

No. 815,595.

PATENTED MAR. 20, 1906.

E. F. KUNATH.  
TYPE WRITING MACHINE.  
APPLICATION FILED JULY 27, 1904.

3 SHEETS—SHEET 1.

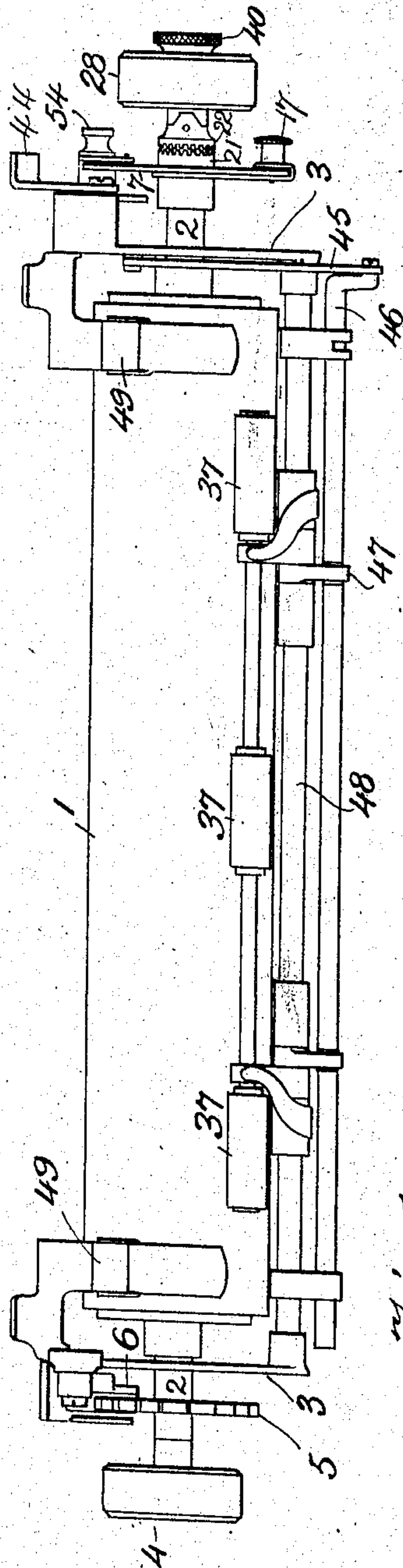


Fig. 1.

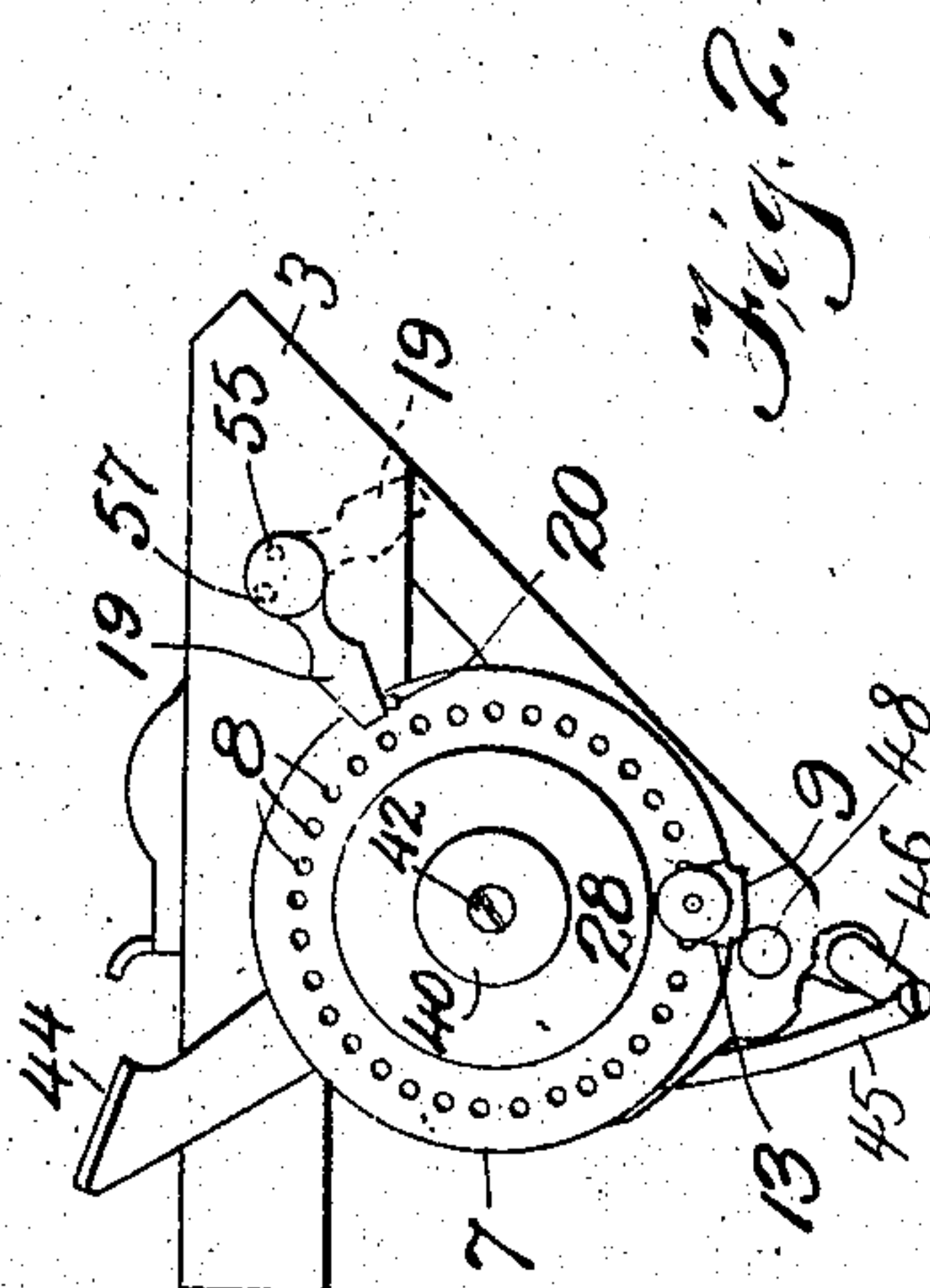


Fig. 2.

