

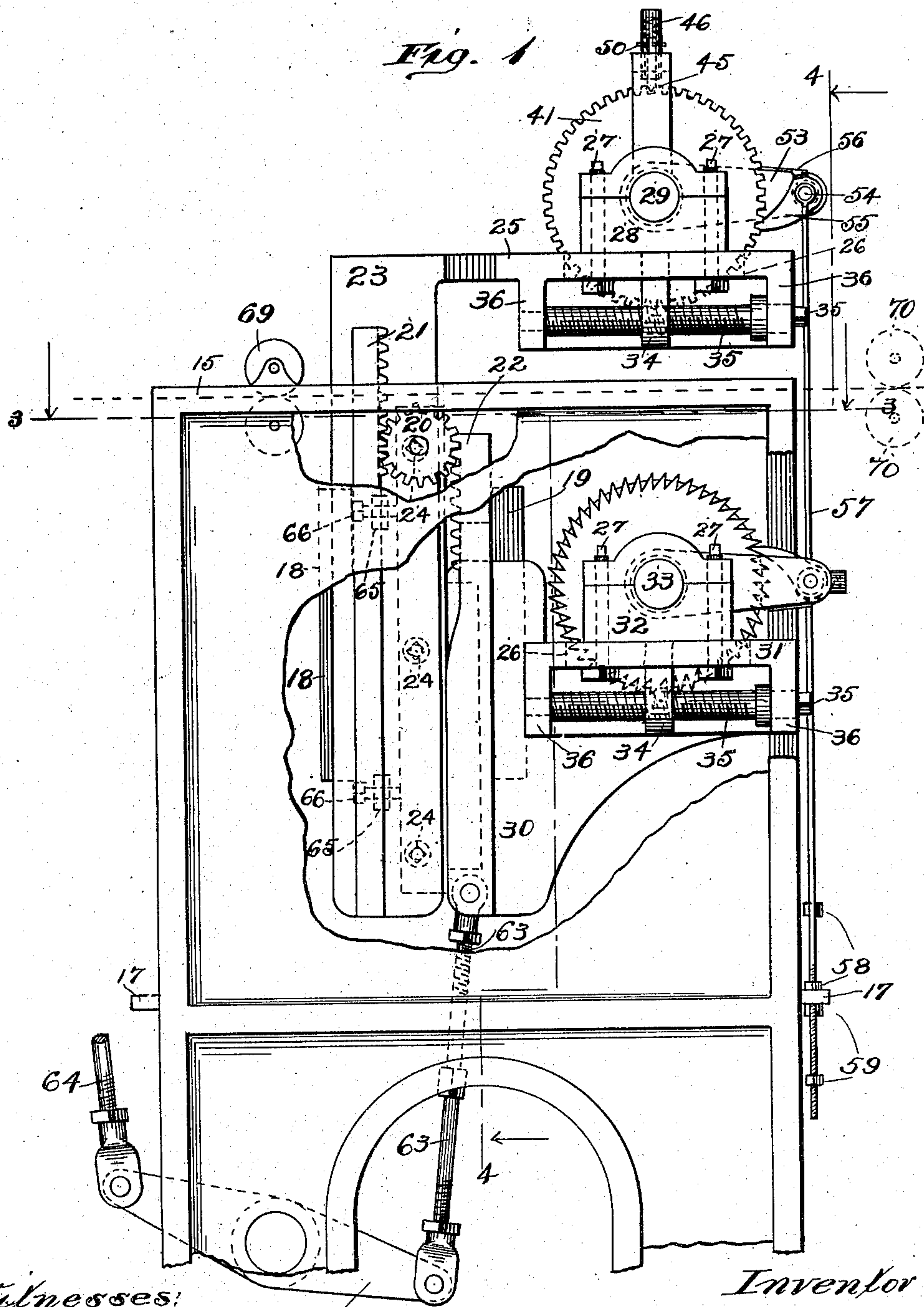
No. 741,819.

PATENTED OCT. 20, 1903.

