

H. T. FODDRILL.  
TYPE WRITING MACHINE.  
APPLICATION FILED MAY 14, 1908.

990,481.

Patented Apr. 25, 1911.

3 SHEETS—SHEET 1.

Fig. 1.

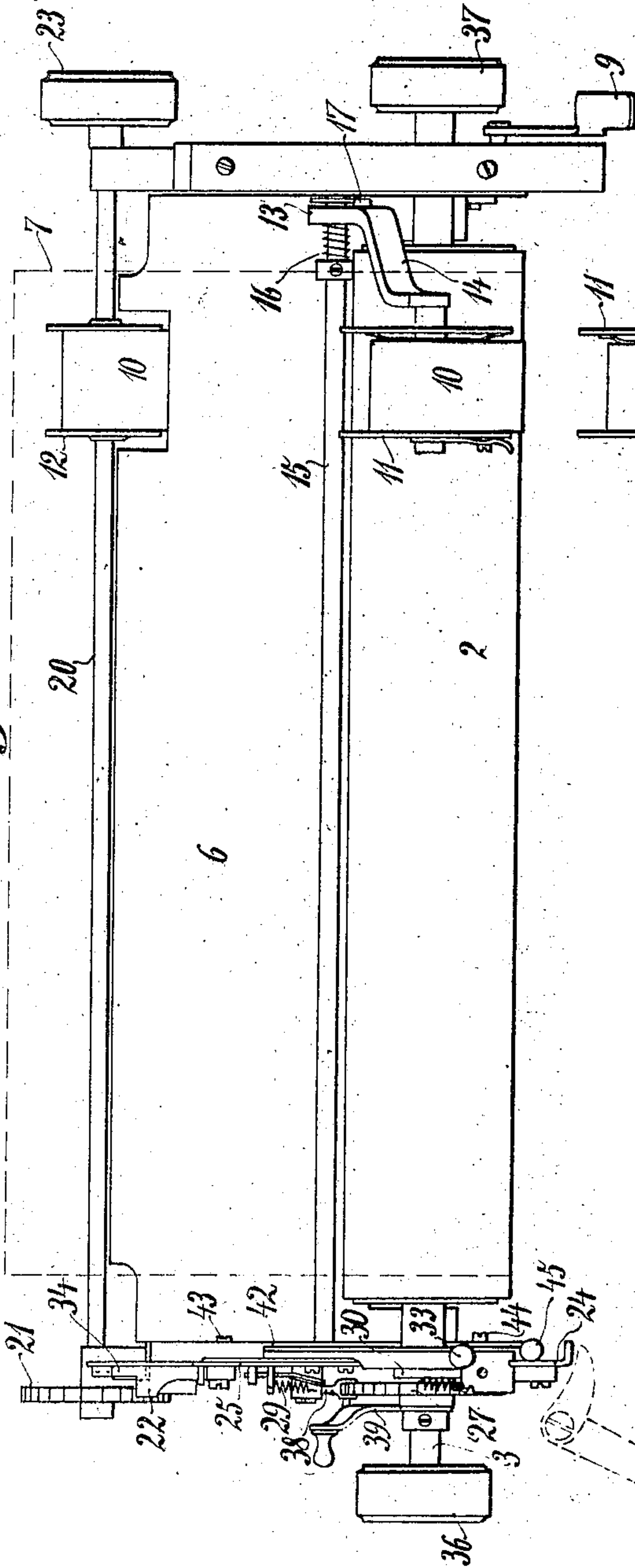
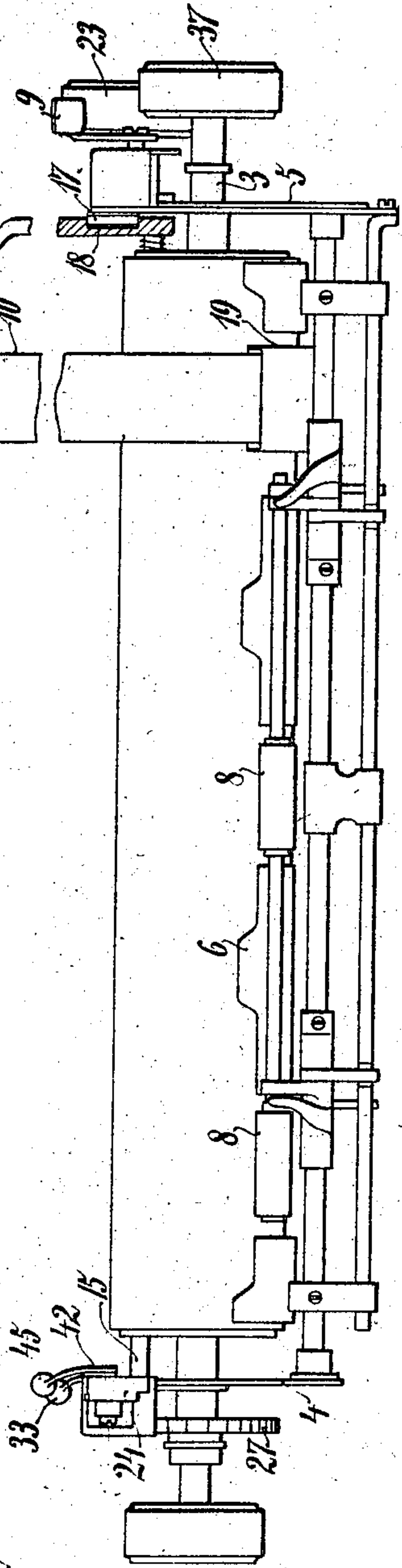