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*Wm. D. MacLean*

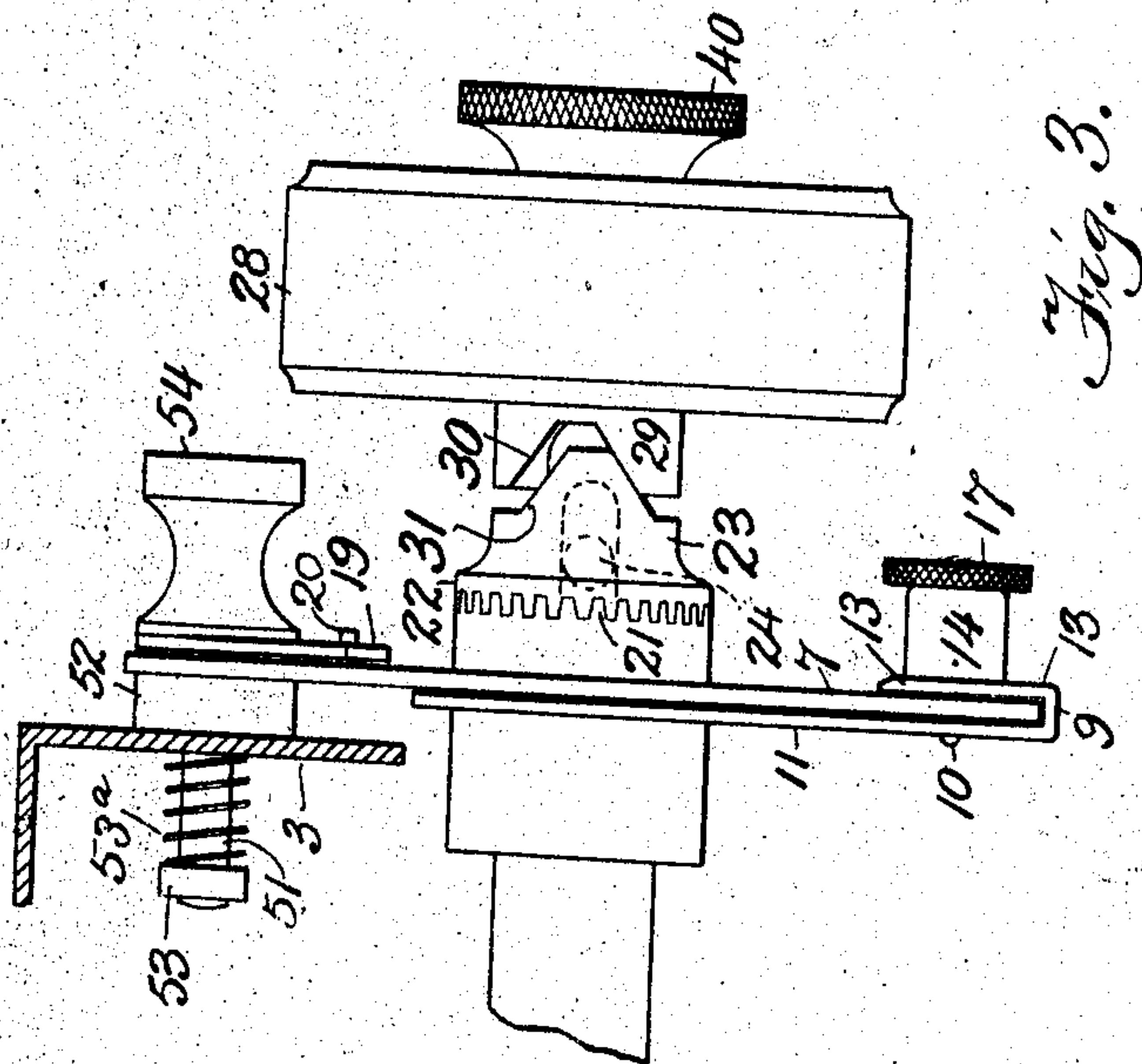
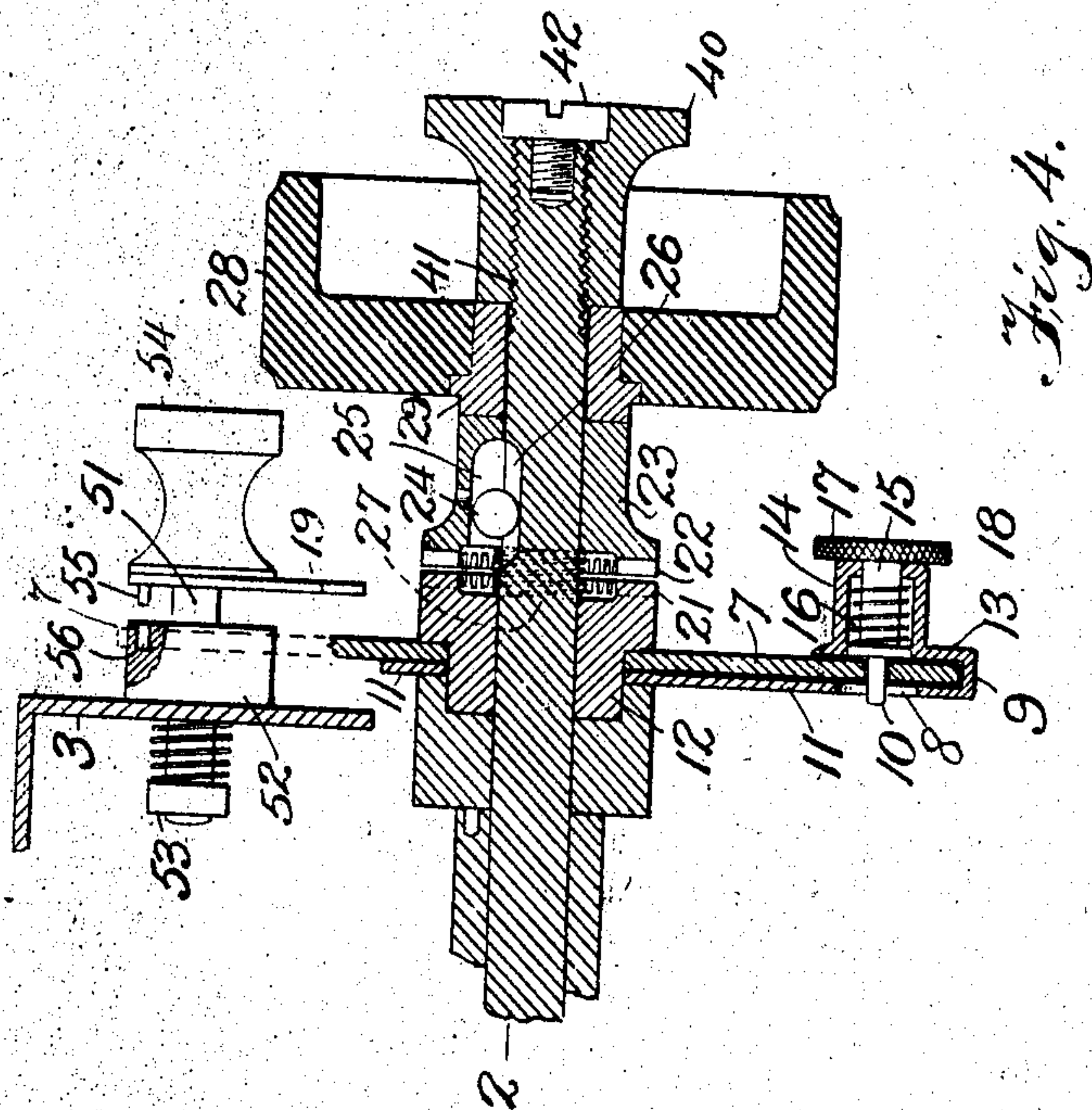
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3 SHEETS—SHEET 2