A. NORDSTROM.
NUMBERING MACHINE.
APPLICATION FILED DEC. 26, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:

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Inventor:

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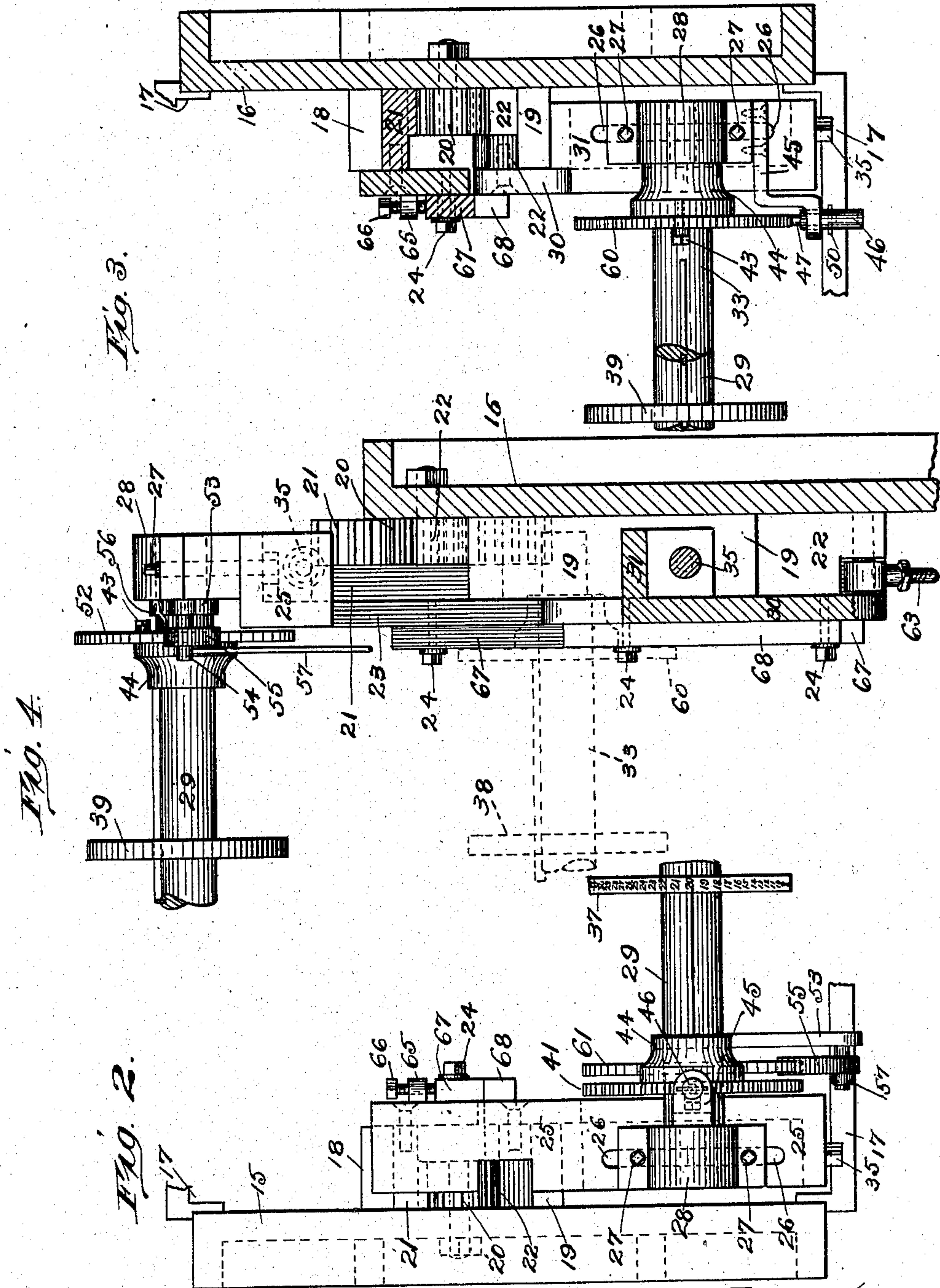
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 5.

Fig. 6.

Fig. 7.