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

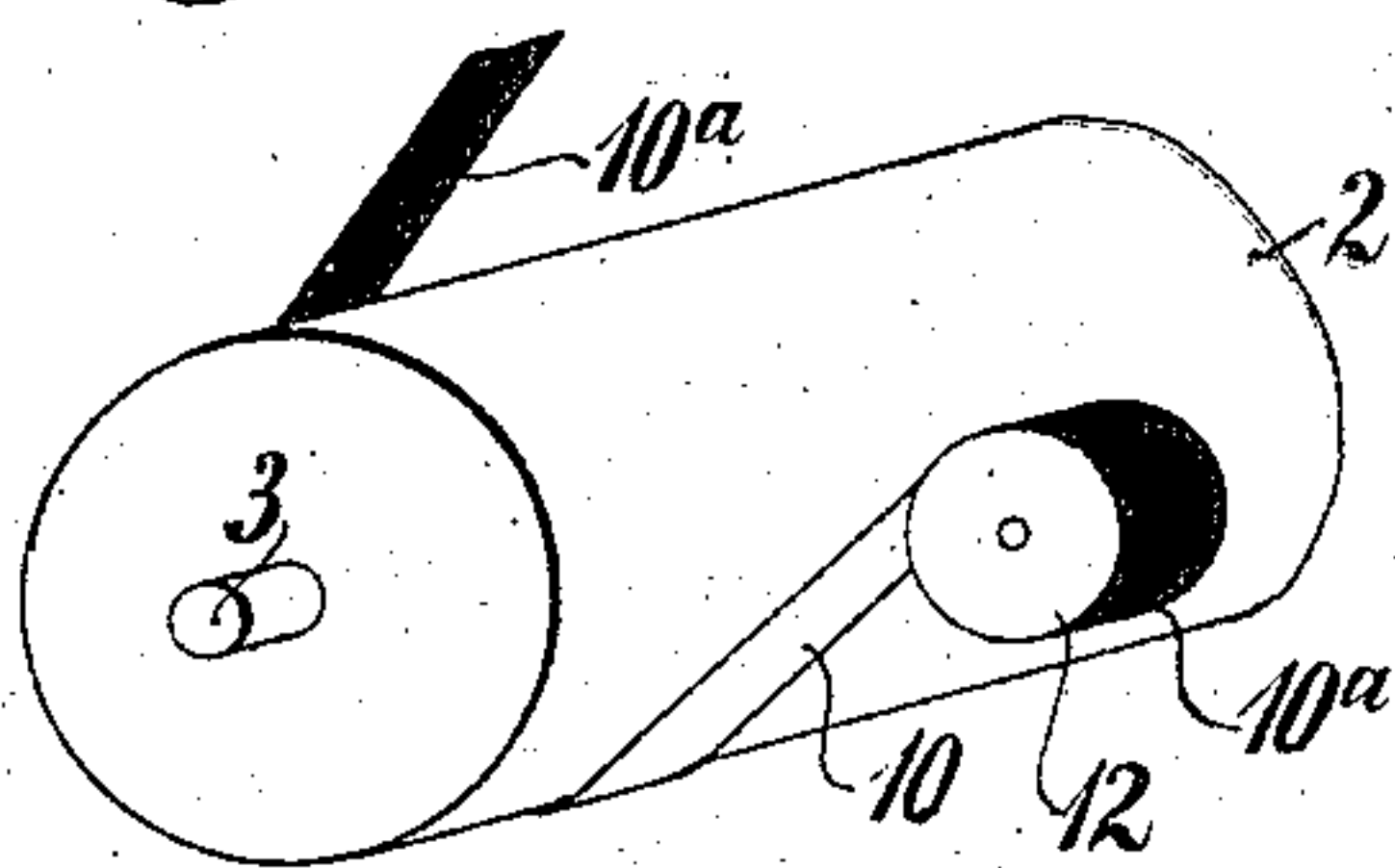


Fig. 4.