WITNESSES:

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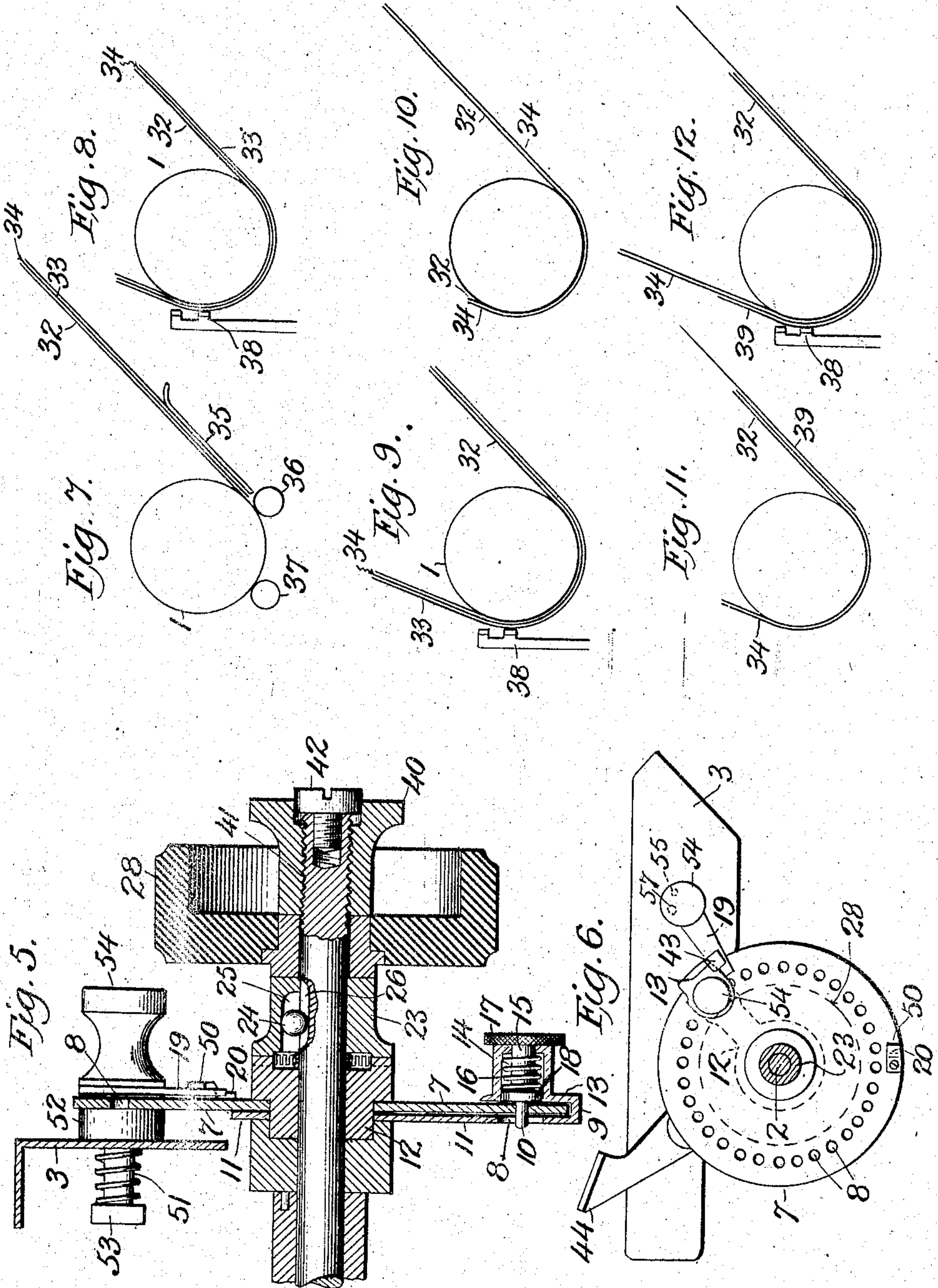


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3 SHEETS—SHEET 3.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## TYPE-WRITING MACHINE.

No. 815,595.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed July 27, 1904. Serial No. 218,386.

*To all whom it may concern:*

Be it known that I, EDWARD F. KUNATH, a citizen of the United States, residing in Jersey City, in the county of Hudson and State of New Jersey, 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 devices of type-writing machines; and its object is to facilitate the recording of invoices or bills by the use of carbon-papers. Since many bills are very short, it is practicable to have the carbon copies thereof succeed one another upon the same record-sheet. However, bills usually have printed headings, which occupy a considerable space, and obviously if corresponding spaces should be left between the successive copies upon the record-sheet there would be great waste of space and the records would be rendered unduly bulky and inconvenient.

The object of the present invention is to provide convenient means for enabling the operator to write bills in succession and make the carbon copies thereof follow one another at short intervals upon the same record-sheet, even though large portions of the bills themselves may be taken up by printed headings.

When a machine is equipped with my improvement, each bill may be written thereon and the bill itself removed while the record-sheet remains in the machine, and then a fresh bill may be inserted and written upon in such a manner that the carbon record thereof immediately follows the carbon record of the preceding bill, and so on until the record-sheet is filled. This operation is commonly known as "condensed charging," and the record-sheets are usually bound up in loose-leaf ledgers or books. Heretofore it has been proposed to employ for this purpose a pair of cooperative line-scales, one adjustable relatively to the other, in connection with an index; but this necessitates frequent consultation of the scale, which is a tax upon the operator, and mistakes are likely to happen. The present invention renders it practicable to give the platen the necessary back-and-forth manipulation without consulting any scale whatever, thus relieving the operator and avoiding the liability of mistakes.

