925,879.

T. C. DEXTER.

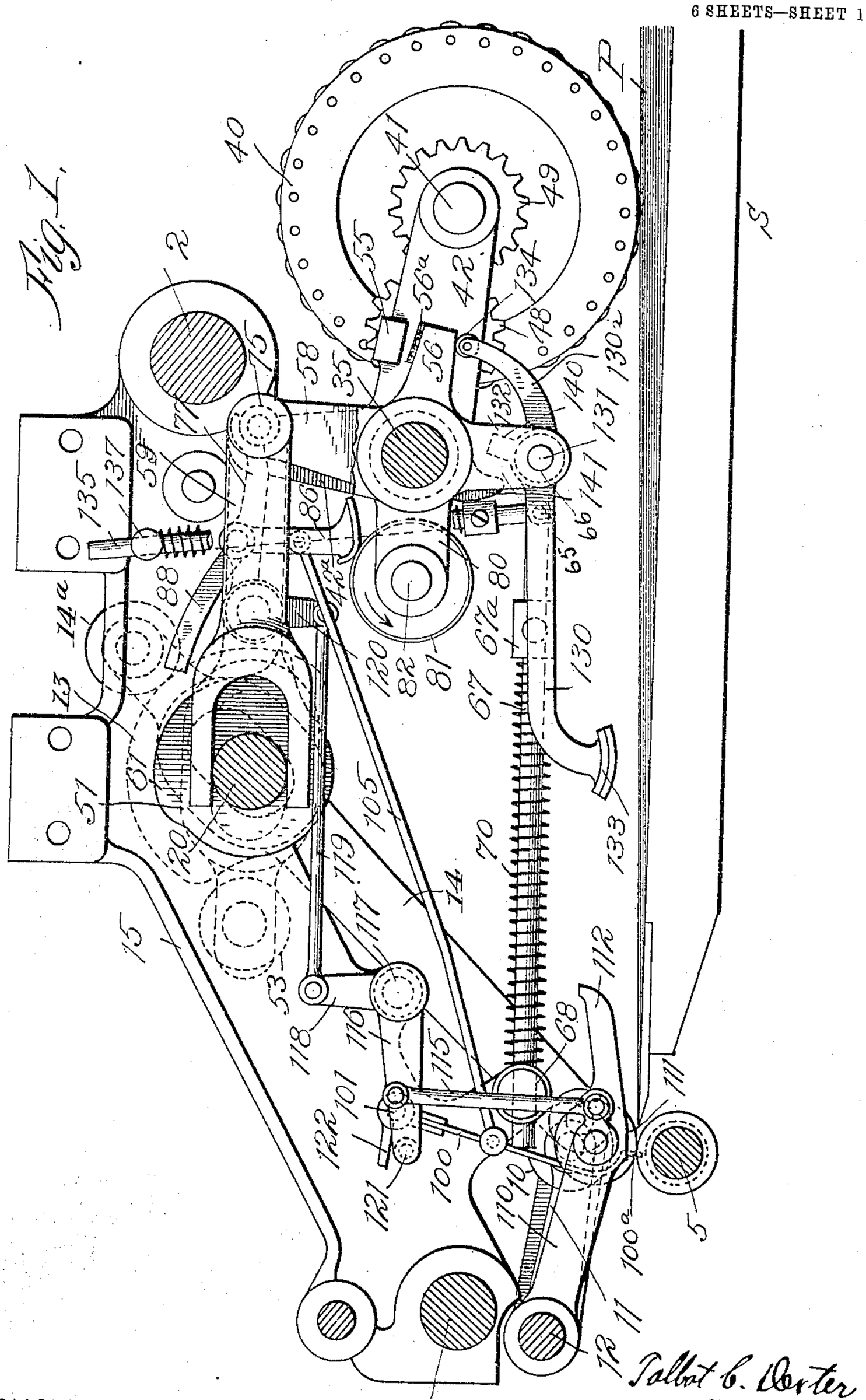
PAPER FEEDING MACHINE.

APPLICATION FILED JUNE 4, 1908.

Patented June 22, 1909.

6 SHEETS—SHEET 1.

Fig. 1.



