feed-roll, the said finger-piece being movable from normal position in one direction to move the feed-roll out of contact with the platen and movable in another direction to throw the said paper-stop into operative position and to move the said feed-roll out of contact with the platen.

7. In a type-writing machine, the combination of the platen, a feed-roll, a guide-plate, a paper-stop, a finger-piece, means actuated by the finger-piece for moving the paper-stop, the guide-plate and the feed-roll, the said finger-piece being movable from normal position in one direction to move the feed-roll and the guide-plate out of contact with the platen, and movable in another direction to throw the said paper-stop into contact with the platen and then to move the said feed-roll out of contact with the platen.

8. In a type-writing machine, the combination of a platen, a feed-roll, and a paper-guide plate extending longitudinally of the platen and revoluble about a central longitudinal axis, one edge of the guide-plate being provided with a paper-stop and the opposite edge serving to press the paper against the platen.

9. In a type-writing machine, the combination of a platen, a feed-roll, and a paper-guide plate extending longitudinally of the platen, said guide-plate being revoluble about a central longitudinal axial support, both the guide-plate and its axial support being movable bodily to and from the platen, and said feed-roll being also revoluble about the axial support of said guide-plate.

10. In a type-writing machine, the combination of a platen, a feed-roll, a paper-guide plate extending longitudinally of the platen, and revoluble about a central longitudinal axis, the rear portion of said guide-plate serving as a regulator to position and straighten the paper, and being normally out of contact with the platen.

11. In a type-writing machine, the combination of a platen, a revoluble and adjustable side gage or margin regulator serving to position the paper longitudinally of the platen, and a paper-guide plate extending longitudinally of the platen, the rear portion of said

guide-plate serving as a regulating-stop to position and straighten the paper along its leading edge or top.

12. In a type-writing machine, the combination of a platen, a pivoted paper-guiding plate having its rear portion, or that part in rear of its pivot, bent outward to form a paper-stop and having its edge forward of the pivot-spring pressed toward the platen, and means for moving said rear portion against the platen.

13. In a type-writing machine, the combination of a platen, a platen-frame, links pivotally connected with said frame, a shaft mounted in said links, a paper-guiding plate pivoted on said shaft and having a portion thereof adapted to operate as a paper-stop, links on said shaft, said links having a rod or shaft mounted in their ends, a pressure-roller mounted on said second shaft, a finger-lever on said second shaft, and means for normally keeping the forward edge of said plate and said roller in contact with the platen.

14. In a type-writing machine, the combination of a platen-frame, a platen, links mounted on said frame, a shaft mounted on said links, links fast on said shaft and extending toward the axis of motion of the first-mentioned links, a shaft fast to the second-mentioned links, a pressure-roller journaled on said last-mentioned shaft, a finger-lever fast to said shaft, a paper-guiding plate journaled on the first-mentioned shaft and having its rear edge formed to operate as a paper-stop, and springs for normally keeping said roller and the forward edge of said plate in contact with the platen.

15. In a type-writing machine, the combination of a platen-frame, a platen, links pivotally connected with the platen-frame, a shaft borne by said links, a paper-guiding plate pivotally mounted on said shaft and provided with a paper-stop, a spring acting to press the forward edge of said plate against the platen, and a lever for moving said links and shaft toward and from said platen.

16. In a type-writing machine, the combination of a platen-frame, a platen, a pivoted paper-guiding plate coacting with said platen and provided with a paper-stop at its rear, a spring for keeping the forward edge of said plate normally in contact with said platen, and mechanism for moving said plate bodily into contact with said platen.

17. In a type-writing machine, the combination of a platen-frame, a platen, an adjustable support on said frame, a bent rod slidable in bearings on said support and forming

a margin-regulator, and a paper-guide plate extending longitudinally of the platen, the rear portion of said guide-plate serving as a regulating-stop to position and straighten the paper along its leading edge or top.

18. In a type-writing machine, the combination of a platen-frame, a platen, a support slidably connected with a rod of said platen-frame, a bent rod slidable in bearings on said support and forming a margin-regulator, and a paper-guide plate extending longitudinally of the platen, the rear portion of said guide-plate serving as a regulating-stop to position and straighten the paper along its leading edge or top.

19. In a type-writing machine, the combination of a platen-frame, a platen, a support connected with said frame, a bent rod slidably and revolubly connected with said support and forming a margin-regulator, and adapted to be turned out of working position, and a paper-guide plate extending longitudinally of the platen, the rear portion of said guide-plate serving as a regulating-stop to position and straighten the paper along its leading edge or top.

20. In a type-writing machine, the combination of a platen-frame, a platen, a support adjustably connected with said frame, a bent rod slidably and revolubly connected with said support and forming a margin-regulator, and adapted to be turned out of working position; and a spring bearing on said rod and controlling the same.

21. In a type-writing machine, the combination of a platen; a feed-roll; a paper-stop; a finger-piece; and means controlled by the finger-piece for moving the feed-roll out of contact with the platen without bringing the paper-stop into operation, or for moving the feed-roll out of contact with the platen and bringing the paper-stop into operation, as may be desired.

22. In a type-writing machine, the combination of a platen, a side gage or margin-regulator to position the paper longitudinally of the platen, and a paper-guide plate extending longitudinally of the platen, the rear portion of said guide-plate serving as a regulating-stop to position and straighten the paper along its leading edge or top.

Signed at Syracuse, in the county of Onondaga and State of New York, this 27th day of June, A. D. 1904.

ARTHUR J. BRIGGS.

Witnesses:

E. E. CORY,

A. L. HINMAN.