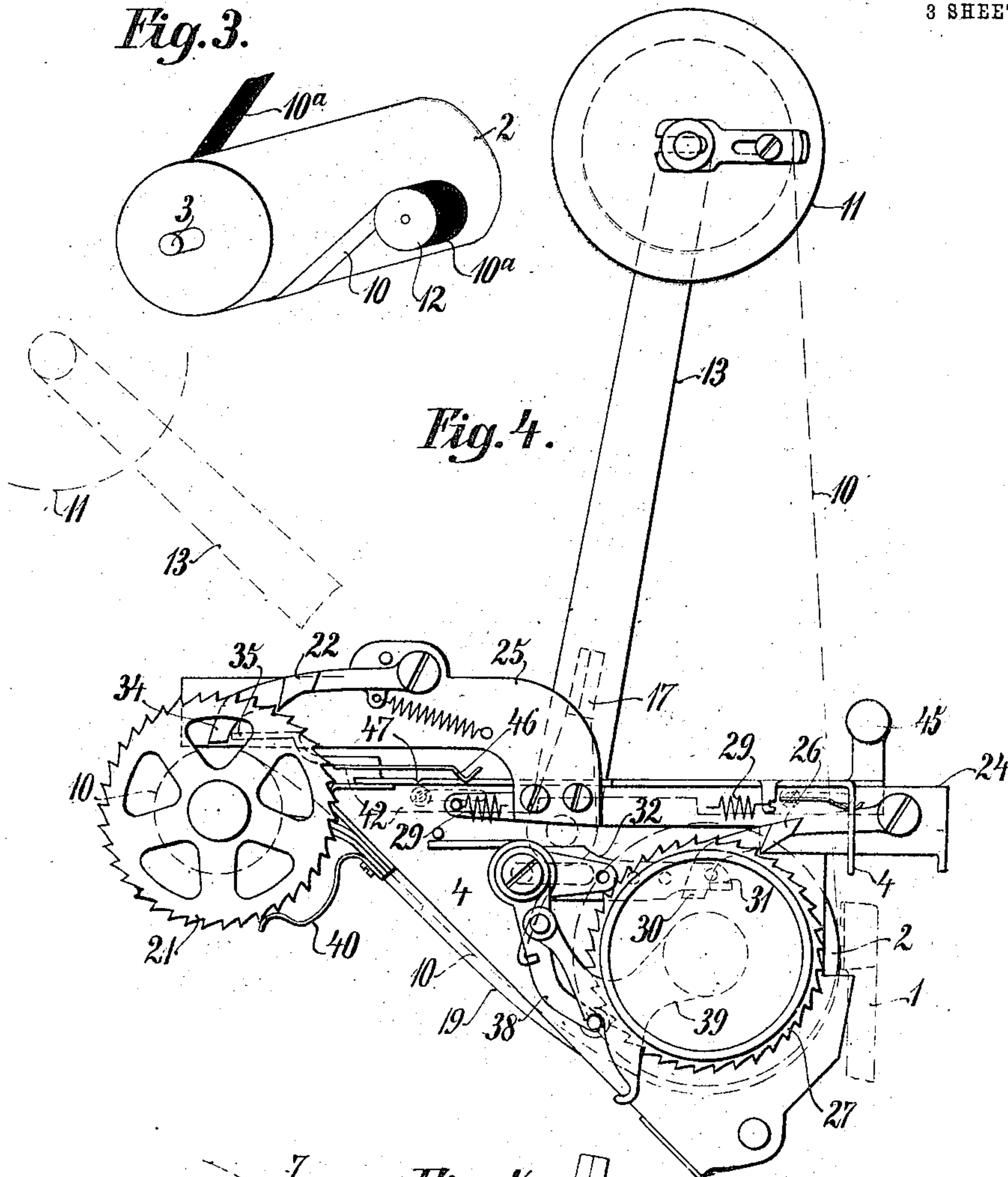
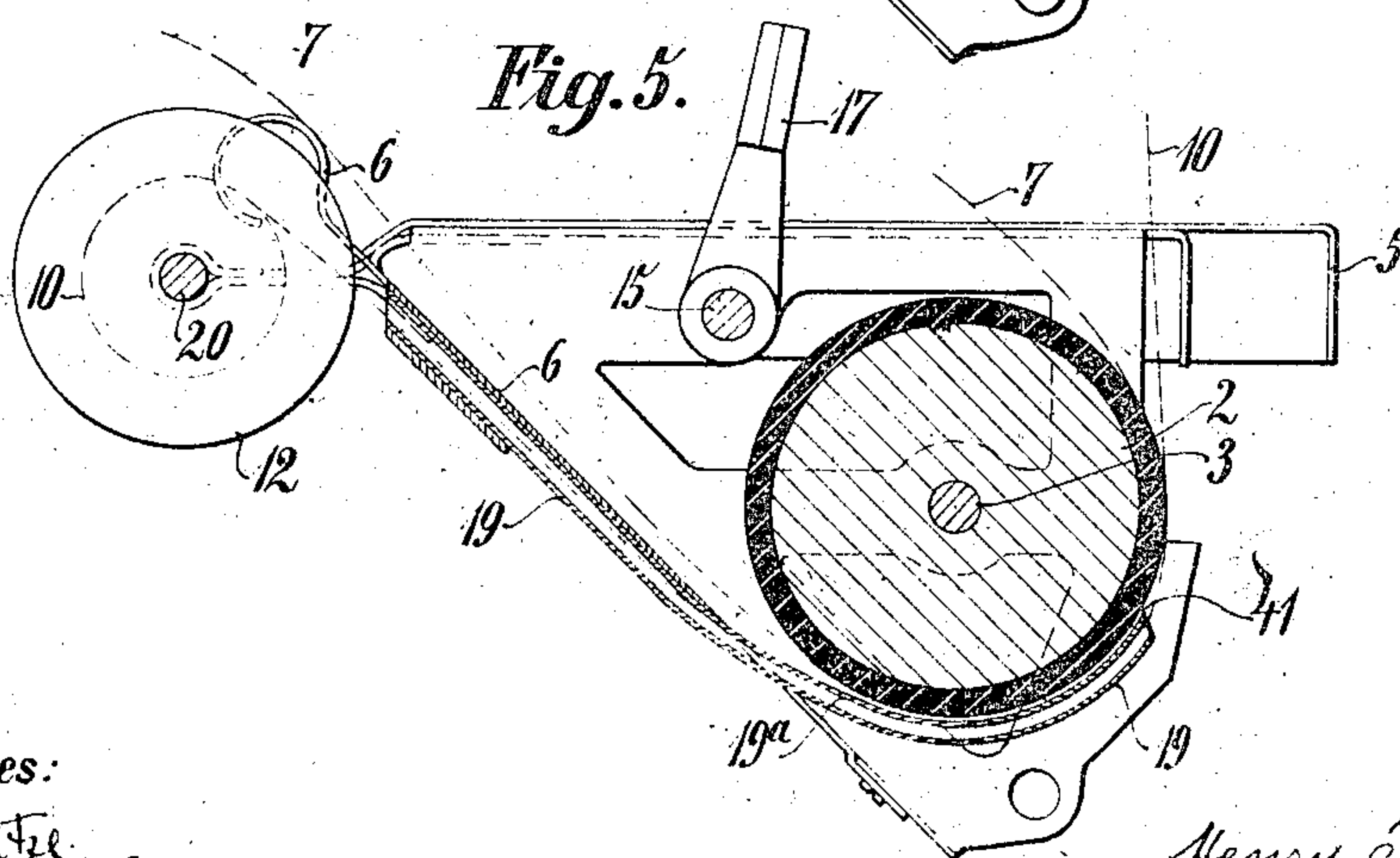