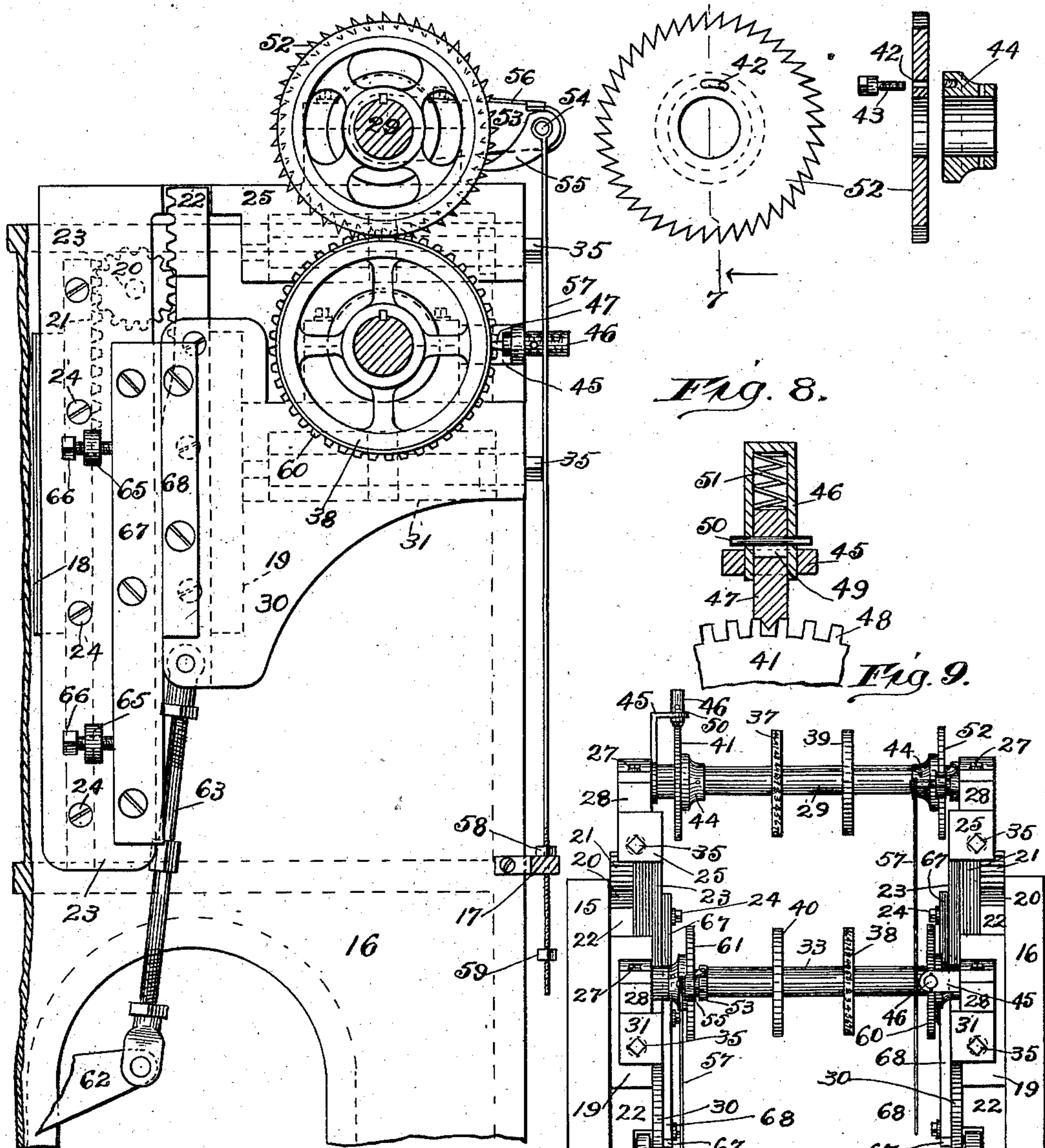


Fig. 9.

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UNITED STATES PATENT OFFICE.

AXEL NORDSTROM, OF CHICAGO, ILLINOIS, ASSIGNOR TO PETER AXEL
BLOMFELDT AND OSCAR RAPP, OF CHICAGO, ILLINOIS.

NUMBERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 741,819, dated October 20, 1903.

Application filed December 26, 1902. Serial No. 136,728. (No model.)

To all whom it may concern:

Be it known that I, AXEL NORDSTROM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Numbering-Machines, of which the following is a specification.

This invention relates to improvements in a machine to be used for numbering various articles, such as sheets of paper, bank-checks, the sheets of sale check-books, railroad, theater, and other tickets, and the like; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the different parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The principal object of the invention is to provide a numbering-machine of the above-named character which shall be simple and inexpensive in construction, strong, durable, and effective in operation, and which may be operated in connection with a printing-press or separately.