According to the present invention the usual cylindrical platen of a type-writing machine may be moved, either by means of the usual line-spacing mechanism or by means of the usual platen-knob, either forwardly or backwardly to an unlimited extent, while at any time by manipulating a device specially provided the platen may be rotated either forward or backward to an extent which is mechanically limited and predetermined. Hence a bill with carbon and record sheet may be inserted in the machine in the usual manner and the platen may be rotated as far as necessary, so as to bring the proper place upon the bill to the printing-point, when the bill may be written line by line in the usual manner, and the operator may then remove the written bill, leaving the carbon and record sheet undisturbed in the machine, and by manipulating the new device he may simply turn the platen back as far as it will go and insert a fresh bill. Then by manipulating the same new device he may turn the platen as far forward as it will go and may then proceed to write the new bill without giving attention to the line-spacing position of either the bill or the record sheet, and the carbon copy will properly succeed upon the record sheet the copy of the first bill made thereon. Then the record-bill may be removed, the platen turned back, the third bill inserted, advanced, and written, and so on. No consultation of a scale is necessary at any time for determining the position to be occupied by the platen. Provision is also made whereby the limits of the back-and-forth rotation of the platen may be varied at will to suit different bill-heads, some of which may have more space at the top devoted to printed matter than others.

In the drawings forming part of this specification, Figure 1 is a front view of the platen and platen-frame of an Underwood type-writing machine, showing my improvements applied thereto. Fig. 2 is a view of the right-hand end of the platen-frame, showing my improvements in side elevation. Fig. 3 is a larger detail front elevation showing the operation of a clutch which is controllable by the right-hand platen-knob. Fig. 4 is a sectional view similar to Fig. 3, but showing the clutch as normally released and also illustrating the method of moving a platen-



frame stop into or out of working position. Fig. 5 is a view similar to Fig. 4, but showing the right-hand platen-knob locked to the platen-axle. Fig. 6 is a view similar to Fig. 2, but showing the preferred form of adjustable stops. Figs. 7 to 12 are diagrams illustrating the manipulation of successive bill-heads in connection with the carbon sheet and record-sheet.

In the several views like parts are identified by like signs.

1 designates the usual cylindrical platen of an Underwood type-writing machine, and 2 the axle rigid therewith. 3 indicates portions of the platen-frame wherein said axle turns.

4 is the usual finger-wheel, fixed upon the left-hand end of the platen-axle, whereby the platen may at any time be rotated forwardly or backwardly to an unlimited extent. The platen is also provided with the usual line-spacing wheel 5, which, as usual, is advanced intermittently by a pawl 6 for ordinary line-spacing purposes.

Loose upon the portion of the platen-axle which projects from the right-hand end of the platen-frame is a disk 7, having therein a circular series of perforations 8 at intervals equal to those of the teeth upon the line-spacing wheel 5. A stop member (designated generally as 9) is adjustable around said disk and has a securing-pin 10, which may project through any of said perforations 8, thereby locking said member 9 in any selected position upon said disk. The latter may be regarded as a circular rack and for the purposes of my invention may be of any desired construction and operation, and the same is also true of the stop member 9. In the present instance the stop member 9 is illustrated as comprising an arm 11, pivoted upon the hub 12 of the disk 7 (said hub being rigid with the disk) and bent around the outer edge of the disk and then inwardly at 13 to form the stop proper, said stop 13 being provided with a cylindrical housing 14 for the stem 15, which is fixed to said pin 10. A compression-spring 16 coils around the stem 15, the latter having a head or finger piece 17 and also having a guide-collar 18 fitting in the bore of the housing 14. The spring 16 bears at one end against said collar and at the other end against the head of the housing and normally holds the pin 10 in one of the perforations 8. Upon pulling out the pin by means of the head 17 the stop member may be swung around to any point and the pin re-engaged with any selected perforation 8.

Upon the platen-frame is a fixed stop 19 in the path of the stop 13, so that when the disk 7 is turned to the right it is arrested by engagement of the stops 13 and 19, as at Fig. 6. For arresting the movement of the disk or circular rack in the opposite or backward direction I fix upon the latter a stop (shown

at Fig. 2) in the form of a pin 20, which strikes the opposite or under side of the stop 19. Hence the circular rack may be rotated forward and back between mechanically-determined limits, and the length or extent of such rotation or oscillation may be predetermined by adjustment of the stop member 9. The arc through which the circular rack may move in the construction shown is less than a complete revolution of the platen.

As already explained, the platen may at any time be rotated by the line-spacing mechanism or the thumb-wheel 4 for any distance forward or backward. Such rotation is wholly independent of the circular rack 7 or the stops thereon, said rack remaining motionless during such platen rotation; but when desired said circular rack may be positively clutched to the platen and caused to rotate therewith, and then the platen is arrested by the cooperation of the stop 19 with either the stop 13 or the stop 20. Assuming that the platen and circular rack are clutched together when the parts are in the position shown at Fig. 2, the platen could be advanced twenty-two line-spaces (or twenty-two notches of the line-spacing wheel 5) before the circular rack and platen are together arrested by engagement of the stop 13 with the stop 19. Then the platen could be unclutched from said circular rack 7 and rotated either forwardly or backwardly as desired, and subsequently re-clutched to 7 and rotate backward twenty-two line-spaces, whereupon stop 20 would engage the stop 19 and arrest the circular rack, together with the platen. Thus it will be seen that the circular rack 7 is intended to be out of use during the usual rotation of the platen and is only brought into use at the will of the operator when it is desired to turn the platen either in one direction or the other for a predetermined number of line-spaces to compensate for the space occupied by the printed matter at the top of a bill-head. The extent of such rotation is mechanically limited, so that no calculation or studying of a scale on the part of the operator is necessary. The clutching alluded to is effected by means of two clutch members, one thereof consisting of a circular set of teeth 21, formed upon the hub 12 of the circular rack 7, and the other consisting of a set of teeth 22, formed upon a collar 23, splined to the platen-axle 2, preferably by means of a ball 24, which works in coincident grooves 25 and 26, formed longitudinally in the collar and axle, the clutch-collar being kept normally out of effective position by means of a compression-spring 27, which surrounds the axle and works between the collar and the hub 12. It will be seen that it is only necessary to force the collar 23 along the axle toward the left in order to couple the platen positively to the circular rack 7 for the purposes specified. I prefer to control said clutching-collar 23 by means of a



