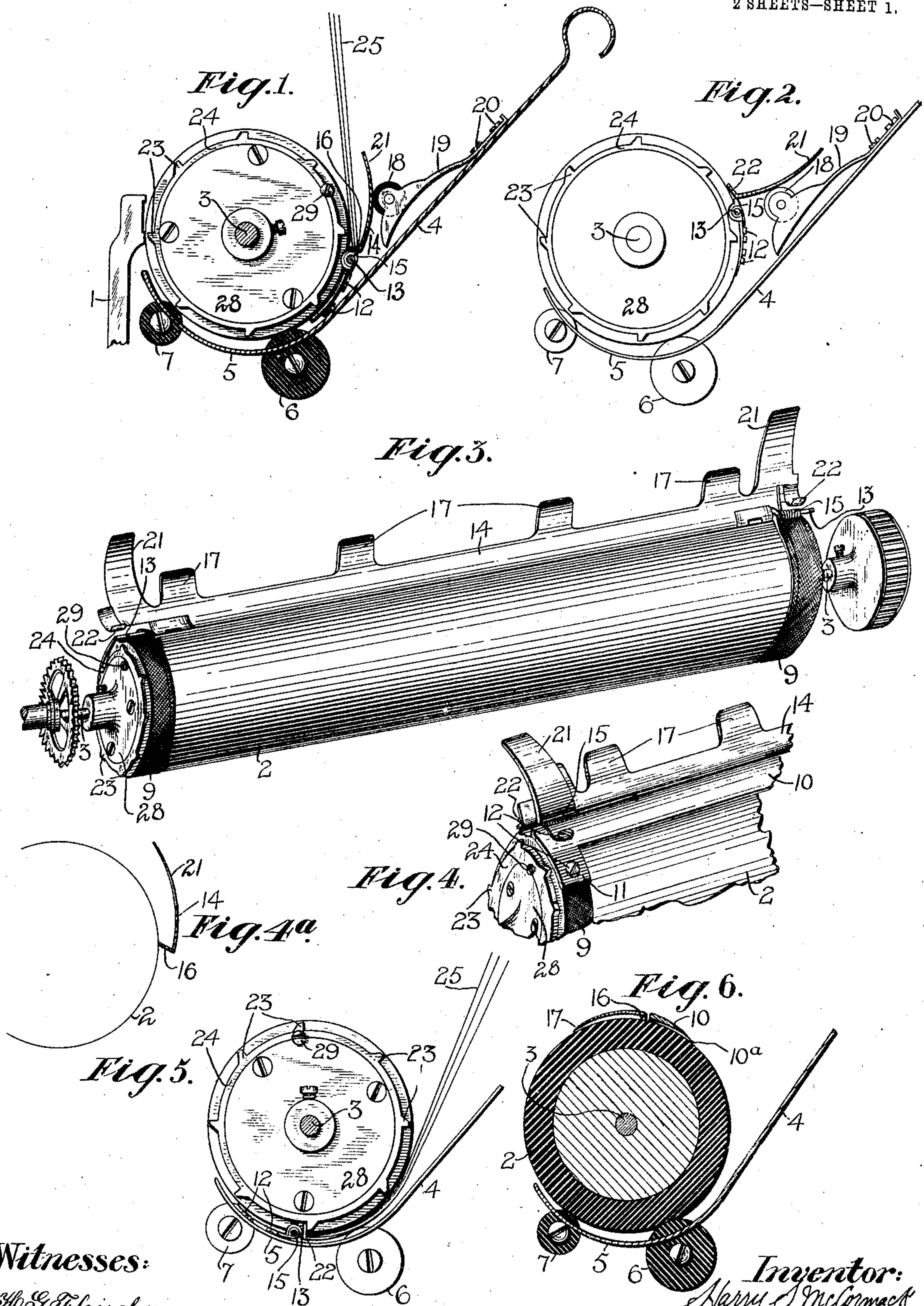


No. 850,310.

PATENTED APR. 16, 1907.

H. S. McCORMACK.  
TYPE WRITING MACHINE.  
APPLICATION FILED FEB. 19, 1907.

2 SHEETS—SHEET 1.



Witnesses:

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Inventor:

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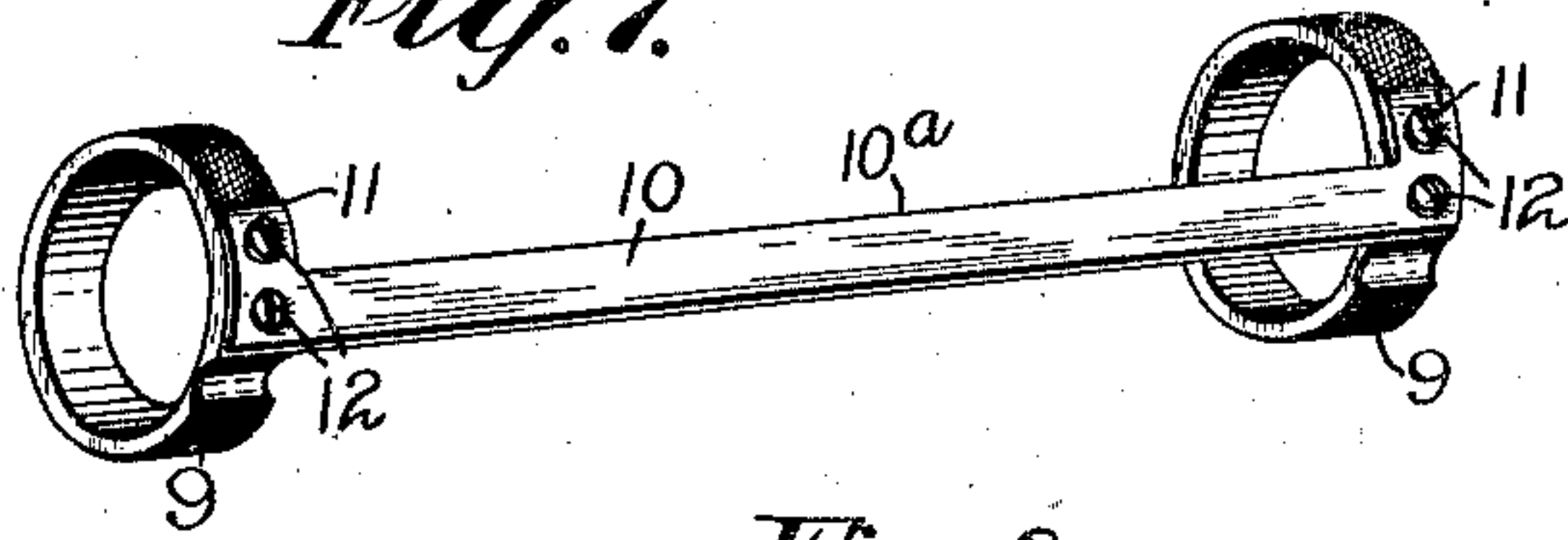
No. 850,310.

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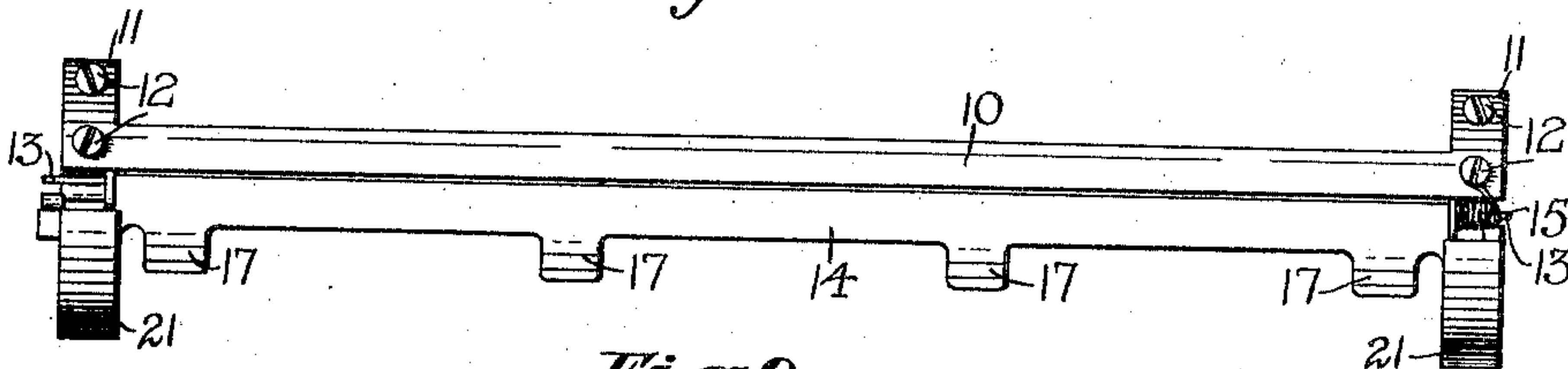
H. S. McCORMACK.  
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2 SHEETS—SHEET 2.