Fig. 5.



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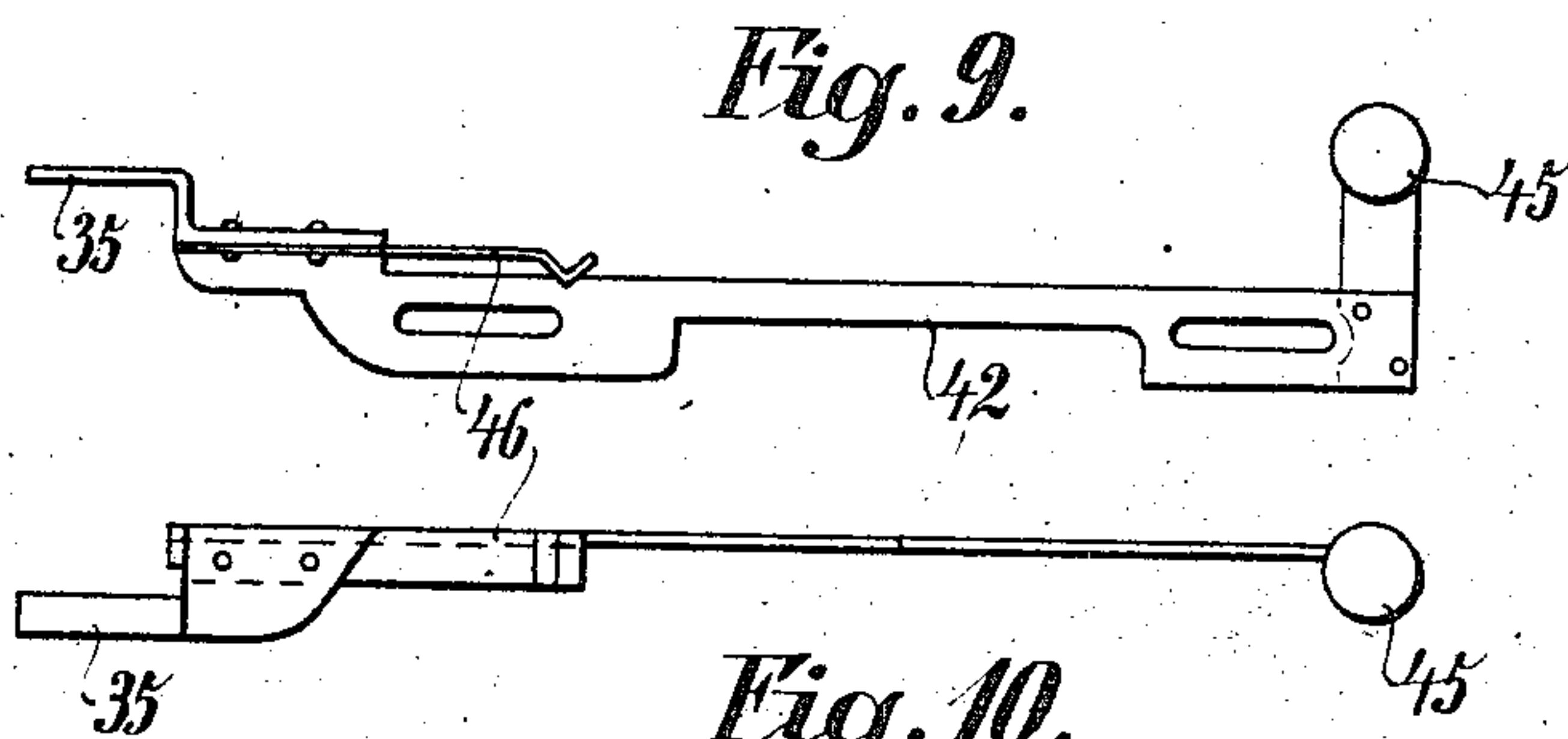
