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PATENTED MAR. 10, 1908.

B. F. HUTCHES, JR.

PAPER FEED ATTACHMENT FOR TYPE WRITERS.

APPLICATION FILED MAY 8, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

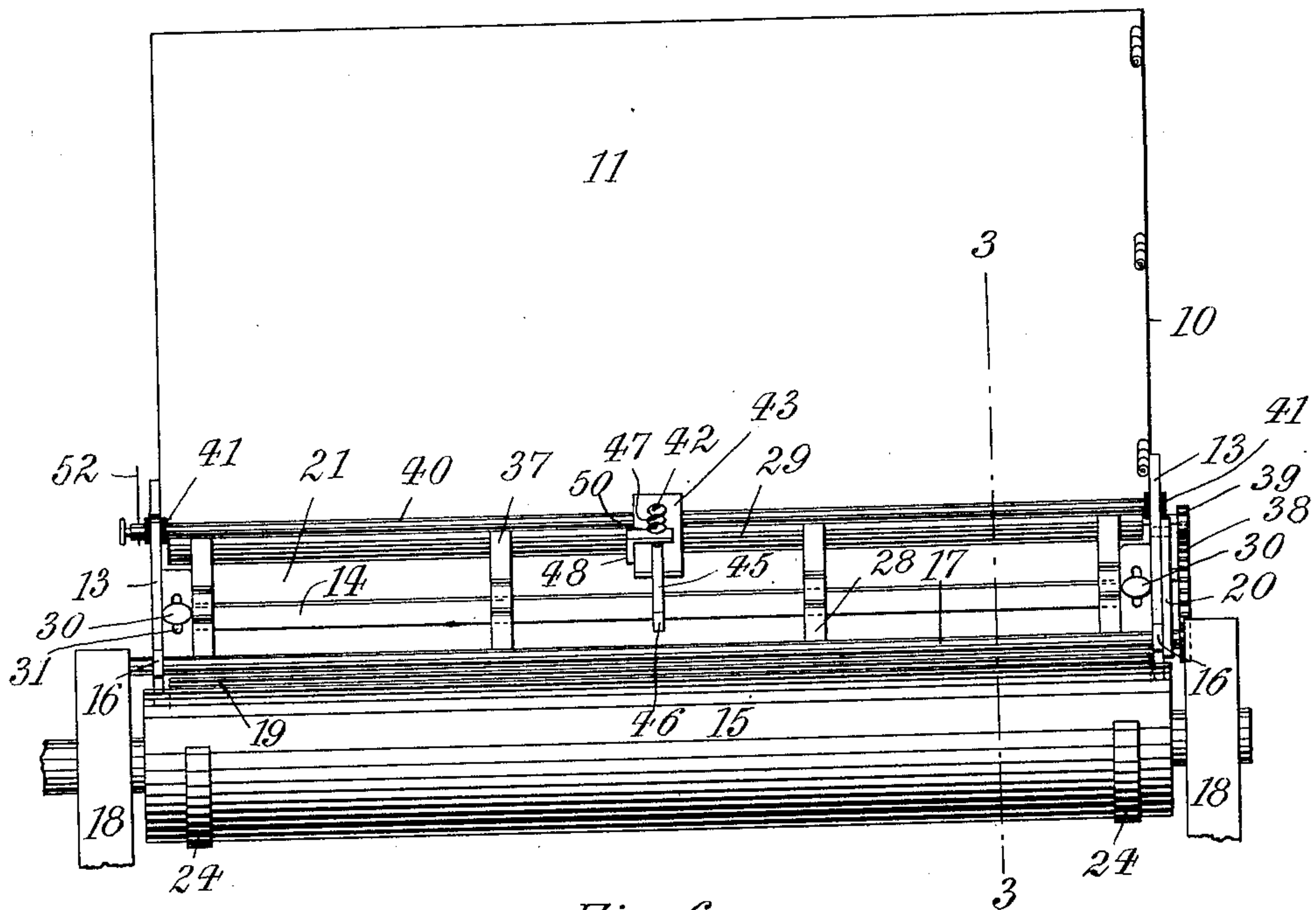


Fig. 6.