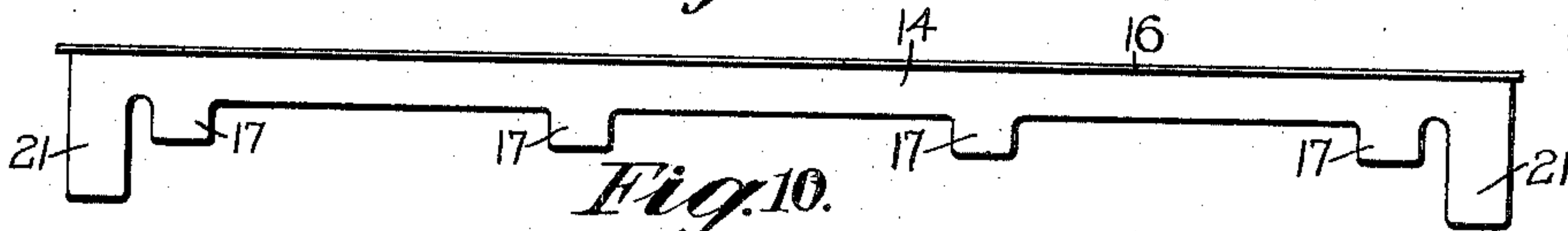
*Fig. 7.*



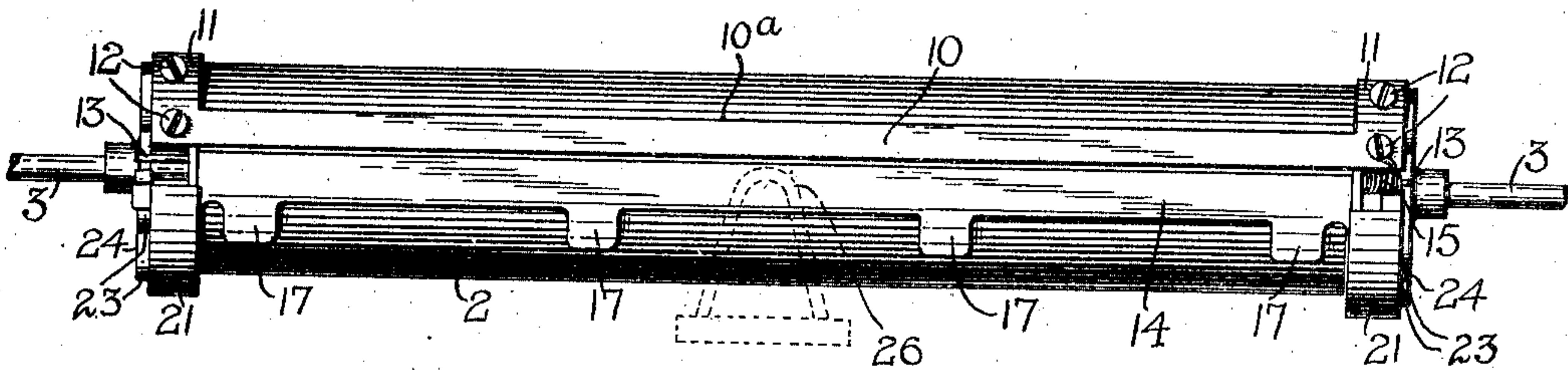
*Fig. 8.*



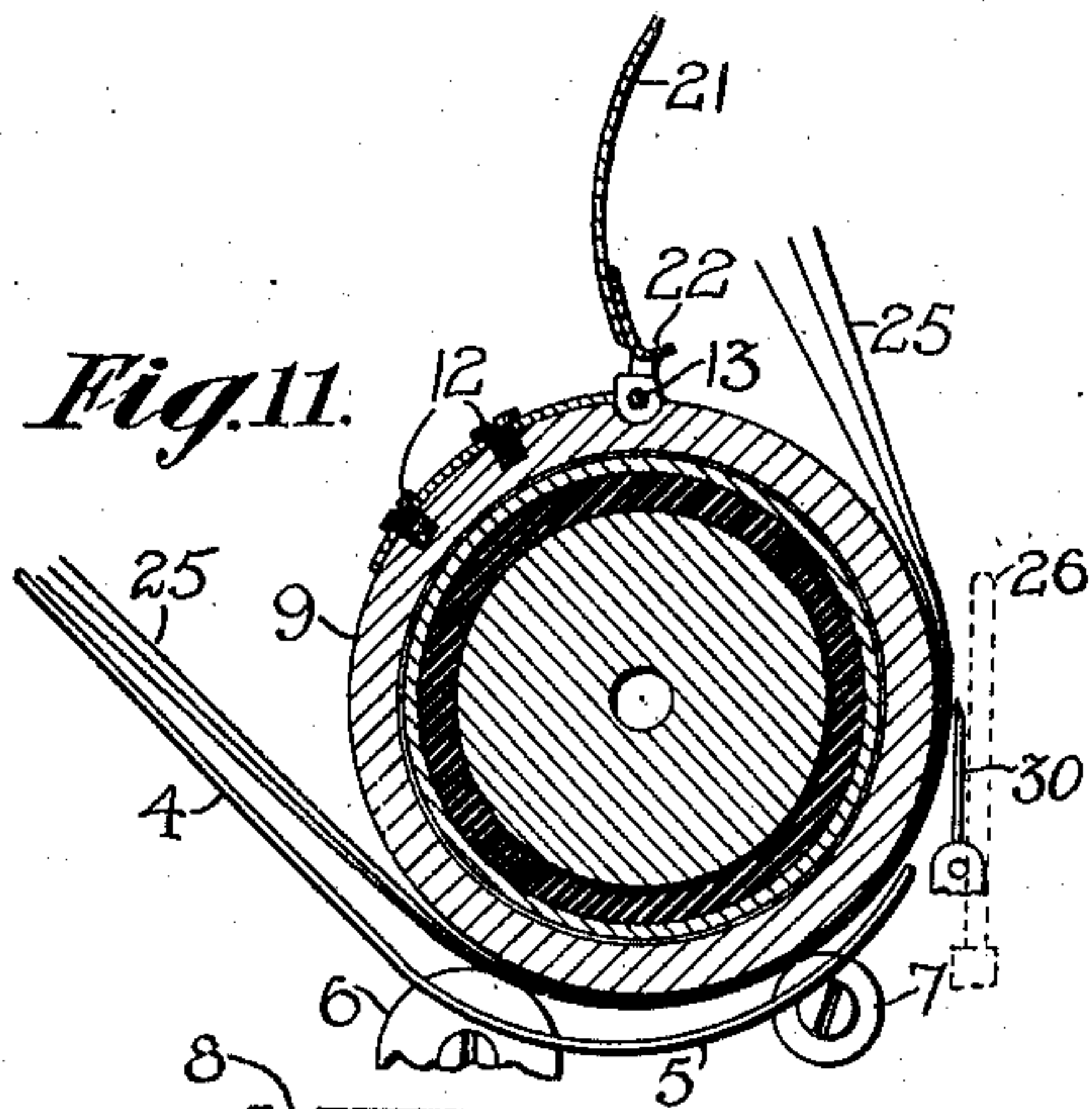
*Fig. 9.*