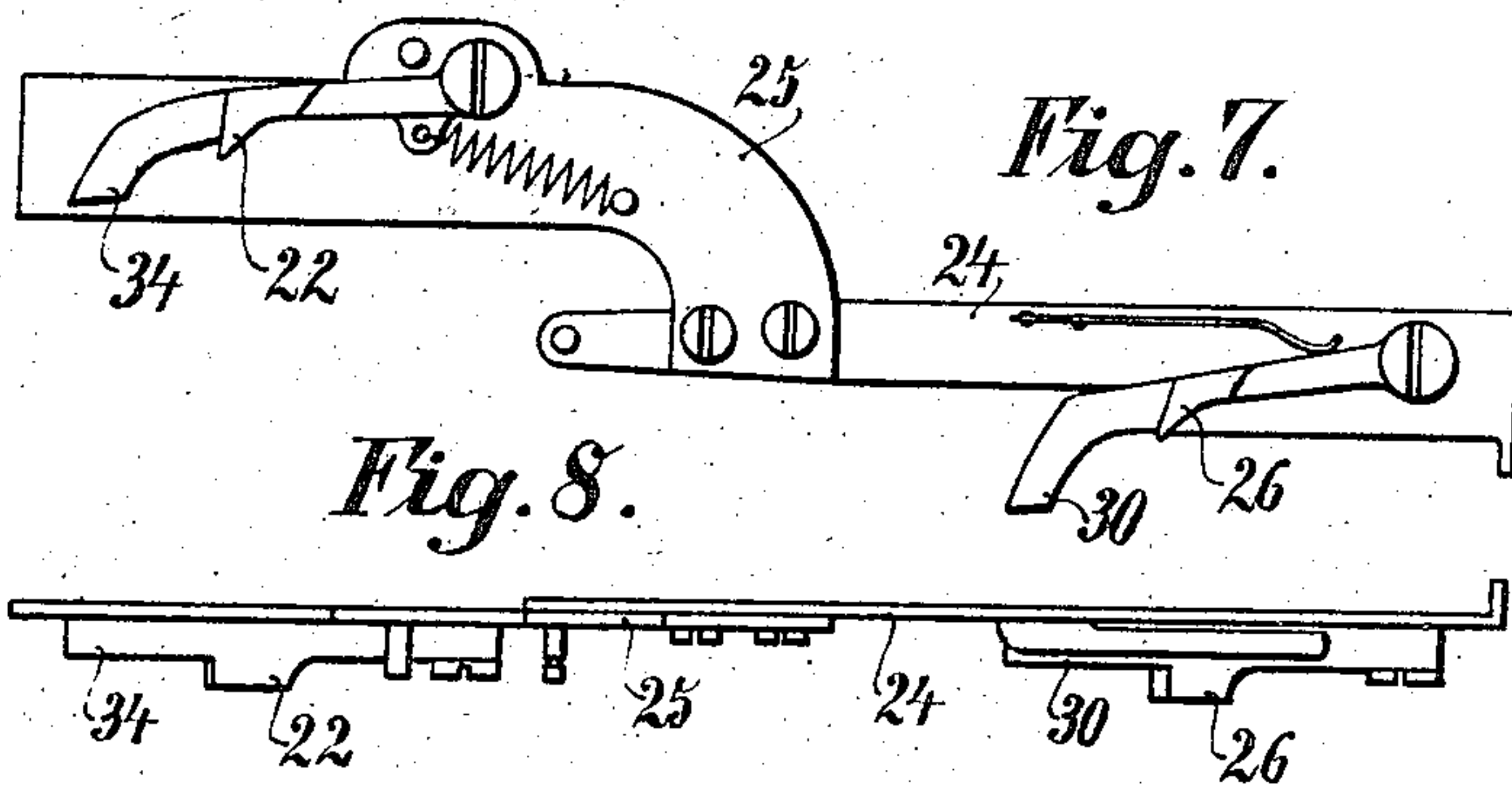
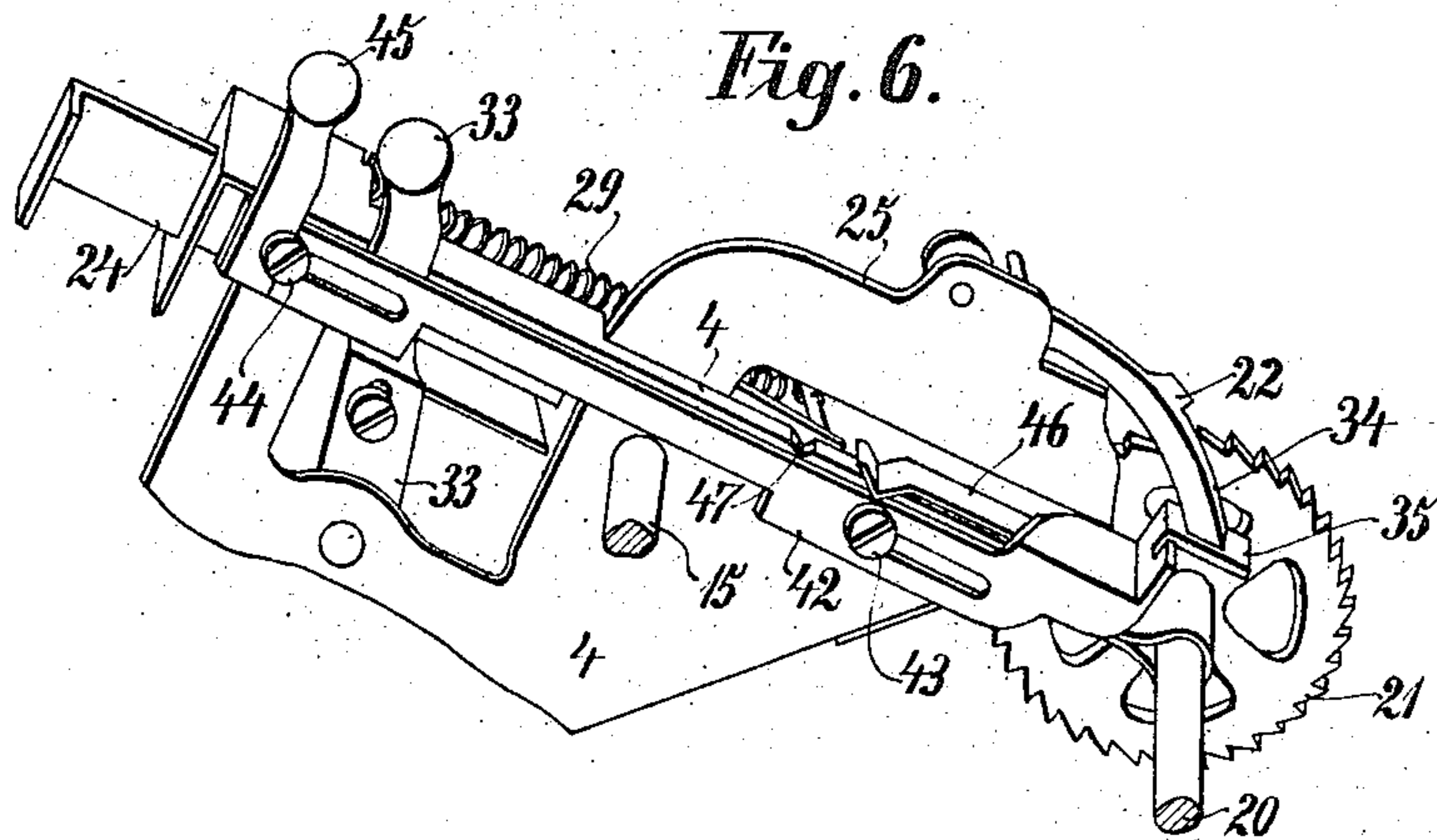
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