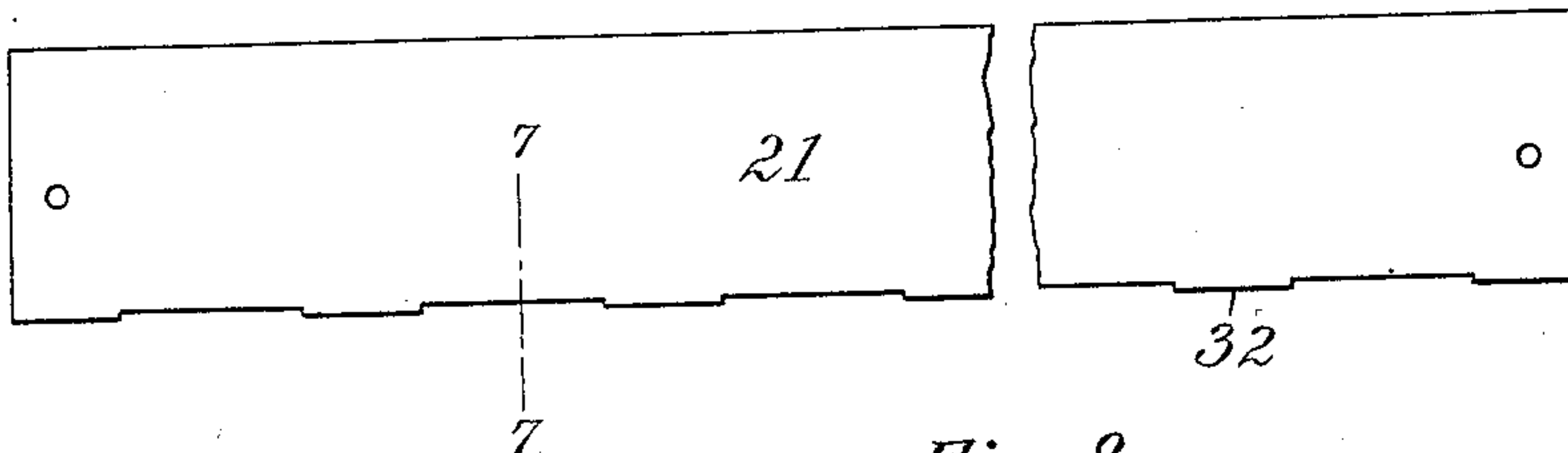


Fig. 7.