finger-wheel 28, mounted by its hub 29 loosely upon the tip of the platen-axle 2, said hub having a V-notch 30 and said clutching-collar 23 having a V-tooth 31 to engage said notch, so that by turning the finger-wheel 28 the collar is cammed along the shaft and forced into engagement with the clutch member 21, as seen at Fig. 3. It is obvious that a slight rotation of the finger-wheel 28 in either direction from normal position will effect the operation of the clutch. The sliding movement of the clutch-collar 23 is arrested by the engagement of the two sets of teeth, and hence the finger-wheel 28 cannot rotate further relatively to collar 23, so that further rotative force applied to said finger-wheel has the effect of rotating the clutch, axle, and platen as if made in one piece, owing to the spline connection between the collar and the axle. Hence it will be seen that if it be desired to rotate the platen twenty-two line-spaces forwardly from the position shown at Fig. 2 it is only necessary to rotate the finger-wheel 28 as far as it will go. Such rotation at first has the effect of engaging the clutch members and then operates to rotate the platen and all until they are together arrested by the engagement of the stop members 13 and 19. It will also be seen that if it is desired thereafter at any time to turn the platen back twenty-two line-spaces it is only necessary to turn the finger-wheel 28 backwardly as far as it will go. Such movement of the finger-wheel first operates the clutch to lock the platen to the circular rack and then causes them all to turn together until arrested by engagement of stop 20 with stop 19. In this way the space occupied by the printed matter on the bill-head may be compensated for, the effect of the backward-and-forward movements of the platen being, first, to enable the record-sheet to be brought into proper line-space relative to the freshly-inserted bill, and, second, to advance record-sheet and bill together to the proper point to begin writing upon the latter.

Referring to Figs. 7 to 12, it will be observed that the record-sheet 32, the bill 33, and the interleaved carbon 34 may be inserted together between the platen 1 and the usual paper-shelf 35. They are then carried around the platen by the usual pressure-rolls 36 and 37 until the proper blank upon the bill is brought to the printing-point, Fig. 8, so that the name of the customer may be written thereon by the types 38, which in the Underwood machine strike in the front of the platen. The bill is then written, the usual line-spacing mechanism 6 being employed to advance the sheets together line by line until the last line of the short bill is written, as at Fig. 9. Thereupon the bill may be removed, leaving in the machine only the record-sheet 32 and the carbon 34, and by means of the finger-wheel 28 the platen may be rotated back-

wardly for a distance corresponding with the space occupied by the printed matter on the bill-head, (say twenty-two line-spaces,) so that said sheets 32 and 34 occupy the positions shown at Fig. 10. Then a second bill-head 39 may be inserted, as at Fig. 11, and by means of the finger-wheel 28 the platen may be advanced to bring the proper place on said bill-head to the printing-point, as at Fig. 12, so that the carbon copy of the second bill will succeed the carbon copy of the first bill, which has already been printed on the top of the record-sheet, which is seen extending above the bill 39.

In operating the circular rack 7 is first rotated backwardly until the stop 20 contacts with the stop 19, as at Fig. 2. While the parts are in this position, the sheets are inserted, as at Fig. 7. Then the circular rack 7 and platen may be temporarily locked together by means of a thumb-nut 40, threaded at 41 upon the top of the platen-axle and retained thereon by a cap-screw 42, the turning in of said nut 40 advancing the collar 23 toward the left until the clutch members 21 and 22 are locked in engagement, as at Fig. 5. Then the platen and circular rack 7 are rotated until the paper reaches the Fig. 8 position—that is, the proper position for the first line to be written upon the bill. Then the stop member 9 is swung around until the stop 13 thereon engages the stop 19, in which position the stop member is then locked by means of the pin 10. The operator then unscrews the thumb-nut 40, so as to release the clutch members, thus permitting the platen to be rotated for line-spacing as far as may be desired, while the circular rack 7 remains stationary. The stop 13 is preferably provided with a spring-lip 43, which catches upon the stop 19, Fig. 6, and by frictional engagement therewith holds the member 7 against accidental movement during the line-by-line rotation of the platen. When the bill has been completed, as at Fig. 9, the rolls 36 37 may be cast off by means of the usual releasing-lever 44, which is connected by a link 45 to a crank-shaft 46, the latter, as usual in the Underwood machine, controlling arms 47, fixed upon rock-shafts 48, about which the rollers 36 and 37 vibrate. The usual front pressure-rollers 49 may also be released, and thereupon the bill 33 may be drawn out of the machine. Then the lever 44 may be lifted to normal position, and the platen may be rotated backwardly by means of the finger-wheel 28 until the stop 20 contacts with the stop 19. It should here be noted, however, that before the bill 33 is drawn out an extra line-spacing movement may be given to the platen, so as to form a space between the bill-records upon the record-sheet, and also that, if desired, the platen may be rotated backwardly to the position at Figs. 2 and 10 before the lever 44 is depressed and the bill drawn out. There-



upon the second bill 39 is inserted, and the platen is rotated forwardly by the finger-wheel 28 as far as it will go. This brings the sheets to the Fig. 12 position, whereupon the second bill 39 may be written. The latter may then be taken out and the platen rotated rearwardly by the finger-wheel 28 as far as it will go or until the parts reach the Fig. 2 position, and so on.

The stop 20 is shown at Fig. 6 as having a spring-lip 50 for catching over the platen-frame stop 19, so as to prevent accidental rotation of the circular rack 7. Hence the latter may be rotated as far as it will go in either direction and is always held securely at each stopping-place. The thumb-nut 40 is of course employed only during the first movement of the platen from the Fig. 7 to the Fig. 8 position and until the stop 13 is properly adjusted. Thereafter during the writing of all the bills said thumb-nut is left unscrewed, so that the clutch is always open except when closed by means of the finger-wheel 28.

The stop 19 upon the platen-frame is preferably mounted so that it may be moved to a position of disuse, this result being effected by fixing said stop upon a pintle 51, projecting through a stud 52 upon the platen-frame 3 and carrying at its inner end a shoulder 53 and at its outer end a cap or finger-piece 54, whereby the stop may be rotated to the position shown in dotted lines at Fig. 2, a dowel-pin 55 being provided upon said stop for engaging a hole 56 in the stud 52 and said pin being adapted to seat in a hole 57 in said stud when the stop 19 is out of use. When no bills are to be written, the stop 19 may be moved to a position of disuse, and by means of the thumb-nut 40 the finger-wheel 15 may be clamped to the platen and thereupon used in the ordinary manner the same as the finger-wheel 4 at the other end of the platen.