HENRY T. FODDRILL, OF ATLANTA, GEORGIA, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## TYPE-WRITING MACHINE.

990,481.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed May 14, 1908. Serial No. 432,775.

*To all whom it may concern:*

Be it known that I, HENRY T. FODDRILL, a citizen of the United States, residing in Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the paper feeding and controlling devices of typewriting machines, and particularly to tally strips and means for writing and feeding the same in conjunction with bills or main sheets.

The principal object of the invention is to provide simplified, inexpensive, compact and easily manipulable means for preserving upon a tally strip a record of the amounts of items to be billed.

In the preferred manner of carrying out the present improvements, the bill or main sheet is introduced into the machine, and occupies a position between the tally strip and the platen. The items are written by the types upon the bill, and the amounts are written upon the tally strip, the latter being coated with carbon on the side next to the platen or the bill, so that a carbon copy of the amount is made upon the bill. Thus by means of only a single pair of spools to carry the tally strip, provision is made whereby both the strip and the bill may show the written amounts, and liability of error is avoided in transcribing the amount onto the tally strip after it has been written upon the bill. A further advantage of course is the saving of time in avoiding the necessity of writing each amount twice, namely, once upon the bill and once upon the tally strip.

The line spacing of the tally strip is preferably effected by the same lever that line spaces the usual platen; and for this purpose, the strip winding spool is provided with a ratchet wheel; and an extra pawl, for operating said wheel, is mounted upon the slide which carries the usual platen-rotating pawl. A movement of said slide, effected by the usual line spacing lever, therefore rotates the platen and the strip-winding spool simultaneously. The strip-winding spool may however be silenced at will to permit line-feeding of the platen while the strip remains stationary. The strip-winding spool is also revoluble independently of the platen

to carry the strip around the platen while the latter remains stationary.

The strip-winding spool is located back of the platen, and draws the strip in a direction opposite to the direction of the line-spacing movement of the platen. The strip is carried up back of the usual paper shelf to the winding spool, so that the bills may readily be introduced between the paper shelf and the platen in the usual manner. The right hand border of the bill underlies the tally strip. I also provide a tubular guide for the tally strip around the under side of the platen and back to the winding-spool, to avoid injury to the strip, and also to avoid liability of smudging the bills from the carbon or lamp black on the tally strip.

Other features and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 is a plan of a platen frame of an Underwood front strike writing machine with my improvements applied thereto. Fig. 2 is an elevation thereof. Fig. 3 is a perspective view illustrating the manner in which the tally strip is looped around the platen. Fig. 4 is an elevation of the left hand end of the platen frame and mechanism seen at Figs. 1 and 2. Fig. 5 is a section taken transversely through the platen and longitudinally through the strip guiding tube. Fig. 6 is a perspective part-sectional view illustrating the mechanism or line-spacing of the tally strip. Fig. 7 is an elevation and Fig. 8 is a plan of a lever-operated slide, carrying pawls for line-spacing both the platen and the tally strip. Fig. 9 is an elevation and Fig. 10 a plan of a shiftable slide for silencing the tally strip during the line-spacing of the platen.