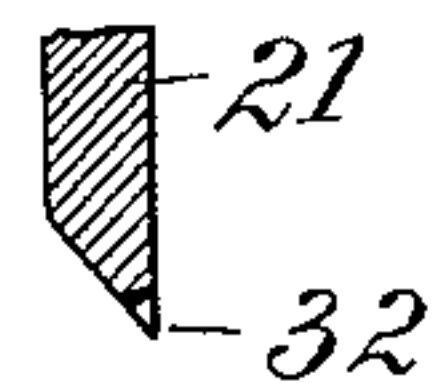
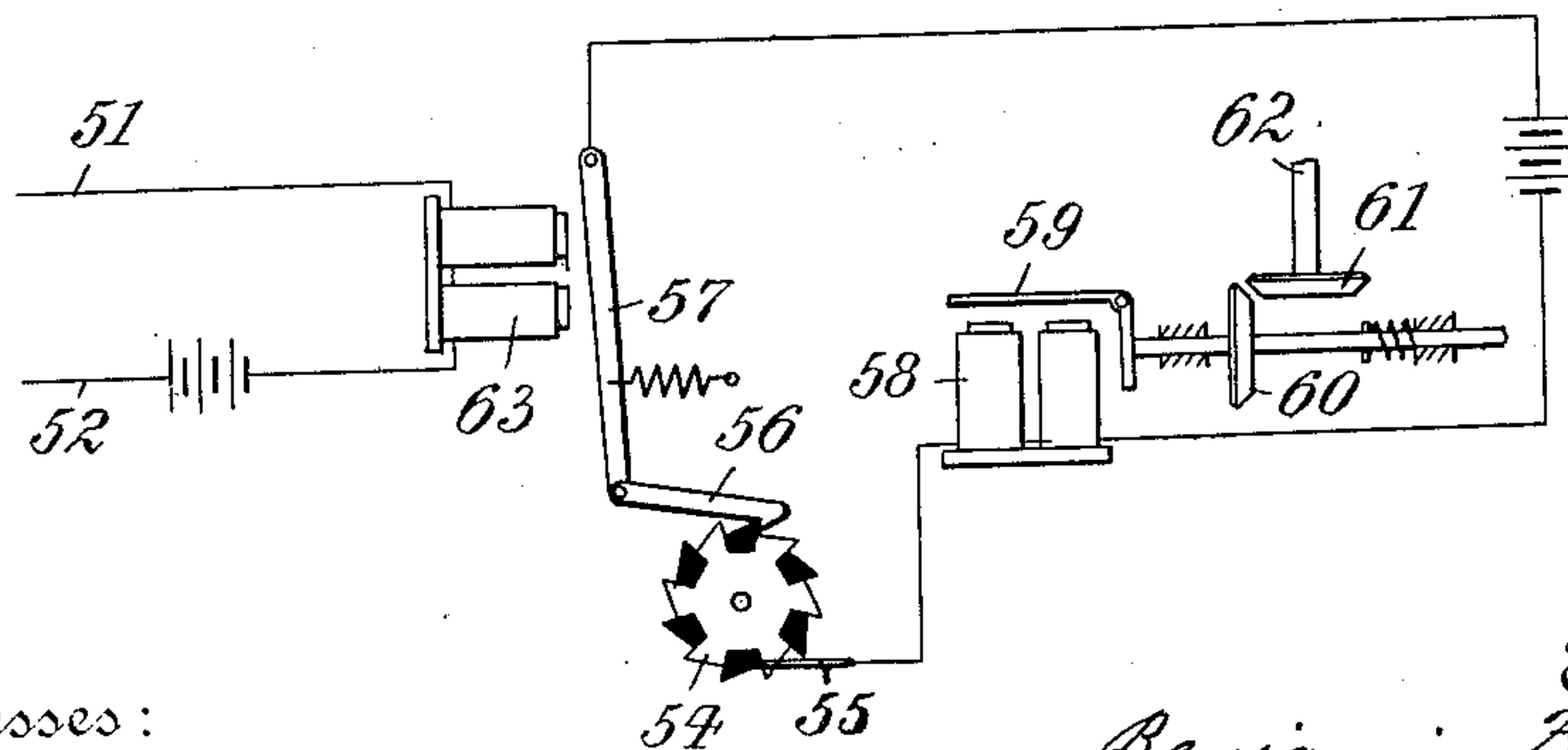


Fig. 8.