Another object is to provide means for adjusting the type-bearing and platen or impression wheels to the utmost nicety, so that the impressions will be perfect and the numbering accurately done in the desired place on the sheet or ticket.

Other objects and advantages of the invention will be disclosed in the subjoined description and explanation.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is an end view of a numbering-machine embodying my invention, showing a portion of the main frame broken away to illustrate the operating mechanism. Fig. 2 is a plan view of one end of the machine and a portion of the shafts which carry the numbering and platen wheels. Fig. 3 is a plan sectional view of the opposite end of the machine, taken on line 3 3 of Fig. 1 looking in the direction indicated by the arrows. Fig. 4 is a view, partly in section and partly in elevation, taken on line 4 4 of Fig. 1 look-

ing in the direction indicated by the arrows. Fig. 5 is a view, partly in section and partly in elevation, showing the shafts and their wheels in the positions they will assume when ready for operation. Fig. 6 is a detached face view of one of the ratchet-wheels. Fig. 7 is a sectional view thereof, taken on line 7 7 and showing the means for adjustably securing it in position. Fig. 8 is a detached fragmental view of one of the locking-wheels and its spring-actuated locking-bolt, and Fig. 9 is a view in side elevation of a portion of the machine.

Like numerals of reference refer to corresponding parts throughout the different views of the drawings.

The reference-numerals 15 and 16 represent the end pieces of the main frame, which may be of any suitable size, form, and material and connected together by means of braces 17 or in any suitable manner. Each of the end pieces is provided on its inner surface with upright and parallel guide-pieces 18 and 19 to form tracks or ways for the guidance and operation of the shaft-hangers and their rack-bars. Journaled on the upper portion of each of the end pieces of the main frame and on the inner side thereof just above the guide-rails 18 and 19 is a pinion 20, with which the rack-bars 21 and 22 of the shaft-carrying hangers mesh. The upper hanger on each end of the frame comprises a vertical portion 23, to which the rack-bar 21 is secured by means of screws 24, and a laterally-projecting portion 25, on which is adjustably mounted, by means of slots 26 in the said portion and screw-bolts 27, the journal-box 28 for the upper shaft 29, as is clearly shown in Fig. 2 of the drawings. The lower hanger on each end of the frame comprises an upright portion 30, to which its rack-bar 22 is secured, and a horizontal or laterally-projecting portion 31, on which is mounted, in a similar manner as above described, a journal-box 32 for the lower shaft 33, which shaft, as well as the upper one, 29, extends from one end of the frame to the other. Each of the journal-boxes 28 for the ends of the upper shaft 29 and each of the journal-boxes 32 for the ends of the lower shaft 33 is provided with an

extension 34, which projects downwardly through an opening in the horizontal portion of each of the hangers and has in its lower portion a screw-threaded opening to receive a screw 35, which is located in projections 36 on each of the hangers, and which screw is used for adjusting the journal-boxes, the slots 26 in the horizontal portion of each of the hangers permitting movement of the securing-bolts 27, as is apparent.

By reference to the drawings, and more particularly to Figs. 1 and 5 thereof, it will be seen that the rack-bar 21 engages one side of the pinion 20, while the rack-bar 22 engages its other side. Mounted on the upper and lower shafts and keyed thereto are wheels 37 and 38, each of which is provided on its periphery with a series of numbers or numeral-type, which wheels I will hereinafter designate as the "type-bearing" wheels. Mounted on each of said shafts and keyed thereto near the type-bearing wheels is a platen or impression wheel 39 and 40, which are so located that the wheel 40 will register with the wheel 37, while the wheel 39 will register with the wheel 38 or be in alinement therewith, as is clearly shown in Fig. 9 of the drawings. Located on the upper shaft near one of its ends is a locking-wheel 41, which is provided on its periphery with a series of teeth and has near its opening through which the shaft 29 extends a slot 42, similar to that shown in Fig. 6 of the drawings, which figure represents one of the ratchet-wheels of the machine. Passing through the slot 42 of the locking-wheel is a screw 43, which engages a collar 44, pinned or otherwise fixed to the shaft, which arrangement allows the locking-wheel to be suitably adjusted. Extending upwardly from one of the journal-boxes 28 is a bracket 45, on the upper portion of which is mounted a tubular piece 46, which carries a dog 47, the lower end of which is beveled to pass between the teeth 48 of the locking-wheel, and which dog is also provided with a slot 49 to receive a pin 50, secured in the piece 46, which has in its cavity a spring 51 to normally project the dog. Located on the opposite end of the shaft 29 from that on which the locking-wheel 41 is mounted is a ratchet driving-wheel 52, which is secured to a collar 44 in a similar manner as the locking-wheel as just above described. Loosely mounted on the shaft 29 near the ratchet-wheel 52 is an arm 53, which carries on its free end a pin 54, on which is pivotally secured a pawl 55, which is held in engagement with the ratchet-teeth by means of a spring 56, secured at one of its ends to said arm. Loosely connected to the pin 54 is a rod 57, which extends downwardly and through an opening in one of the braces 17 and has adjustably secured on its lower portion two nuts 58 and 59 to be used for regulating the stroke of said rod. Mounted on the end of the lower shaft beneath the ratchet-wheel 52 is a locking-wheel 60 of the same