Type bars 1 strike upon the front side of a platen 2, which is revolubly mounted by means of an axle 3 in a platen frame comprising ends 4, 5, and having a paper shelf 6, which extends from end to end of the platen frame behind the platen and inclines downwardly and forwardly to the lower side of the platen. A bill or main sheet 7 may be introduced in the usual manner and fed forwardly around the platen by the usual pressure rolls 8, the latter provided with the usual release key 9.

A tally strip 10 is carried down from a delivery spool 11, and looped around the



platen, and led upwardly and backwardly to a winding spool 12. The strip is coated with carbon 10<sup>a</sup>, Fig. 3, only on the side which is next to the platen. It is led from the platen behind the paper shelf 6, so that the bill 7 may readily be introduced between the shelf and the platen, with the spool 12 back of the sheet 7. The latter in emerging from the machine passes rearwardly over the platen and beneath the spool 11, the spool being carried upon an upstanding arm 13, which is offset, as at 14, from the spool to afford a passage for the out-going sheet 7. When the arm 13 is out of use, it may be turned to the dotted line position, at Fig. 4, to carry the spool 11 out of the way back of the paper shelf. The arm is pivoted upon a rod 15 provided in the platen frame, and is pressed by a spring 16 against a detent 17 fixed upon the platen frame and fitting in a recess 18 in the arm to hold it yieldingly in working position seen in full lines, Fig. 4.

The tally strip 10 passes down from the delivery spool around the front side of the platen, and thence back through a guide in the form of a wide flat tube 19, which curves down around the front side of the platen, and backwardly beneath the same, and is directed thence up toward the winding-spool 12. The upper side 19<sup>a</sup> of the tube forms an apron over which the strip travels. Said tube is preferably secured to the rear side of the paper shelf, as seen best at Fig. 5.

The strip-winding mechanism includes, in addition to the spool 12, a shaft 20 upon which the spool is mounted, a ratchet wheel 21 mounted upon said shaft, and a pawl 22 to turn the ratchet wheel. The pawl is normally out of engagement with the ratchet wheel, so that the spool may be turned at any time by means of a hand wheel 23 fixed upon the same end of the shaft as the spool 12; said shaft extending the entire length of the platen frame, and journaled in the ends thereof, and carrying the ratchet wheel 21 upon the end opposite from the hand wheel 23.

The pawl 22 is carried upon the same slide 24 (or an extension 25 thereof) that carries the usual pawl 26 to drive the usual platen ratchet wheel 27; so that when the usual handle 28 is moved to the left, Fig. 1, not only the platen 2, but also the strip-winding spool 12 is rotated; said lever forcing said slide rearwardly, and the pawls 22 and 26 simultaneously engaging and operating the ratchet wheels 21, 27, Fig. 4. It will be seen that said slide 24 is guided in the usual manner in the end 4 of the platen frame for a backward and forward movement, and is provided with the usual returning spring 29. Upon the return movement of the slide effected by said spring, the pawl 26 is withdrawn from the ratchet wheel 27, by reason of engagement of a nose 30 on said pawl

with a trip 31 formed upon a plate 32, the latter adjustable forwardly and backwardly by a lever 33 to regulate the line-spacing of the platen in the usual manner, the platen being always normally disengaged from said pawl 26. It will also be seen that the strip-winding pawl 22 is provided with a similar nose 34 to be engaged by a trip 35 upon the return movement of the slide 24, 25, to disengage the pawl 22 from the ratchet wheel 21. Thus the strip-winding spool 12 may be turned in either direction by the hand wheel 23 independently of the platen 2; while the latter may be turned in either direction by hand wheels 36, 37 independently of the strip-winding spool 12. Hence the bill and the strip may, independently of each other, be fed in either direction. The usual spring detent 38, releasable by a cam lever 39, is provided for the platen, and any suitable spring detent 40 for the ratchet wheel 21.

In operation, the stationary spool 11, with the strip wound thereon, is placed upon the arm 13, and the strip is passed downwardly, backwardly and upwardly through the tubular guide 19, and connected to the winding spool 12. Then the bill 7 is introduced with its right hand border between the tally strip and the platen; the tube 19 being separated from the platen sufficiently to form a passage 41, Fig. 5, for the bill. The items are then written by the types, line by line, in the usual manner, the amounts being written once only, that is, upon the tally strip, and the carbon copies of said amounts being made upon the face of the bill.

When it is not desired to line-space the strip by the lever 28, the trip 35 is moved backwardly, Fig. 6, sufficiently to hold the nose 34 elevated, so that the pawl 22 never engages the wheel 21 during the strokes of the slide 24, 25, thereby silencing the ratchet wheel 21 and spool 12 during the line feeding of the platen. It will be seen that the trip 35 is carried upon the rear end of a slide 42 mounted upon shoulder screws 43, 44 and having a finger piece 45 at the front of the platen frame. A detent spring 46, mounted upon the slide 42, engages suitable notches, as 47, in the platen frame end 4, to detain the slide in either position to which it is shifted by the handle 45. Thus, the several items and their amounts may be written line by line upon the bill while the strip remains unfed, and then the finger-piece 45 may be thrown forwardly before the lever 28 is operated to feed the bill up for writing the footing, so that the strip may be fed a single line; and only the footing may be written upon the strip, and its carbon counterpart caused to appear upon the bill.