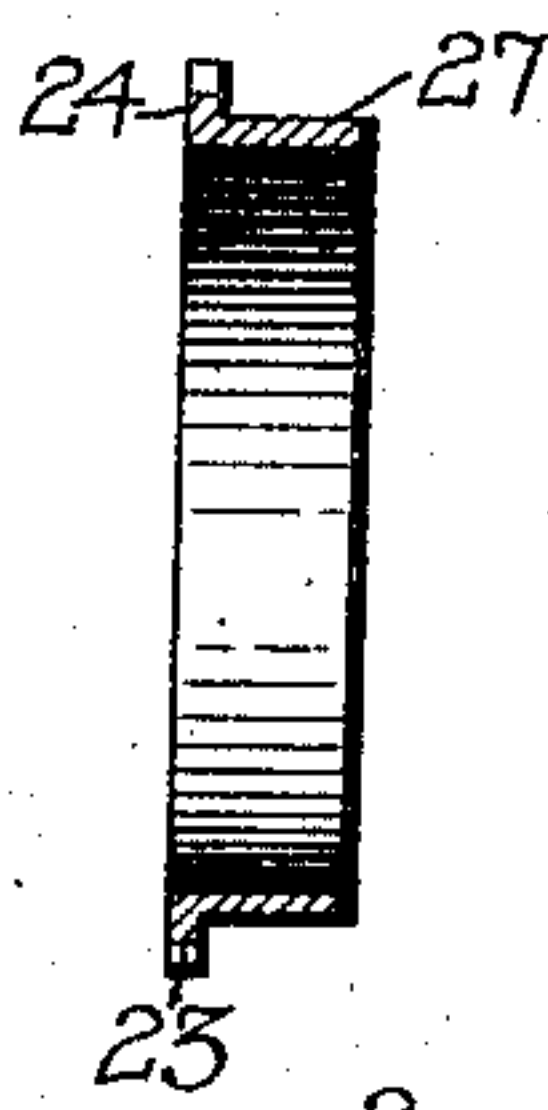
*Fig. 10.*



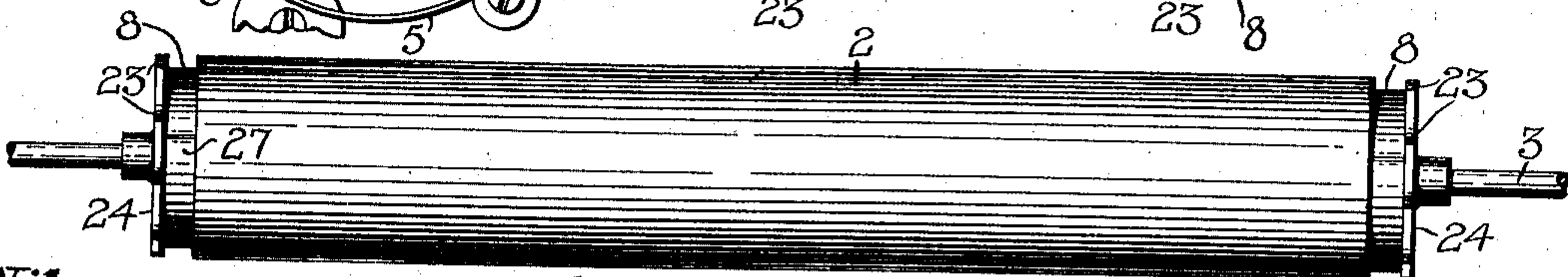
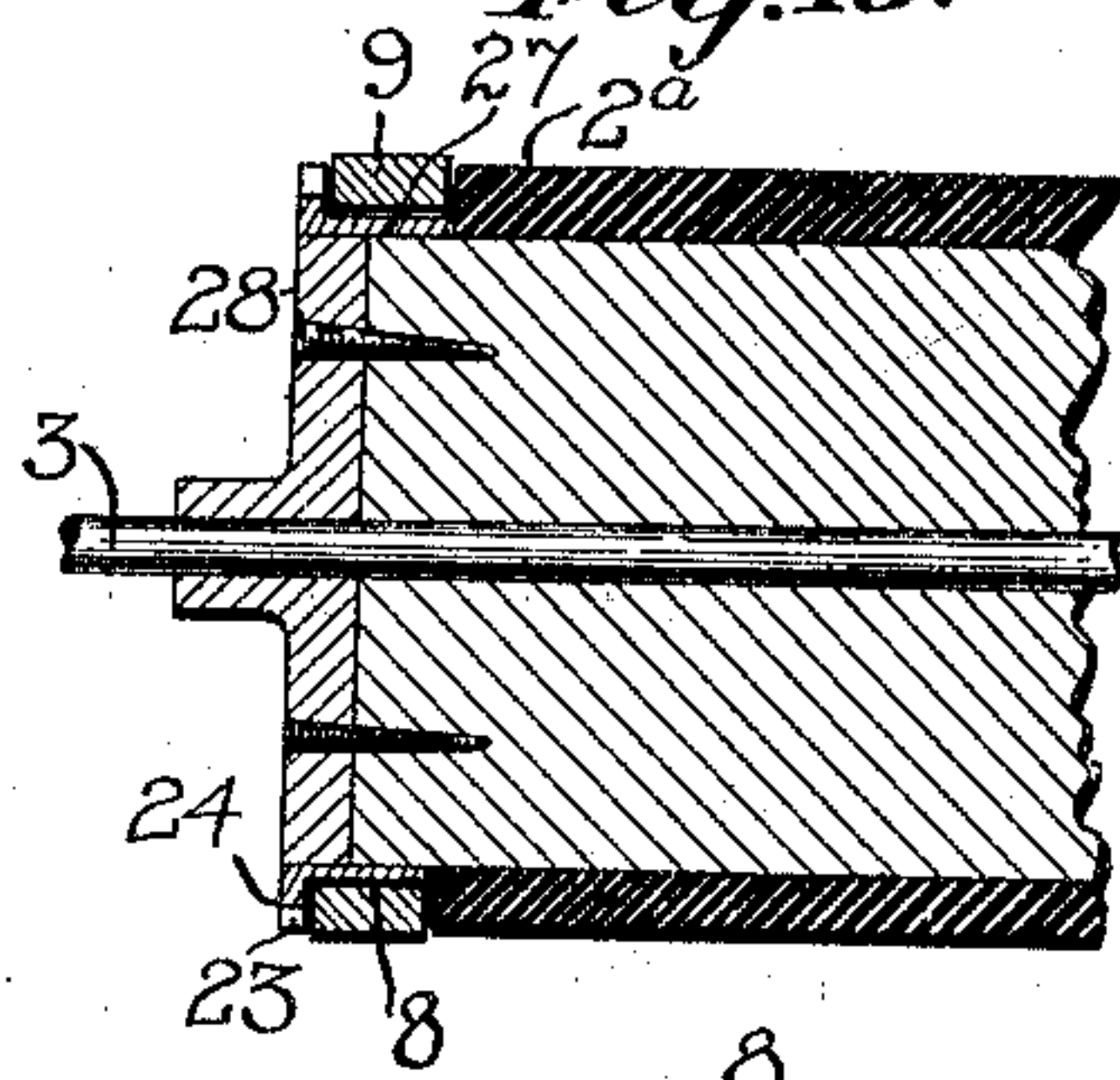
*Fig. 11.*