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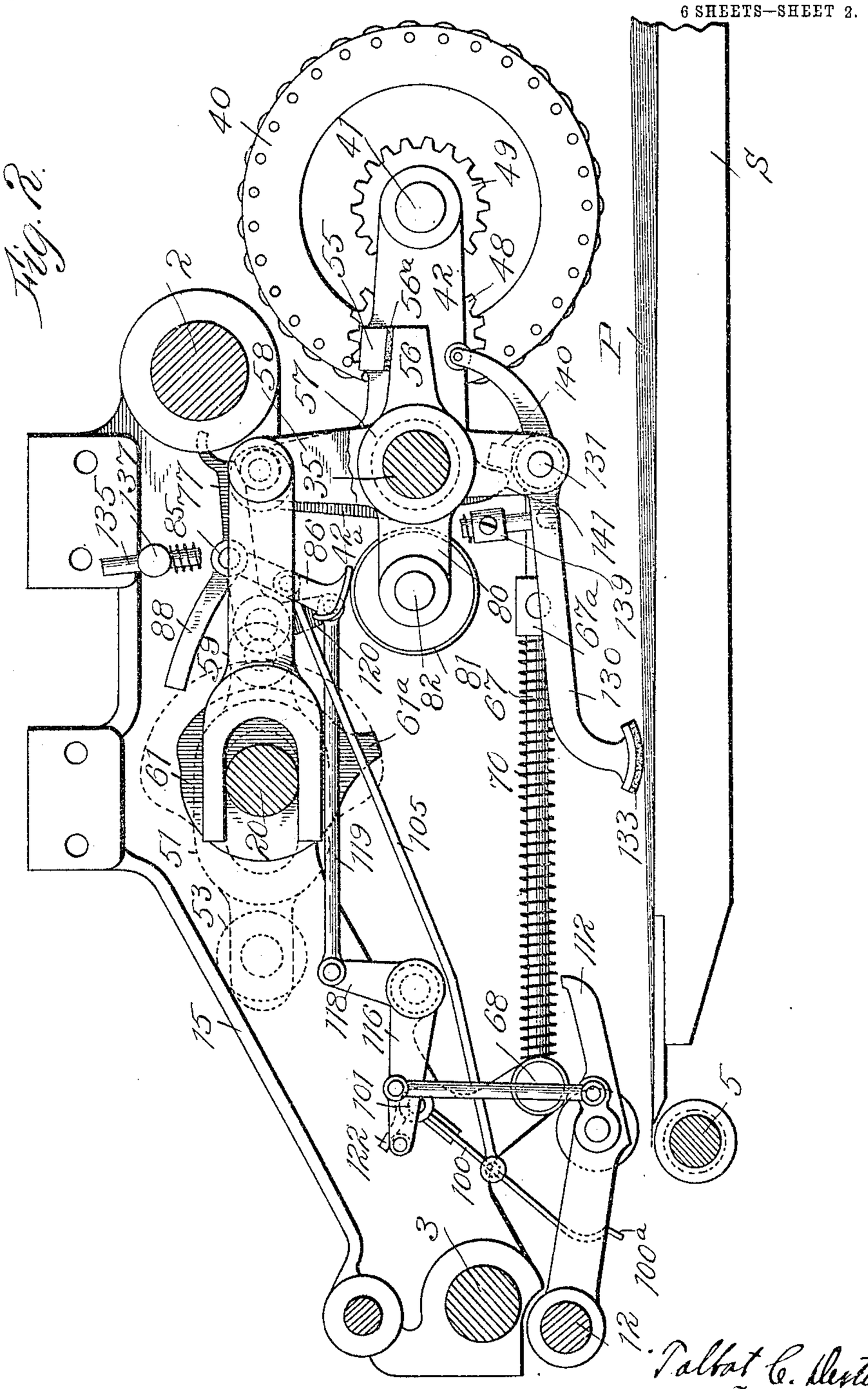
6 SHEETS—SHEET 2.

Fig. 2.



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6 SHEETS—SHEET 3.

Fig. 3.