It will be seen that the stop member 7, having the stops 13 and 20 thereon, is adjustable about the platen-axis independently of the platen; that means are provided for the stop-arm 12 and the platen to revolve together when desired, said stop-arm being effective to arrest the platen revolution in one direction, and that a separate stop 20 is also revoluble with the platen for arresting the revolution of the platen in the opposite direction; that the forward stop 13 and the back stop 20 are relatively adjustable, the length of the arc through which the platen rotates for billing being determined by such relative adjustment; that said stops 13 and 20 are adjustable independently of the platen and also independently of each other, whereby when the sheets are inserted, as at Fig. 7, the stop 20 may be adjusted backwardly to the Fig. 2 position independently of the platen and then after the sheets have reached the Fig. 8 position the stop 13 may be adjusted to the Fig. 6 position independently of the platen

and of the stop 20; that the platen may be rotated either forwardly or backwardly at will through a predetermined arc less than an entire revolution, regardless of the position to which the platen may have been previously turned by the finger-wheel 4 or by the line-spacing mechanism 5 6; that the operator may first rotate the platen backwardly through a predetermined arc greater than a line-space and less than a complete revolution and may then rotate the platen forwardly through the same arc without attention to a scale; that the stops 13 and 20 are normally inoperative by the platen, although capable of rotation therewith; that the finger-wheel 28 connects the platen to the stops for limiting the extent of the rotation of the platen effected by said finger-wheel; that the finger-wheel 28 may turn the platen in either direction and also render the stops effective; that the platen may be alternately set forward and back such a number of line-spaces as may be predetermined by the setting of the adjustable devices 7 and 9, and that the finger-wheel 4 is capable of rotating the platen in either direction at will to an unlimited extent between such alternate movements.

Many variations may be resorted to within the scope of the invention—as, for instance, a lever may be used in place of the finger-wheel 28—and portions of the improvements may be used without others.

Having thus described my invention, I claim—

1. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of fixed arresting means upon the platen-frame, and means revoluble with the platen and cooperating with said fixed arresting means, for arresting both forward and backward revolutions of the platen; said revoluble arresting means comprising two stop members, whereof one is adjustable about the platen-axis and independently of the platen.

2. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of a circular rack concentric with the platen, a stop adjustable along said rack, means cooperating with said stop for arresting the revolution of the platen in one direction, and means for arresting the revolution of the platen in the opposite direction.

3. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of a circular rack revoluble concentrically with the platen, a stop adjustable along said rack independently of the platen; said stop and rack being revoluble together with the platen; and a fixed device upon the platen-frame for engaging said stop to arrest the revolution of the platen in one direction.

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



5 nation with a revoluble platen, a line-space wheel, and a platen-frame, of a circular rack  
10 revoluble concentrically with the platen, a stop adjustable along said rack independ-  
15 ently of the platen; said stop and rack being revoluble together with the platen; a fixed  
device upon the platen-frame for engaging said stop to arrest the revolution of the  
20 platen in one direction, and means between the platen-frame and the platen for arresting  
the movement of the platen in the opposite direction.

5 In a type-writing machine, the combination with a revoluble platen provided with  
15 an axle, a line-space wheel, and a platen-frame, of a stop-arm revoluble upon the  
platen-axle independently of the platen, means for causing said stop-arm and platen  
20 to revolve together, and a stop upon the platen-frame for engagement with said stop-  
arm to arrest the platen.

6. In a type-writing machine, the combination with a revoluble platen provided with  
25 an axle, a line-space wheel, and a platen-frame, of a stop-arm revoluble about the  
platen-axis independently of the platen, means for causing said stop-arm and platen  
to revolve together, a stop upon the platen-frame for engagement with said stop-arm to  
30 arrest the platen revolution in one direction, and means, including a separate stop also  
revoluble with the platen, for arresting the revolution of the platen in the opposite direc-  
tion.

35 7. In a type-writing machine, the combination with a revoluble platen, a line-space  
wheel, and a platen-frame, of two stops revoluble with the platen, and a fixed device upon  
the platen-frame in the path of said stops for  
40 arresting both the forward and backward revolutions of the platen.

8. In a type-writing machine, the combination with a revoluble platen, a line-space  
45 wheel, and a platen-frame, of cooperating devices, one upon the platen-frame and the  
other revoluble together with the platen, for arresting the platen in both its forward and  
backward revolutions; one of said cooperating devices being adjustable concentrically  
50 with and independently of the platen.

9. In a type-writing machine, the combination with a revoluble platen, a line-space  
55 wheel, and a platen-frame, of cooperating devices, one of which comprises forward and  
back stops which are relatively adjustable; one of said cooperating devices being mount-  
ed upon the platen-frame and the other being revoluble together with the platen, for ar-  
resting the platen in both its forward and  
60 backward revolutions, through arcs whose length is determined by the relative adjust-  
ment of said forward and back stops; one of said cooperating devices being adjustable  
concentrically with and independently of the  
65 platen.

10. In a type-writing machine, the combination with a revoluble platen, a line-space  
wheel, and a platen-frame, of cooperating de-  
70 vices, one of which is fixed upon the platen-frame, and the other of which comprises for-  
ward and back stops relatively adjustable and also revoluble together with the platen,  
for arresting the platen in both backward and forward revolutions thereof.

11. In a type-writing machine, the combi- 75  
nation with a revoluble platen, a line-space wheel, and a platen-frame, of a stop upon the  
platen-frame, and forward and back stops revoluble together with the platen, said for-  
ward and back stops being adjustable inde- 80  
pendently of the platen and independently of each other.

12. In a type-writing machine, the combination with a revoluble platen, a line-space  
85 wheel, and a platen-frame, of a stop upon the platen-frame, a circular rack mounted so  
that it may revolve with the platen, said rack being also revoluble independently of  
the platen, and forward and back stops carried by said rack; at least one of said forward 90  
and back stops being adjustable along the rack.

13. In a type-writing machine, the combination with a revoluble platen, line-spacing  
95 mechanism, and a platen-frame, of relatively adjustable stops for arresting both forward  
and backward revolutions of the platen; at least one of said stops being normally inop-  
erative by said platen but capable of rotation therewith; and a manually-operable device 100  
being provided for both rotating the platen and connecting to the latter said normally  
inoperative stop, for limiting the extent of rotation of the platen by said manually-op-  
erable device.

14. In a type-writing machine, the combination with a revoluble platen, of a manually-  
operable device mounted to turn about the  
105 platen-axis; means for enabling said manually-operable device to turn said platen  
either forwardly or backwardly at will; and means, including a stop which is adjustable  
about the platen-axis, for limiting positively the forward and back strokes of said man-  
ually-operable device; said limiting means 115  
being effective to arrest the platen only when the latter is rotated by means of said manu-  
ally-operable device, and the platen being normally rotatable in either direction at will  
to an unlimited extent.

15. In a type-writing machine, the combination with a revoluble platen, line-spacing  
120 mechanism, and a platen-frame, of a circular rack concentric with the platen, a stop ad-  
justable along said rack for arresting the rev-  
olution of the platen in one direction, a stop  
for arresting the revolution of the platen in  
125 the opposite direction, the platen being normally free to rotate in either direction inde-  
pendently of said stops, and a manually-op- 130



erable device capable of rotating the platen either forward or backward at will and also capable of rendering said stops effective to arrest the platen.