*Fig. 12.*



*Fig. 13.*



*Fig. 14.*

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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. 850,310.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed February 19, 1907. Serial No. 358,282.

*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 revoluble platens and coöperating paper-feeding devices of type-writing machines. Its object is to facilitate the introduction of paper sheets between the platen and said feeding devices, which are usually in the form of rolls or yielding fingers pressing against the platen, and particularly to facilitate the placing of the leading edges of the sheet parallel with the line of writing—that is, to accurately gage the leading edge of the sheet and to insure the maintenance of the sheet in such gaged condition during its introduction between the platen and said pressure devices.

The invention is especially useful when it is desired to insert many sheets in the machine together, as during manifolding, since they may be readily placed with their edges even and parallel with the printing-line, and so maintained during their introduction between the pressure-rolls and the platen. After such introduction the sheets are maintained in proper relation by the coöperation of said rolls and platen, while the sheets are left free to take their usual course in passing out of the machine.

In carrying out my invention I provide a paper-clip, which extends along the platen and is normally open and inactive during the rotation of the platen, so as to permit continued revolutions of the platen independently of the clip. Said clip is preferably provided with a gage, against which the leading edges of the sheet may be placed. Then the clip may be closed upon the sheets and held closed by the pressure-rolls running thereon. After passing said rolls and the other paper-guiding devices usually employed the clip is opened automatically by means of a spring, which constantly tends to hold the clip open. The clip is preferably carried around the platen by the action of the platen itself, means being provided to cause the clip to be operatively connected to the platen whenever the clip is closed. For this purpose I provide ratchet-wheels or the like upon the

ends of the platen and cause a pair of catches that are mounted upon the ends of the clip to engage said ratchet-wheels whenever the clip is closed to become disengaged from said ratchet-wheels by the action of said spring in opening the clip.

Other features and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 is a side sectional elevation of the platen-frame and platen of an "Underwood" front-strike type-writing machine provided with my improvements, the clip being shown in partly-open position to receive and gage the leading edges of the sheets. Fig. 2 shows the clip fully opened and occupying its normal idle position back of and below the platen, where it is out of the way. Fig. 3 is a perspective view of the platen and clip and the latter being shown in open position. Fig. 4 is a perspective fragmentary view of one end of the platen, illustrating certain details, the clip being shown open. Fig. 4<sup>a</sup> illustrates diagrammatically the preferred angle formed by the paper-gage with the surface of the platen. Fig. 5 illustrates the use of the clip in introducing sheets between the platen and the pressure-rolls. Fig. 6 is a diagrammatic sectional view showing the clip closed and illustrating the compactness of the clip and its main supporting-bar, whereby they are well adapted to effect an entrance between the platen and the yielding pressure-rolls without necessitating the exercise of undue force in turning the platen. Fig. 7 is a perspective view of the bar and its revoluble collars or hubs, on which the clip is mounted. Fig. 8 is a plan view of the clip and its supports, the clip being shown closed. Fig. 9 is an inverted plan view of the clip. Fig. 10 shows the relation of the parts shown in Fig. 8 to the platen. Fig. 11 shows the clip in the position which it assumes automatically after carrying the leading edges of the sheets safely past the usual paper-guides. Fig. 12 is a sectional view of one of the ratchet-wheels provided upon the ends of the platen. Fig. 13 is a longitudinal sectional view of one end of the platen. Fig. 14 shows the platen with the clip and its supports removed therefrom.

In said Underwood machine herein illustrated type-bars 1 strike rearwardly against the front side of a cylindrical platen 2, the latter having an axle 3, upon which it is jour-



naled in the ends of a platen-frame, which also comprises a paper-shelf 4. The paper-shelf inclines forwardly and downwardly and in rear of the platen and is prolonged at 5 to curve forwardly around the under side of the platen and up in front thereof to serve as a guide for the paper. A set of rear rolls 6 and a set of front rolls 7 press upwardly against the platen, the guide-plate 5 being formed with suitable transverse openings through which said rolls 6 and 7 play. The rolls 6 and 7 are usually mounted so that they may yield downwardly, all of the parts just described being in common use on said machine.