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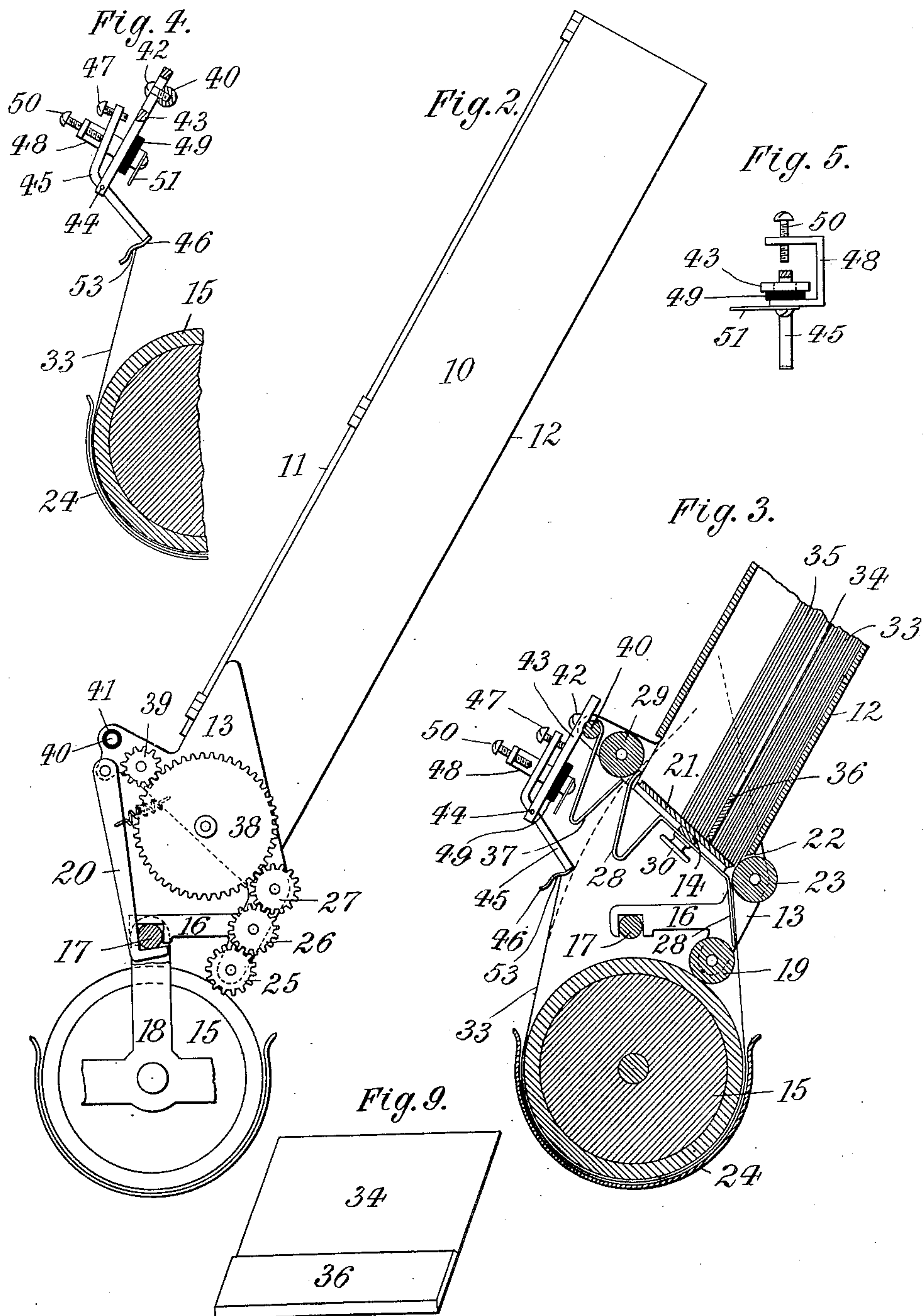
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PAPER FEED ATTACHMENT FOR TYPE WRITERS.

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2 SHEETS—SHEET 2.



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PAPER-FEED ATTACHMENT FOR TYPE-WRITERS.

No. 881,126.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed May 8, 1907. Serial No. 372,610.

To all whom it may concern:

Be it known that I, BENJAMIN F. HUTCHES, Jr., a citizen of the United States, residing at Ridgewood, Bergen county, State of New Jersey, have invented new and useful Improvements in Paper-Feed Attachments for Type-Writers, of which the following is a specification.

This invention relates to an attachment for type-writers, by which a blank sheet is conveyed from a magazine to the type-writer platen, while the previously written sheet is simultaneously removed. The written sheets thus removed are stacked, preferably, in the same magazine from which the blank sheets are being withdrawn, so that compactness is insured, all handling of the sheets is avoided, and time is economized.

The invention further comprises automatic means for arresting the paper feed in automatically operated type-writers as soon as the sheet has assumed a position for writing the head-line thereon, so that such head-line will be properly spaced from the top of the sheet.

In the accompanying drawings: Figure 1 is a front elevation of my improved paper feed attachment, showing it coupled to a type-writer platen; Fig. 2 an end view thereof, on a larger scale; Fig. 3 an enlarged section on line 3—3, Fig. 1; Fig. 4 a similar section with some of the parts omitted, and showing the circuit closer in a different position; Fig. 5 a detail of the circuit closer; Fig. 6 a detail of the paper support; Fig. 7 an enlarged section on line 7—7, Fig. 6; Fig. 8 a diagram illustrating the circuit, and Fig. 9 a detail of the sheet separator.

The paper magazine consists of a box 10 having a cover 11 and adapted to be so connected to a type-writer that its bottom 12 assumes an inclined position with relation thereto. To the lower end of box 10 is secured a frame 13 consisting of a pair of side pieces which may be connected by a longitudinal bar 14. The frame is provided with suitable means for pivotally coupling it to the carriage 18 of the type-writer. As shown, hooks 16, formed integral with the frame 13, grasp a bar 17 of the type-writer carriage 18, so that the frame is detachably pivoted to the carriage, while a friction roller 19, journaled in said frame, rests upon platen 15; roller 19 and platen 15 being of substantially the same length. By the means described,

the magazine is free to adjust itself on the pivot 17, until its roller 19 finds a bearing on platen 15, so that in this way the magazine will automatically adjust itself, by its own weight, to assume a proper operative position with relation to the type-writer.