construction as the locking-wheel 41 on the upper shaft, and which wheel is secured on its shaft in the same manner and is engaged by a locking-dog 47 as in the other construction, except that said dog is located horizontally, so as to be out of the way in the vertical movements of the shafts. On the opposite end of the lower shaft 33 is mounted a ratchet-wheel 61, which is operated by means of an arm 53, a spring-actuated pawl 55, and a rod 57, as before set forth. Journaled on the lower portion of each end of the main frame is a rocking bar 62, to one end of which is pivotally secured a connecting-rod 63, the other end of which is pivotally secured to the lower portion of the lower hanger 30, as is shown in Figs. 1, 5, and 9 of the drawings. To the other end of each of the rocking bars 62 is pivotally secured a pitman 64, the other end of which may be secured to an eccentric or crank (not shown) of a machine used for imparting power to the said rocking bar. In order to obviate any looseness between the rack-bars and pinions incident to the wear thereof, I provide each of the upright portions of the upper hangers with lugs 65, having screw-threaded openings to receive screws 66, which rest against a movable rib 67, secured to each of the upright portions of the upper hangers, which ribs will rest against a rib 68 on each of the upright portions of the lower hangers.

The operation of the machine is simple and as follows: Power is applied to the rocking bars 62, through their pitmen 64, which will cause said bars to rock, thus raising and lowering the lower hangers, in which operation the upper hangers, through the instrumentality of the rack-bars 21 and 22 and the pinions 20, will be raised and lowered, so that the type-bearing wheels and platen-wheels on the upper and lower shafts which the said upper and lower hangers carry will be brought together, thus causing the impression to be made on the paper or ticket. In the upward movement of the upper hangers, the nut 59 on the rod 57, which said hangers carry, will impinge the lower surface of the brace 17, through which said rod passes, thus turning the arm 53 on the shaft 29, thereby causing the pawl to engage the ratchet-wheel 52 on said shaft and partially rotating the same. In the downward movement of the lower hangers, the nut 58 on the rod 57, which they carry, will impinge the upper surface of the brace 17 and cause the pawl 55 to engage and turn the ratchet-wheel 61 and the lower shaft, on which it is mounted.

The material to be numbered is preferably carried between the numbering and platen wheels by means of guide-rollers 69 and 70, one pair of which may be journaled on the main frame and the other pair suitably supported near the same on its opposite side. By using the ratchet-wheels and locking-wheels provided with the slots 42 it is appar-

ent that they can be so adjusted on their respective shafts as to regulate the movements of said shafts with great precision and to check their movements at the instant that the impression is being made.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a numbering-machine, the combination with the main frame, of an upper and lower shaft journaled and movable vertically thereon, a type-bearing wheel mounted on one of said shafts and a platen-wheel on the other so as to impinge each other at their peripheries, means to raise and lower and rotate said shafts, and to check their movements at the time the impression is being made, substantially as described.

2. In a numbering-machine, the combination with the main frame, of an upper and lower hanger movably mounted on each end thereof, a pinion journaled on each end of the frame, a rack-bar on each of the upper hangers to engage the pinions on one side and a rack-bar on each of the lower hangers to engage the pinions on the other side, a shaft journaled on the upper and lower hangers respectively, a type-bearing wheel mounted on one of said shafts and a platen-wheel mounted on the other shaft so as to impinge each other at their peripheries, means to raise and lower the hangers and to rotate said shafts, substantially as described.