Upon the ends of the platen are provided annular recesses or bearings 8 to receive loosely a pair of collars or ring-like journals 9, the latter rigidly connected by a bar 10, which extends along the platen and close thereto, which bar is beveled along its rear edge, as at 10<sup>a</sup>, Fig. 6, to facilitate its introduction between the platen and the yielding pressure-rolls 6 7. The bar has at its ends ears 11, which are fixed to the collars 9 in any suitable manner, as by means of screws 12, and the entire device, which is seen at Fig. 7 removed from the platen, remains stationary and idle during the rotation of the platen, except during the period when it is coupled to the platen by instrumentalities hereinafter described.

Hinged upon the ends of the bar 10 by means of pintles 13 is a paper-clip 14 in the form of a thin strip extending along the platen from end to end thereof close to said bar 10. The clip is normally held in open position, Figs. 2 and 3, by a spring 15. Along its rear edge the clip is bent inwardly at right angles to form a ledge 16, which serves as a gage for the leading edges of the sheets, to square them to the platen or to bring them into parallelism with the printing-line, Fig. 1. From the opposite edge of the paper-clip extend tongues 17 to aid in confining the sheets against the platen, and both the clip 14 and the tongue 17 conform substantially to the curvature of the platen. Normally the clip stands open and idle in rear of and below the top of the platen, as seen at Fig. 2, the open clip resting against a stop in the form of a soft-rubber roll 18, carried upon the end of a spring-arm 19, secured by screws 20 upon the front side of the paper-shelf 4, two of these rolls 18 being provided, one at each end of the paper-shelf 4, and each carried upon a spring-arm.

When it is desired to introduce a card or sheet or a series of cards or sheets, the device may be turned to the Fig. 1 position either by grasping the freely-rotatable collars 9, which are knurled for this purpose, Fig. 3, or by taking hold of finger-pieces 21, formed at the ends of the clip, said finger-pieces being longer than the tongues 17. In either way

the clip device may be advanced to the Fig. 1 position, where the clip is held partly open by the rolls 18, against which the finger-pieces 21 are pressed by the action of the spring 15. By this means the ledge 16 is brought to a position radial of the platen to gage the leading edges of the sheets. When the clip is brought to this partially-closed position, there are brought into action two catches 22, one at each end of the clip, to engage the teeth 23 of a pair of ratchet-wheels 24, provided upon the ends of the platen, whereby the platen is temporarily locked to the clip and is enabled to carry the clip device bodily around from the Fig. 1 position to the Fig. 11 position, together with the sheets 25, and it will be observed that, as hereinbefore stated, the construction of the clip is such and the entire clip structure lies so close to the platen that the rolls 6 and 7 may ride easily thereover.

The finger-pieces 21 may be of sufficient length to remain in contact with the rolls 18 until the rolls 6 engage and control the clip and keep it closed; but in the form of the invention illustrated the said finger-pieces are only of sufficient length to remain in contact with rolls 18 and hold the clip partly closed until such time in the rotation of the platen as the clip enters the narrow space between the lower part of the paper-shelf 4 and the platen, whereby the clip is prevented from opening. The sheets are all held by the clip in the original position to which they were adjusted upon the platen until the sheets are safely introduced between the paper-guiding devices and the platen, (see Fig. 11,) so that the original alinement or squaring of the sheets upon the platen remain undisturbed. The tongues 17 are engaged by the rolls 6 7 and also by the usual front paper or card guide 26 (see dotted lines, Figs. 10 and 11) in the form of a wire loop customarily provided upon the framework of said machine. After passing said loop the clip is opened wide by a spring 15, Fig. 11, disengaging the catches 22 from the ratchet-wheels 24 and bringing the clip to its idle position and permitting the said clip to ride back until arrested by the rolls 18, Fig. 2, the alined sheets 25 passing through the machine in the usual manner.

The ratchet-wheels 24 are in the form of flanges formed upon hubs or rings 27, slipped over the heads 28 of the platen, and secured by screws 29, Fig. 1. The clip-carrying collars 9 are confined between said ratchet-wheels 24 and the ends of the cushion 2<sup>a</sup>, Fig. 13, constituting the printing-surface of the platen.

From the foregoing it will be seen that a sheet will be accurately gaged and alined relative to the writing-line and that even a large number of sheets may be simultaneously squared with the platen and with great facility and accuracy passed between the



platen and the usual or any suitable pressure devices, which instrumentalities will thereafter hold the sheets to the platen in the usual manner, while the leading edges of the sheets are left free without anything to interfere with their usual progress out of the machine.

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

The gage 16 is preferably given a slight lead or advance inclination outwardly from the platen, Fig. 4<sup>a</sup>, so that the outermost sheets of an inserted pack have originally positions in advance of the inner sheets nearest the platen. This compensates for the extra distance traveled by the outer sheets in going around with the platen, so that when the sheets have reached writing positions their leading edges stand even or flush with one another.

The platen is in the form of a cylinder having an uninterrupted printing-surface, and the clip is caused by the rolls 6 7 and other paper-guiding devices to press the paper directly upon or against said printing-surface.

Having thus described my invention, I claim—

1. Sheet-gaging mechanism for type-writing machines, comprising, in combination, sheet-alining means, a platen in operative relation to said alining means and rotatable independently thereof, and means for coupling said platen and alining means to revolve together.

2. Sheet-gaging mechanism for type-writing machines, comprising, in combination, sheet-alining means, a platen in operative relation to said alining means and rotatable independently thereof, and means automatically releasable after a predetermined travel of the platen for coupling said platen and alining means to revolve together.