In order to prevent accidental displacement, one of the hooks 16 may cooperate with a spring-influenced counter-hook 20. It is obvious that the above means for coupling the magazine to the type-writer may be varied and adapted to the special style of type-writer used.

At its lower end magazine 10 is provided with a support 21 against which the sheets contained within the magazine abut. A slot 22 between bottom 12 and support 21 permits the egress of the blank sheets, while the ingress of the written sheets takes place over the top of such support. Opposite egress slot 22 there is journaled in frame 13 a feed roller 23 which draws the bottom sheet out of magazine 10 towards platen 15, to which it is held by the usual curved guards 24 of the type-writer. Feed roller 23 is rotated from platen 15 by friction roller 19, which is intergeared with the feed roller by wheels 25, 26, 27. In this way the paper feed is actuated without in any way changing or modifying the construction of the type-writer itself. To bar 14 are secured a number of springs 28, the lower ends of which hold the blank sheet off friction roller 19 and guide it towards platen 15. The upper bent ends of springs 28 are adapted to press the written sheet against the return roller 29, hereinafter referred to.

In order to set the device to sheets of different thickness, support 21 is adjustably secured to frame 13 by set screws 30 that pass through slots 31 of the frame, and are tapped into support 21. Thus, by raising or lowering the support, its distance from feed roller 23 may be adjusted to conform to the thickness of the paper. At its lower edge 32, support 21 is preferably beveled and notched to decrease the friction between such support and the paper.

The stack of blank sheets 33 is placed upon the bottom 12 of magazine 10. Upon this stack is supported a loose separator or partition 34, above which the written sheets accumulate. Separator 34 is weighted at its lower end, as at 36, to here exert a greater pressure upon paper 33 and thus insure an

engagement between the latter and feed roller 23.

With type-writers in which the paper is introduced by rotating the platen by hand, each written sheet passes from the platen directly to return roller 29 which is journaled in frame 13 at a distance above the top of support 21. The bent upper ends of springs 28 co-acting with opposed similarly bent springs 37, form a resilient guide that directs the written sheets to roller 29. The latter is rotated from wheel 27, by wheels 38 and 39, and is so intergeared that it will travel slightly faster than the platen, so as to prevent sagging. Roller 29 delivers the written paper into magazine 10 and stacks it upon separator 34.

If the attachment is used on type-writers in which the platen is turned automatically, for the purpose of introducing a new sheet, means must be provided for automatically arresting such sheet after the latter has been placed in position for writing the top line. These means consist of a circuit closer which is adapted to be engaged by the upper edge of blank sheet 33 and arrests the platen as soon as such engagement has taken place.

The circuit closer is shown to be of the following construction: In frame 13 is mounted a rod 40 insulated as at 41. At or about the center of this rod there is adjustably secured thereto, by clamp-screw 42, a plate or slide 43, to which is pivoted at 44, a bent lever 45. The lower arm of this lever carries a recessed abutment 46 adapted to be engaged by the upper edge of sheet 33. The upper arm of lever 45 carries a set-screw 47 which, by striking plate 43, controls the play of the lever. To plate 43 is secured a frame 48 insulated therefrom as at 49 and carrying a contact-screw 50 against which lever 45 may be tilted. To frame 48 is connected a wire 51 of an electric circuit, the second wire 52 of which is connected to rod 40.

Plate 43 and set-screw 47 are so adjusted with relation to platen 15 and guard 24, that sheet 33, while being fed forward by the platen, will enter with its upper edge the recess 53 formed in abutment 46, (Fig. 3). In this way lever 45 will be tilted from the position shown in Fig. 3, into that shown in Fig. 4, to contact with screw 50, and thereby close the circuit which arrests the platen. By setting plate 43 at different elevations, the size of the blank heading space on each sheet may be varied, and is thus under the control of the operator.

The means for arresting the platen by the closing of the circuit may be of any construction desired, and do not form part of this invention.