3. In a numbering-machine, the combination with the main frame, of an upper and lower shaft journaled and movable vertically thereon, a type-bearing wheel and a platen-wheel mounted on each of said shafts so that the type-bearing wheel on one shaft will impinge the platen-wheel on the other shaft at their peripheries, means to raise, lower and rotate said shafts, and to check their movements at the time the impression is being made, substantially as described.

4. In a numbering-machine, the combination with the main frame, of an upper and lower shaft journaled and movable vertically thereon, a type-bearing wheel mounted on one shaft and a platen-wheel on the other so as to impinge each other at their peripheries, a locking-wheel on each of said shafts, a spring-actuated locking-dog to engage each of said locking-wheels so as to check the movements of the shafts at the time the impression is being made, means to rotate the shafts, substantially as described.

5. In a numbering-machine, the combination with the main frame, of an upper and lower shaft journaled and movable vertically thereon, a type-bearing wheel and a platen-wheel mounted on each of said shafts so that the type-bearing wheel on one shaft will impinge the platen-wheel on the other shaft at their peripheries, a locking-wheel on each of said shafts, a spring-actuated dog to engage each of said locking-wheels so as to check the

movements of said shafts at the time the impression is being made, means to raise, lower and rotate the shafts, substantially as described.

6. In a numbering-machine, the combination with the main frame, of an upper and lower shaft journaled and movable vertically thereon, a type-bearing wheel mounted on one shaft and a platen-wheel on the other so as to impinge each other at their peripheries, a locking-wheel adjustably secured on each of said shafts, a spring-actuated dog to engage each of said locking-wheels so as to check the movements of said shafts at the time the impression is being made, means to raise, lower and rotate the shafts, substantially as described.

7. In a numbering-machine, the combination with the main frame having at each of its ends a guideway, of an upper and lower hanger located in each of said guideways, a pinion journaled on each end of the frame, a rack-bar on each of the upper hangers to engage the pinions on one side and a rack-bar on each of the lower hangers to engage the pinions on the other side, a shaft journaled on the upper and lower hangers respectively, a type-bearing wheel mounted on one of said shafts and a platen-wheel on the other shaft so as to impinge each other at their peripheries, a locking-wheel adjustably secured on each of said shafts, a spring-actuated dog to engage each of said locking-wheels, means to raise and lower the hangers and to rotate said shafts, substantially as described.

8. In a numbering-machine, the combination with the main frame, of an upper and lower hanger movably mounted on each end thereof, a pinion journaled on each end of the frame, a rack-bar on each of the upper hangers to engage the pinions on one side and a rack-bar on each of the lower hangers to engage the pinion on the other side, a shaft journaled on the upper and lower hangers respectively, a type-bearing wheel mounted on one of said shafts and a platen-wheel mounted on the other shaft so as to impinge each other at their peripheries, a ratchet-wheel fixed on each of said shafts, an arm loosely mounted on each of said shafts, a pawl pivotally secured on each of said arms to engage the ratchet-wheels, a rod connected at one of its ends to each of the arms and having on its lower portion adjustable nuts to limit its movement, means to raise and lower the hangers, substantially as described.

9. In a numbering-machine, the combination with the main frame, of an upper and lower hanger movably mounted on each end thereof, a pinion journaled on each end of the frame, a rack-bar on each of the upper hangers to engage the pinions on one side and a rack-bar on each of the lower hangers to engage the pinion on the other side, a shaft journaled on the upper and lower hangers respectively, a type-bearing wheel mounted on

one of said shafts and a platen-wheel mounted on the other shaft so as to impinge each other at their peripheries, a ratchet-wheel adjustably fixed on each of said shafts, an arm
5 loosely mounted on each of said shafts, a pawl pivotally secured on each of said arms to engage the ratchet-wheels, a rod connected at one of its ends to each of the arms and having on its lower portion adjustable means to limit its movement, a locking-wheel adjustably secured on each of said shafts, a spring-actuated dog to engage each of said locking-wheels, means to raise and lower the hangers, substantially as described.

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