3. In a type-writing machine and in combination, a revoluble platen having a cylindrical uninterrupted printing-surface, a paper clip extending along said platen, means for normally supporting said clip so as to permit continued revolutions of said platen independently of the clip, means for causing said clip to press the paper directly upon the printing-surface of the platen, and means for connecting the paper-clip to the platen to revolve therewith.

4. In a type-writing machine, the combination with a revoluble platen, and pressure devices coöperating with the platen to feed the paper, of a paper-clip having means to connect it to the platen to revolve therewith, and means for automatically releasing the clip after passing said pressure devices.

5. In a type-writing machine, the combination with a revoluble platen and pressure devices coöperating therewith to feed the paper, of means, connectible to the platen at

will, to introduce the leading edges of the sheets between the platen and the pressure devices, and means for automatically releasing the sheets from the control of said means.

6. In a type-writing machine, the combination with a revoluble platen, and devices for pressing paper against the platen, of a paper-clip, the platen being revoluble independently of the clip, means for connecting the paper-clip to the platen at will, and a spring tending to disconnect said clip from the platen; means being provided for causing said pressure devices to maintain the connection of said clip with the platen.

7. In a type-writing machine and in combination, a revoluble platen having a cylindrical uninterrupted printing-surface, a paper-clip so mounted with respect to said platen as to permit continued revolutions of the platen independently of the clip, means for causing said clip to press the paper directly upon the printing-surface of the platen, means for causing the clip to revolve with the platen, and means for releasing the paper from the clip and the clip from the platen.

8. In a type-writing machine, the combination with a revoluble platen, of a clip mounted so that the platen may be rotated independently of the clip, means to connect the clip to the platen to rotate therewith and cause the clip to grip the paper, and a spring tending to release the clip from the platen and thereby release the paper from the clip.

9. In a type-writing machine and in combination, a revoluble platen having a cylindrical uninterrupted printing-surface, a bar extending along said platen, means for supporting the said bar at its ends to permit continued revolutions of the platen independently of the bar, means operable at the will of the operator for connecting the bar to the platen to revolve therewith, a paper-clip carried by said bar, and means for causing said clip to press the paper directly against the printing-surface of the platen.

10. In a type-writing machine, the combination with a revoluble platen, of a bar extending along the platen and having at its ends collars or hubs whereby it is loosely journaled, concentrically with the platen, so that the platen may rotate independently of the bar, releasable means for connecting the bar to the platen to rotate therewith, and means upon the bar for holding the leading edges of the sheets of paper.

11. In a type-writing machine, the combination with a revoluble platen having ratchet-wheels fixed upon its ends, of a paper-clip device extending along the platen and having means at its ends whereby it is journaled concentrically with the platen, and means upon said paper-clip device for engaging said ratchet-wheels.

12. In a type-writing machine, the combination with a revoluble platen having ratchet-



wheels fixed upon its ends, of a paper-clip device extending along the platen and having means at its ends whereby it is journaled concentrically with the platen, and means upon  
 5 said paper-clip device for engaging said ratchet-wheels, a spring tending constantly to release the paper from the clip and to release the paper-clip from said ratchet-wheels, and pressure devices for holding sheets  
 10 against the platen; said pressure devices operating to hold said clip pressed against the paper, and in engagement with said ratchet-wheels, while the sheets are being drawn by the clip between the pressure devices and the  
 15 platen.

13. In a type-writing machine, the combination with a revoluble platen provided with ratchet-wheels on its ends and having pressure devices to cooperate with the platen to  
 20 feed paper around the same, a bar extending along the platen, collars rigidly connected by said bar and loosely journaled upon the ends of the platen, a paper-clip connected to said bar by a hinge and having projections movable into engagement with said ratchet-  
 25 wheels, and a spring tending to throw said clip away from the platen, release the same, and withdraw said projections from said ratchet-wheel; said clip being constructed to be held against the paper by said paper-feed-  
 30 ing pressure devices.

14. In a type-writing machine, the combination with a revoluble platen provided with ratchet-wheels on its ends and having pressure devices to cooperate with the platen to  
 35 feed paper around the same, a bar extending along the platen, collars rigidly connected by said bar and loosely journaled upon the platen between the ends thereof and the said  
 40 ratchet-wheels, a paper-clip connected to said bar by a hinge and having projections movable into engagement with said ratchet-wheels, and a spring tending to throw said clip away from the platen, release the same,  
 45 and withdraw said projections from said ratchet-wheel; said clip being constructed to be held against the paper by said paper-feeding pressure devices.

15. In a type-writing machine, the combination with a revoluble platen provided with ratchet-wheels on its ends and having pressure devices to cooperate with the platen to  
 50 feed paper around the same, a bar extending along the platen, collars rigidly connected by said bar and loosely journaled upon the ends of the platen, a paper-clip connected to said bar by a hinge and having projections movable into engagement with said ratchet-  
 55 wheels, and a spring tending to throw said clip away from the platen, release the same, and withdraw said projections from said ratchet-wheels; said clip being constructed to be held against the paper by said paper-feeding pressure devices; said clip provided  
 60 with finger-pieces for closing the same.

16. In a type-writing machine, the combination with a revoluble platen provided with ratchet-wheels on its ends and having pressure devices to cooperate with the platen to  
 70 feed paper around the same, a bar extending along the platen, collars rigidly connected by said bar and loosely journaled upon the ends of the platen, a paper-clip connected to said bar by a hinge and having projections movable into engagement with said ratchet-  
 75 wheels, and a spring tending to throw said clip away from the platen, release the same, and withdraw said projections from said ratchet-wheel; said clip being constructed to be held against the paper by said paper-feed-  
 80 ing pressure devices and having tongue-like extensions to prolong the time during which the clip is held closed by said paper-feeding pressure devices.