5 16. In a type-writing machine, the combination with a revoluble platen, line-spacing mechanism, and a platen-frame, of a circular rack revoluble concentrically with the platen; a stop adjustable along said rack independ-  
10 ently of the platen; said stop and rack being revoluble together with the platen; a fixed device upon the platen-frame for engaging said stop to arrest the platen; and a manu-  
15 ally-operable device capable of effecting operative connection between said rack and said platen and of rotating the latter.

17. In a type-writing machine, the combination with a platen and a platen-frame, of a circular rack revoluble concentrically with  
20 the platen; a stop adjustable along said rack; a relatively fixed device for engaging said stop to arrest the platen; a manually-operable device rotatable concentrically with the platen and capable of effecting operative  
25 connection between said rack and said platen and of rotating the latter either forwardly or backwardly; and arresting means to cooperate with said arresting device for limiting the rotation of the platen and rack in both direc-  
30 tions.

18. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of two stops revoluble with the platen, fixed arresting means upon the platen-frame  
35 in the paths of said stops for arresting the forward and backward revolutions of the platen, the platen being normally revoluble in either direction at will independently of said arresting means, and a finger-wheel  
40 mounted concentrically with the platen and capable of rotating the platen in either direction through an arc limited by said stops and arresting means; means being provided whereby the length of such arc may be varied.  
45

19. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of a finger-wheel capable of rotating the platen in either direction, and cooperating devices, one of which is fixed upon the platen-frame, and the other of which comprises forward and back stops relatively adjustable and also revoluble together with  
50 said finger-wheel and platen, for arresting said wheel and platen in both backward and forward revolutions thereof; said platen being normally rotatable in either direction at will independently of said arresting devices, and said finger-wheel controlling the action  
55 of the latter.  
60

20. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of a stop upon the platen-frame, forward and back stops revoluble together with

the platen, said forward and back stops being adjustable independently of the platen and relatively to each other, and said platen being normally rotatable in either direction at will independently of said arresting devices, and a manually-operable device capable of rotating the platen either forwardly or backwardly at will and limited in its platen-rotating movements by said stops.

21. A revoluble type-writer platen provided at each end with a hand-wheel, one of  
75 said hand-wheels forming part of a manually-operable contrivance, and adjustable devices for mechanically limiting the forward and backward movements of said manually-operable contrivance, the construction being  
80 such that the platen may, by said manually-operable contrivance, be alternately set forward and back such a number of line-spaces as may be predetermined by the setting of  
85 said adjustable devices, and the other of said hand-wheels being capable of revolving the platen in either direction at will to an unlimited extent between such alternate movements and independently of said manually-operable contrivance.  
90

22. In a type-writing machine, the combination with a platen and platen-frame, of a circular rack mounted concentrically with the platen and revolubly adjustable independently of the platen, a stop adjustable  
95 along said rack, a cooperative fixed stop upon the platen-frame, a finger-wheel or lever for rotating the platen; and a clutch between said finger-wheel and said circular rack; said clutch being normally released.  
100

23. In a type-writing machine, the combination with a platen and platen-frame, of a circular rack mounted concentrically with the platen and revolubly adjustable independently of the platen, stops upon said rack  
105 for limiting its rotation in both directions, at least one of said stops being adjustable along the rack; a cooperative stop member upon the platen-frame, a finger-wheel for rotating the platen, and a normally released clutch  
110 between said circular rack and said finger-wheel and rendered effective by a platen-rotating movement of the latter.

24. In a type-writing machine, the combination of a platen, a finger-wheel for rotating  
115 the same, normally ineffective stops for limiting the rotation backward and forward of said finger-wheel and platen, and means called into action by turning said finger-wheel, for rendering said stops effective.  
120

25. In a type-writing machine, the combination of a platen, a platen-frame, a finger-wheel for rotating the platen, a stop member revoluble with the platen; a cooperative stop member upon the platen-frame, said platen  
125 being normally revoluble to an unlimited extent independently of said stop members, and means called into action by turning said



finger-wheel in either direction, for rendering said stops effective to limit the forward and backward rotation of finger-wheel and platen.

26. In a type-writing machine, the combination with a platen and a platen-frame, of a stop member upon the platen-frame, a cooperative stop member upon the platen and adjustable independently of the platen, a clutch member upon said platen stop member; a finger-wheel connected to the platen, and a clutch member normally released but engageable with the first-mentioned clutch member by means of a turning movement of said finger-wheel in either direction.

27. In a type-writing machine, the combination with a platen and a platen-frame, of a platen-axle journaled in the platen-frame, a stop member upon the platen-axle and revoluble thereon independently of the platen, a clutch member fixed to said stop member, a finger-wheel loose upon said platen-axle, a clutch-collar loose upon said axle and engageable with said clutch member but normally released therefrom, means for splining said clutch-collar to said axle, said collar having a double-cam engagement with said finger-wheel, so that by turning the latter either forwardly or backwardly the collar is cammed into engagement with the first-mentioned clutch member, the construction and arrangement being such that further pressure upon the finger-wheel is effective to rotate the platen, and a cooperative stop upon the platen-frame.

28. In a type-writing machine, the combination with a platen, a platen-frame, and line-spacing mechanism, of a stop member mounted for rotation concentrically with the platen and stationary during the operation of the platen by the line-spacing mechanism, a finger-wheel, a clutch between said finger-wheel and said stop member, said clutch being normally released and being rendered effective by rotation of said finger-wheel in either direction, and said finger-wheel being also effective to rotate the platen when clutched to said stop member, and a cooperative stop member upon the platen-frame; said stop members being capable of limiting both the forward and backward movements of the platen and finger-wheel.

29. In a type-writing machine, the combination with a platen and a platen-frame, of a platen-axle mounted in the platen-frame, a circular rack loose upon said axle and having a stop fixed thereon, a stop adjustable along said rack, a clutch member fixed to said rack, a clutch-collar splined upon said axle, a spring holding said clutch member and said clutch-collar apart, a finger-wheel loose upon said axle, one of said finger-wheel and collar elements having a V-tooth and the other having a corresponding V-notch, means for preventing axial movement of said finger-wheel,

and a fixed stop upon the platen-frame to cooperate with said stops.

30. In a type-writing machine, the combination with a platen of a stop member, a finger-wheel, a normally disengaged clutch controlled by said finger-wheel, and a cooperative fixed stop member.

31. In a type-writing machine, the combination with a platen and line-spacing mechanism, of a member movable forward and backward upon the platen-axis, relatively adjustable stops for limiting the forward and backward movements of said member; the platen being normally capable of forward or backward rotation to an unlimited extent independently of said member; and means for operatively connecting said member at will to the platen, so as to mechanically limit the extent of forward or backward rotation of the platen.