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 typewriting machine, the combination with a revoluble platen and a platen frame having a paper shelf in rear of the platen, of a winding spool mounted back of the paper shelf, a tally strip extending therefrom back of the paper shelf forwardly beneath and around the platen and back over the same, and a spool above the platen from which the strip is paid off.

2. In a typewriting machine, the combination with a revoluble platen and a platen frame having a paper shelf in rear of the platen, of a winding spool mounted back of the paper shelf, a tally strip extending from the winding spool back of the paper shelf forwardly beneath and around the platen and back over the same, said strip carbonized only on the side next to the platen, and a spool above the platen from which the strip is paid off.

3. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a tally strip winding spool mounted back of the platen, and a tube curving around under the platen and up in front of the same and at its rear end directed toward said winding spool, to receive and guide the strip.

4. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a winding spool back of the platen, a delivery spool over the platen, and a tally strip led from the delivery spool down the front of the platen and looped beneath the same and back to the winding spool.

5. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a winding spool, a delivery spool, and a tally strip led from the delivery spool down the front of the platen and looped beneath the same; said platen frame having a paper shelf in rear of the platen, and said tally strip running up from the bottom of the platen behind the paper shelf to said winding spool.

6. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a winding spool in rear of the platen, a delivery spool, and a tally strip led from the delivery spool down the front of the platen and looped beneath the same; a tubular guide being provided for said tally strip around the bottom of said platen and extending upwardly toward the winding spool.

7. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a winding spool back of the platen, a delivery spool, both spools mounted at one end of the platen, a tally strip led from the delivery spool and looped beneath the platen back to the winding spool and means for turning the winding spool and platen simul-

taneously to feed the strip oppositely to the feeding movement of the platen; said spools and strip mounted to permit the insertion of a bill or main sheet between the platen and said strip.

8. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a winding spool and a delivery spool, both mounted at one end of the platen, a tally strip led from the delivery spool around the front and beneath the platen and back to the winding spool, said spools and strip mounted to permit the insertion of a bill or main sheet between the platen and said strip, a line-spacing mechanism for the platen, and means connected to said line-spacing mechanism to operate the winding spool.

9. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a winding spool back of the platen, a delivery spool mounted at one end of the platen, a tally strip led from the delivery spool, around the front and beneath the platen and back to the winding spool and means for turning the winding spool and platen simultaneously to feed the strip oppositely to the feeding movement of the platen; said spools being separated from the platen to permit the main sheet to feed in and out of the machine between the spools and the platen, and the strip being disposed to permit the main sheet to be introduced between the platen and the strip.

10. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a winding spool, a delivery spool, a tally strip led from the delivery spool and looped around the platen to the winding spool, said strip disposed to permit the insertion of a bill or main sheet between the platen and said strip; the spools being separated from the platen to permit the main sheet to be fed into and out of the machine between the spools and the platen, said delivery spool mounted on an arm which is carried upon the platen frame and offset to cause the spool to overhang the platen and to leave room for the egress of the main sheet, and said winding spool being mounted upon a shaft which extends along the platen frame and carries a ratchet wheel, and a line-spacing mechanism for both the platen and the winding spool and provided with a single operating lever.

11. In a typewriting machine, the combination with a revoluble platen and a platen frame, of a winding spool mounted behind the paper shelf at one end of the platen, and a delivery spool carried upon an arm above the platen, said arm swiveled so that it may be swung to carry the delivery spool back of the paper shelf, and yielding means to hold said arm in working position.

12. In a typewriting machine, the com-



4  
 bination with a revoluble platen, of a strip-winding spool, operating means for said platen including a pawl, a ratchet wheel for said spool having a pawl, a lever to operate  
 5 both pawls, and a slide mounted upon the platen frame and provided with a finger-piece and having a lip to engage the spool winding pawl to lift said pawl away from the spool-winding ratchet, to silence the lat-  
 10 ter at the operation of said lever.

13. In a typewriting machine, the combination with a revoluble platen, of a strip-winding spool, operating means for said platen including a pawl, a ratchet wheel for  
 15 said spool having a pawl, a lever to operate both pawls, and a slide mounted upon the platen frame and provided with a finger-piece and having a lip to engage the spool winding pawl to lift said pawl away from  
 20 the spool-winding ratchet, to silence the latter at the operation of said lever; and yielding means to hold said slide at both ends of its pawl-controlling movement.

14. In a typewriting machine, the combination with a revoluble platen, a strip-winding spool, and separate ratchet wheels for the platen and the spool, of pawls connected to a single lever to operate both  
 25 ratchet wheels, means to effect disengagement between the spool-winding ratchet  
 30

wheel and its pawl, and a finger wheel for turning the spool.

15. In a typewriting machine, the combination with a revoluble platen, of tally-strip spools mounted at one end thereof, 35 and revoluble independently of the platen, the platen being revoluble independently of the spool, and a line-spacing mechanism common to the platen and the strip; the strip-winding spool being constructed to  
 40 draw the strip contrary to the surface movement of the platen, and the spools being mounted so that a bill or main sheet may be inserted between the platen and the strip.

16. In a typewriting machine, the combination with a revoluble platen and a  
 45 platen frame, of a winding spool back of the platen, a delivery spool over the platen, a tally strip led from the delivery spool down the front of the platen and looped be-  
 50 neath the same and back to the winding spool, and means to turn the winding spool simultaneously with the platen to cause the tally strip to feed in a direction opposite to the feeding movement of the platen.

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Witnesses:

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