17. In a type-writing machine, the combination with a revoluble platen, of a paper-clip extending along the platen and mounted  
 85 so that the platen may revolve independently of the clip, releasable means for connecting the clip to the platen to revolve  
 90 therewith, and means upon the platen-frame in the path of said paper-clip to prevent the same from rotating with the platen when the clip is not in use.

18. In a type-writing machine and in combination, a revoluble platen having a cylindrical uninterrupted printing-surface, a paper-clip extending along said platen, means  
 95 for normally supporting said clip so as to permit continued revolutions of said platen independently of the clip, releasable means for connecting the clip to the platen to revolve  
 100 therewith, means to hold the clip in partially-open position during the introduction of the paper between the said clip and platen,  
 105 and means to cause the clip to press the paper directly upon the printing-surface of the platen.

19. In a type-writing machine having a platen-frame and a platen revolubly mounted  
 110 therein, the combination of collars or journals loosely mounted upon the ends of the platen, a clip extending along the platen and connected by hinges to said collars, a spring to hold said clip open, and means co-  
 115 operating with the spring to hold said clip in a position substantially radial of the platen, stops upon the platen-frame normally engaging said open clip to prevent the same from rotating with the platen, and means rendered  
 120 effective by a closing movement of the clip to connect the same with the platen to rotate therewith.

20. In a type-writing machine having a platen-frame and a platen revolubly mounted  
 125 therein, the combination of collars or journals loosely mounted upon the ends of the platen, a clip extending along the platen and connected by hinges to said collars, a spring to hold said clip in a position substantially radial of the  
 130



platen, stops upon the platen-frame normally engaging said open clip to prevent the same from rotating with the platen, and means rendered effective by a closing movement of the clip to connect the same with the platen to rotate therewith; said stops being in rear of the platen, so that said clip normally lies open in a level position behind the platen but above the entrance for paper.

21. In a type-writing machine having a platen-frame and a platen revolubly mounted therein, the combination of collars or journals loosely mounted upon the ends of the platen, a clip extending along the platen and connected by hinges to said collars, a spring to hold said clip open, and means cooperating with the spring to hold said clip in a position substantially radial of the platen, stops upon the platen-frame normally engaging said open clip to prevent the same from rotating the platen, and means rendered effective by a closing movement of the clip to connect the same with the platen to rotate therewith; said stops being in rear of the platen, so that said clip normally lies open in a level position behind the platen but above the entrance for paper; said stops being at such a distance from the rear side of the platen as to hold the paper-clip partly open for the introduction of sheets when the clip is rotated down to a position between the stops and the platen.

22. In a type-writing machine having a platen-frame, and a platen revolubly mounted therein, the combination of collars or journals loosely mounted upon the ends of the platen, a clip extending along the platen and connected by hinges to said collars, a spring to hold said clip open, and means cooperating with the spring to hold said clip in a position substantially radial of the platen, stops upon the platen-frame normally engaging said open clip to prevent the same from rotating with the platen, and means rendered effective by a closing movement of the clip to connect the same with the platen to rotate therewith; said stops being in rear of the platen, so that said clip normally lies open in a level position behind the platen but above the entrance for paper; said stops being at such a distance from the rear side of the platen as to hold the paper-clip partly open for the introduction of sheets when the clip is rotated down to a position between the stops and the platen; said stops being in the form of rolls, finger-pieces being provided upon the ends of the paper-clip for manipulating the same, and said rolls being adapted to engage said finger-pieces to hold the clip partly open as aforesaid.

23. In a type-writing machine, the combi-

nation with a revoluble platen, of a paper-clip extending along the platen and so mounted that the platen may revolve independently of the clip, and releasable means for connecting the clip to the platen, to revolve therewith; said clip having a gage for the leading edge of the paper.

24. In a type-writing machine, the combination with a revoluble platen, of a paper-clip extending along the platen and so mounted that the platen may revolve independently of the clip, and releasable means for connecting the clip to the platen, to revolve therewith; said clip in the form of a strip of sheet metal bent in along one edge to form a ledge to serve as a gage for the leading edge of the paper sheet.

25. In a type-writing machine, the combination with a revoluble platen, of a pair of collars loosely mounted upon the ends of the platen, a bar extending along the platen from one collar to the other and having ears whereby it is rigidly attached to said collars, said bar being beveled to facilitate entrance between the platen and the pressure-rolls running thereon, a paper-clip lying alongside of said bar close to the platen and connected by hinges to said collars, and releasable means for connecting said collars to the platen to rotate therewith.

26. Sheet-gaging mechanism for type-writing machines, comprising, in combination, a revoluble platen, sheet-alining means loosely mounted on said platen, and means for coupling said platen and alining means to revolve together.

27. Sheet-gaging mechanism for type-writing machines, comprising, in combination, a revoluble platen, automatically-releasable sheet-alining means loosely mounted thereon, said alining means being manipulable to engage said platen and revolve therewith.

28. Sheet-gaging mechanism for type-writing machines, comprising, in combination, a revoluble platen, sheet-alining means loosely mounted on said platen and normally disconnected therefrom, said alining means being manipulable to lock it to said platen.

29. Sheet-gaging mechanism for type-writing machines, comprising, in combination, a revoluble platen, sheet-alining means loosely mounted on said platen and normally disconnected therefrom, said alining means being manipulable to lock it to said platen and being automatically releasable after a predetermined travel of said platen.

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