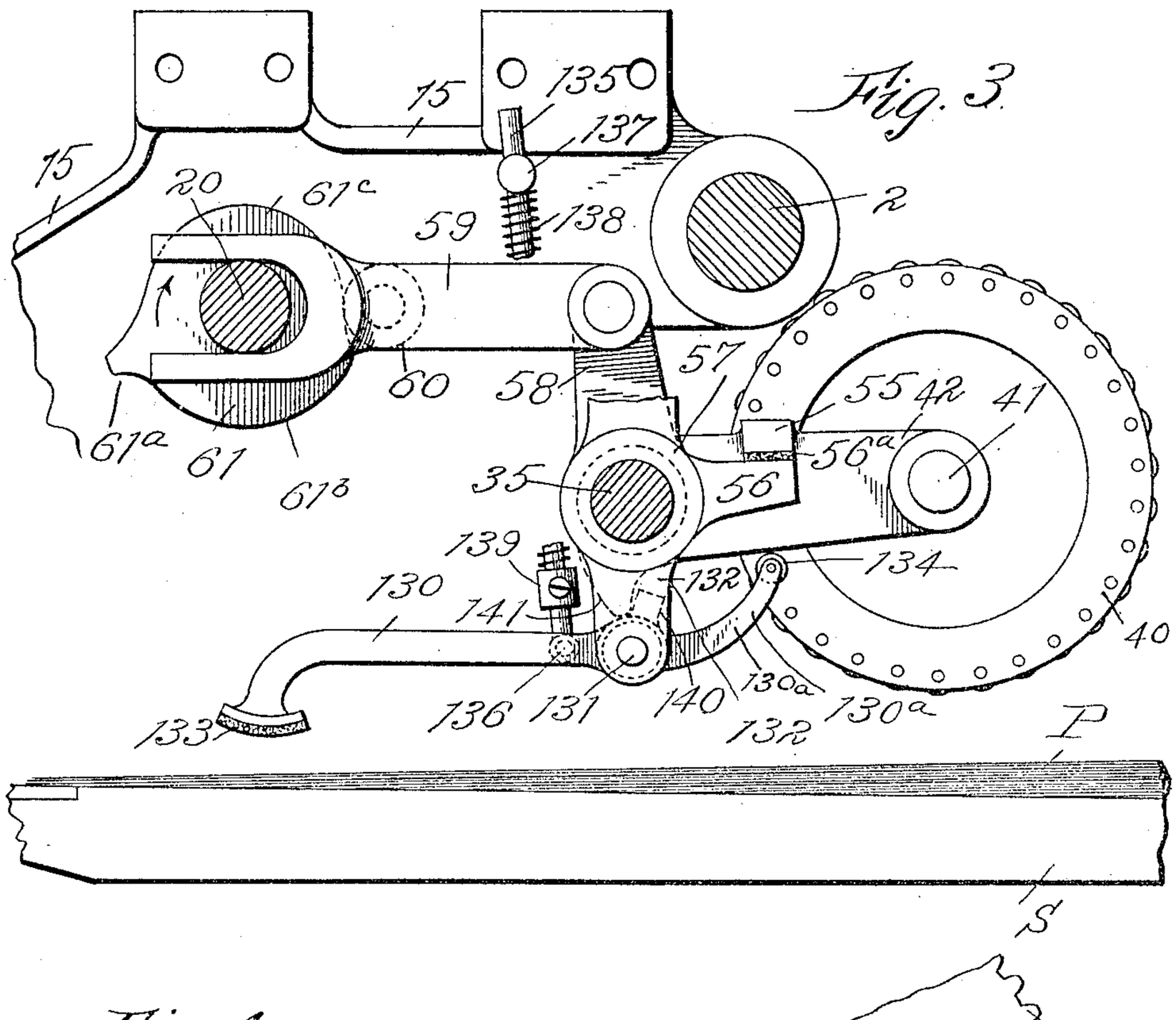


Fig. 4.