32. In a type-writing machine, the combination with a platen and platen-frame, of a stop member upon the platen-frame, and a device connectible at will to the platen and rotatable therewith and constructed to cooperate with said stop member for mechanically limiting the forward and backward rotation of the platen; a part being included which is adjustable concentrically with the platen for the purpose of varying the extent of the platen movement.

33. In a type-writing machine, the combination with a platen and platen-frame, of a stop member upon the platen-frame, and a stop member connectible at will to the platen for rotation therewith and constructed to cooperate with the stop member upon the platen-frame for mechanically limiting the rotation of the platen in forward and backward direction; one of said stop members comprising a circular rack and a stop adjustable therealong.

34. In a type-writing machine, the combination with a platen, a platen-frame, and a stop upon the latter, of a member capable of oscillation about the platen-axis within limits determined by said stop, a manually-operable device, and means for enabling a single stroke of the latter both to connect said oscillatory member to the platen and to effect rotation of the latter forwardly or backwardly.

35. In a type-writing machine, the combination with a platen and a platen-frame, of a member capable of mechanically-limited oscillation and connectible to the platen at will for mechanically limiting the extent of forward or backward rotation of the latter, and means for holding said oscillatory member stationary at either end of its oscillation.

36. In a type-writing machine, the combination with a platen and platen-frame, of a stop member upon the platen-frame, a device connectible at will to the platen and rotatable therewith, means for enabling said platen-



frame stop member to positively arrest said rotatable device when rotating in either forward or backward direction, and yielding means normally holding said rotatable device stationary at either end of its rotation.

37. In a type-writing machine, the combination with a platen and platen-frame, of a stop member revoluble about the platen-axis, the platen being normally revoluble independently of said stop member, a finger-wheel upon the platen-axis capable of rotating said stop member and said platen together in either direction, and means for both arresting said stop member when rotating either forwardly or backwardly and holding the stop member in its arrested position.

38. In a type-writing machine, the combination with a platen and platen-frame, of a circular rack mounted for rotation about the platen-axis and connectible to the platen at will, two stops mounted upon said rack, one stop being adjustable along the rack, yielding detents carried by said stops; and a stop fixed upon the platen-frame in the paths of said stops for positively arresting said circular rack and platen; said platen-frame stop being engageable by said yielding detents for holding said circular rack stationary.

39. In a type-writing machine, the combination with a platen and platen-frame, of a circular rack mounted for rotation about the platen-axis and connectible to the platen at will, two stops mounted upon said rack, one stop being adjustable along the rack, a stop member upon the platen-frame in the paths of said stops for positively arresting the circular rack and platen; and yielding means between the platen-frame and the rack-stops for detaining the rack when arrested.

40. In a type-writing machine, the combination with a platen and platen-frame, of a stop member mounted for revolution about the platen-axis, a finger-wheel, a clutch normally released between said stop member and said finger-wheel, means for enabling a movement of the finger-wheel to operate the clutch, means for also locking the clutch members together, and a stop member upon the platen-frame.

41. In a type-writing machine, the combination with a revoluble platen and line-spacing mechanism therefor, of a normally released clutch mechanism capable of rotating the platen in either direction, stops for limiting the movement of said clutch and platen in each direction, and means for permanently locking the clutch members together.

42. In a type-writing machine, the combination with a revoluble platen and line-spacing mechanism therefor, of a finger-wheel, a normally released clutch controlled by said finger-wheel and capable of rotating the platen in either direction, means independent of the finger-wheel for permanently locking the clutch members in closed relation, and

stops for limiting the rotation of the clutch and platen in each direction; at least one of said stops being adjustable.

43. In a type-writing machine, the combination with a platen and platen-frame, of a circular rack mounted concentrically with the platen and revolubly adjustable independently of the platen, stops upon said rack for limiting its rotation in both directions, at least one of said stops being adjustable along the rack, a cooperative stop member upon the platen-frame, a finger-wheel for rotating the platen, a normally released clutch between said circular rack and said finger-wheel and rendered effective by a platen-rotating movement of the latter, and means for permanently locking the clutch members together.

44. In a type-writing machine, the combination with a platen and a platen-frame, of a platen-axle mounted in the platen-frame, a circular rack loose upon said axle and having stops thereon, one of said stops being adjustable along said rack, a clutch member fixed to said rack, a clutch-collar splined upon said axle, a spring holding said clutch member and said clutch-collar apart, a finger-wheel loose upon said axle, one of said finger-wheel and collar elements having a V-tooth and the other having a corresponding V-notch; a screw upon the tip of said platen-axle for locking the clutch-collar into permanent engagement with said clutch member; a retaining screw or device for said screw; and a fixed stop upon the platen-frame to cooperate with said stops.

45. In a type-writing machine, the combination with a revoluble platen, line-spacing mechanism, and a platen-frame, of a stop upon the platen-frame, and means connectible at will to the platen and cooperating with said stop, for arresting the forward and backward revolutions of the platen; said stop being movable at will out of working position.

46. In a type-writing machine, the combination with a revoluble platen and line-spacing mechanism, of a platen-frame, and stops for arresting both forward and backward revolution of the platen; one of said stops being movable out of working position, so that one stop may pass by the other during the revolution of the platen, so as to render the stop mechanism ineffective.

47. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of a circular rack revoluble concentrically with the platen, a stop adjustable along said rack independently of the platen; said stop and rack being revoluble together with the platen; and a fixed device upon the platen-frame for engaging the stop to arrest the revolution of the platen, in each direction; said fixed device being mounted so that it may be moved out of working position at will.



48. In a type-writing machine, the combination with a revoluble platen, line-spacing mechanism, and a platen-frame, of two stops revoluble with the platen, a device upon the platen-frame in the path of said stops for arresting both forward and backward revolutions of the platen, and means for effecting such relative movement of said arresting device and said stops as to prevent their cooperation.

49. In a type-writing machine, the combination with a revoluble platen, of a platen-frame, a stop thereon, normally ineffective stops for arresting the forward and backward revolutions of the platen, and a finger-wheel capable of turning the platen in either direction and simultaneously rendering said stops effective; said platen-frame stop being mount-

ed so that it may be moved out of working position at will.

50. In a type-writing machine, the combination with a platen and platen-frame, of a stop member mounted for revolution about the platen-axis, a finger-wheel, a normally released clutch between said stop member and said finger-wheel, means for enabling a movement of the finger-wheel either forwardly or backwardly to close the clutch and rotate the platen, means for permanently locking the clutch members together, and a cooperative stop mounted upon the platen-frame but movable out of working position at will.

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Witnesses:

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