As shown in Fig. 8, a ratchet wheel 54, is provided with alternate conducting and non-conducting teeth, a pair of diametrically opposite teeth being engaged respectively by

a sliding contact 55 and the pawl 56 of an armature 57. During the feeding operation, contact 55 and pawl 56 engage conducting teeth of ratchet 54 and thereby close a circuit which energizes an electro-magnet 58. The armature 59 being thus attracted will bring wheel 60 that actuates the platen into engagement with wheel 61 of power-shaft 62. When the advancing paper 33 closes the circuit of wires 51, 52, electro-magnet 63 will be energized to attract armature 57, which, by pawl 56, will so turn ratchet wheel 54, that said pawl and contact 55 will engage non-conducting teeth of the ratchet wheel. In this way the current flowing through electro-magnet 58 will be interrupted to release armature 59 and thereby disengage wheel 60 from wheel 61, so that the platen is arrested and the paper feed stopped. The writing is now performed, and after being completed, a circuit is closed by the record that energizes electro-magnet 63 and thereby turns ratchet wheel 54, to again start the paper feed.

It will be seen that by my invention the sheets are, by the rotation of the platen, automatically positioned for the writing operation and that the written sheets are simultaneously removed, so that a substantial saving in time is effected. Furthermore, the written sheets may be stacked in the same magazine that contains the blank sheets, so that simplicity is insured, while a complete separation between the written and unwritten sheets will always take place. Finally, the attachment may be adapted to type-writers of various constructions, and when so adapted, may be operatively coupled thereto without adding anything to the mechanism of the type-writer itself, or, in any way, changing the construction of such type-writer.

I claim:

1. A device of the character described, comprising a magazine having an egress opening and an ingress opening, means for withdrawing blank sheets from the magazine through the egress opening, and means for simultaneously returning written sheets thereto through the ingress opening, substantially as specified.

2. A device of the character described, comprising a magazine having a paper support, an egress opening below said support, an ingress opening above said support, means for withdrawing blank sheets from the magazine through the egress opening, and means for simultaneously returning written sheets to said magazine through the ingress opening, substantially as specified.

3. A device of the character described, comprising a magazine, a friction roller journaled thereto and adapted to contact with the type-writer platen, and means controlled by said roller for feeding sheets to the platen

and for withdrawing sheets therefrom, substantially as specified.

4. A device of the character described, comprising a magazine, a feed roller, a return roller, a friction roller adapted to contact with a type-writer platen, and means for operatively connecting the friction roller to the feed roller and to the return roller, substantially as specified.

10 5. A device of the character described, comprising a magazine, means for coupling said magazine to a type-writer carriage, a friction roller adapted to engage the type-writer platen, and means actuated by said roller for feeding blank sheets to said platen and withdrawing written sheets from said platen, substantially as specified.

20 6. A device of the character described, comprising a magazine, a friction roller journaled therein and adapted to contact with the type-writer platen, a return roller also journaled in the magazine, means for operatively connecting the return roller to the friction roller, and means for guiding a sheet of paper from the platen towards said return roller, substantially as specified.

25 7. A device of the character described, comprising a platen adapted to engage a sheet, means for rotating the platen, and means controlled by said sheet for arresting the platen, substantially as specified.

30 8. A device of the character described, comprising a platen adapted to engage a sheet, electric means for rotating the platen, and means controlled by said sheet for arresting the platen, substantially as specified.

9. A device of the character described, comprising a magazine, a paper feed roller,

a friction roller operatively connected thereto and adapted to engage a type-writer platen, and means controlled by the forward edge of the paper for arresting said platen, substantially as specified.

10. A device of the character described, comprising a magazine, an abutment movably carried thereby and adapted to be engaged by a sheet, and means controlled by said abutment for arresting a type-writer platen, substantially as specified.

11. A device of the character described, comprising a magazine, a recessed abutment movably carried thereby and adapted to be engaged by a sheet, and means controlled by said abutment for arresting a type-writer platen, substantially as specified.

12. A device of the character described, comprising a magazine, a lever carried thereby, an abutment on the lever adapted to be engaged by a sheet, and means controlled by said lever for closing an electric circuit and arresting a type-writer platen, substantially as specified.

13. A device of the character described, comprising a magazine, a lever adjustably secured thereto, an abutment on the lever adapted to be engaged by a sheet, and means controlled by said lever for closing an electric circuit and arresting a type-writer platen, substantially as specified.

Signed by me at New York city, (Manhattan,) N. Y., this 7th day of May, 1907.

BENJAMIN F. HUTCHES, JR.

Witnesses:

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WILLIAM R. SCHULZ.