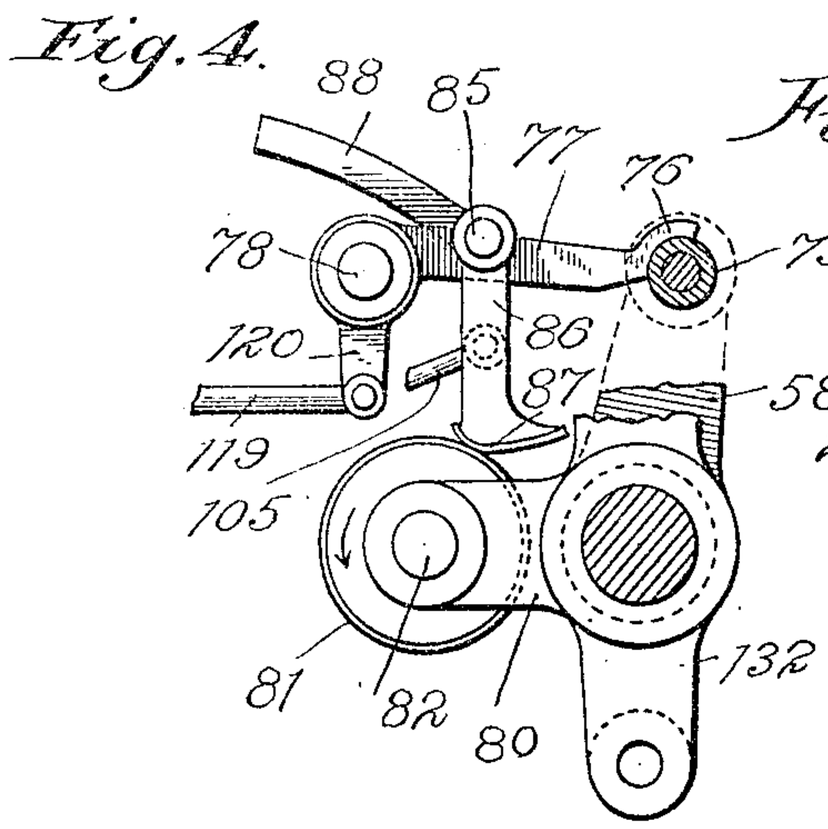
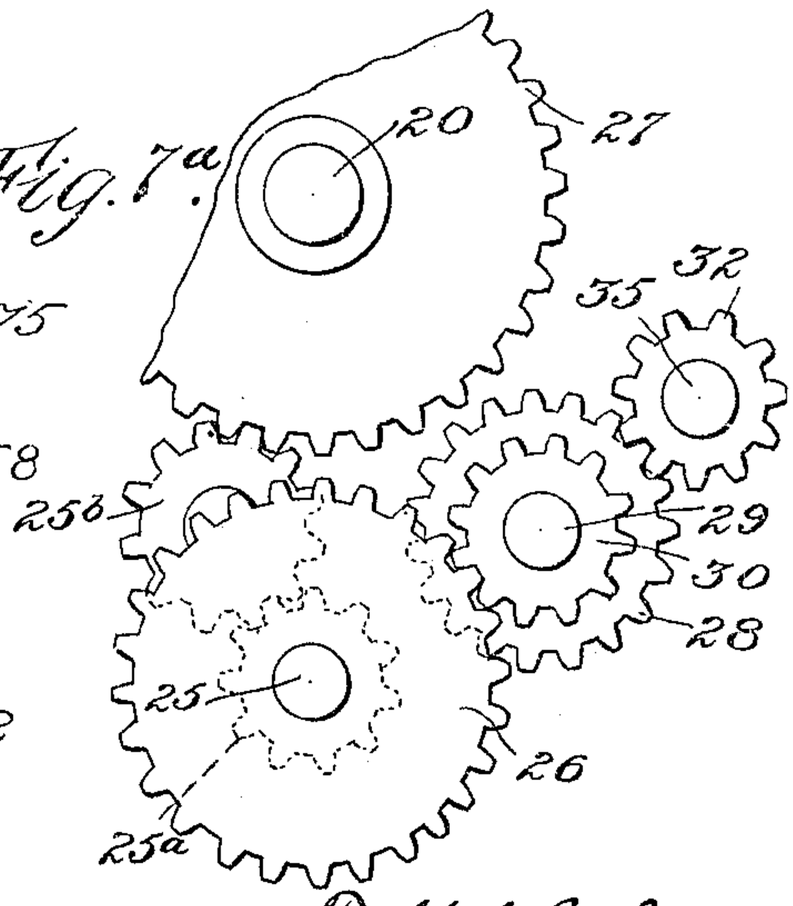


Fig. 7a.



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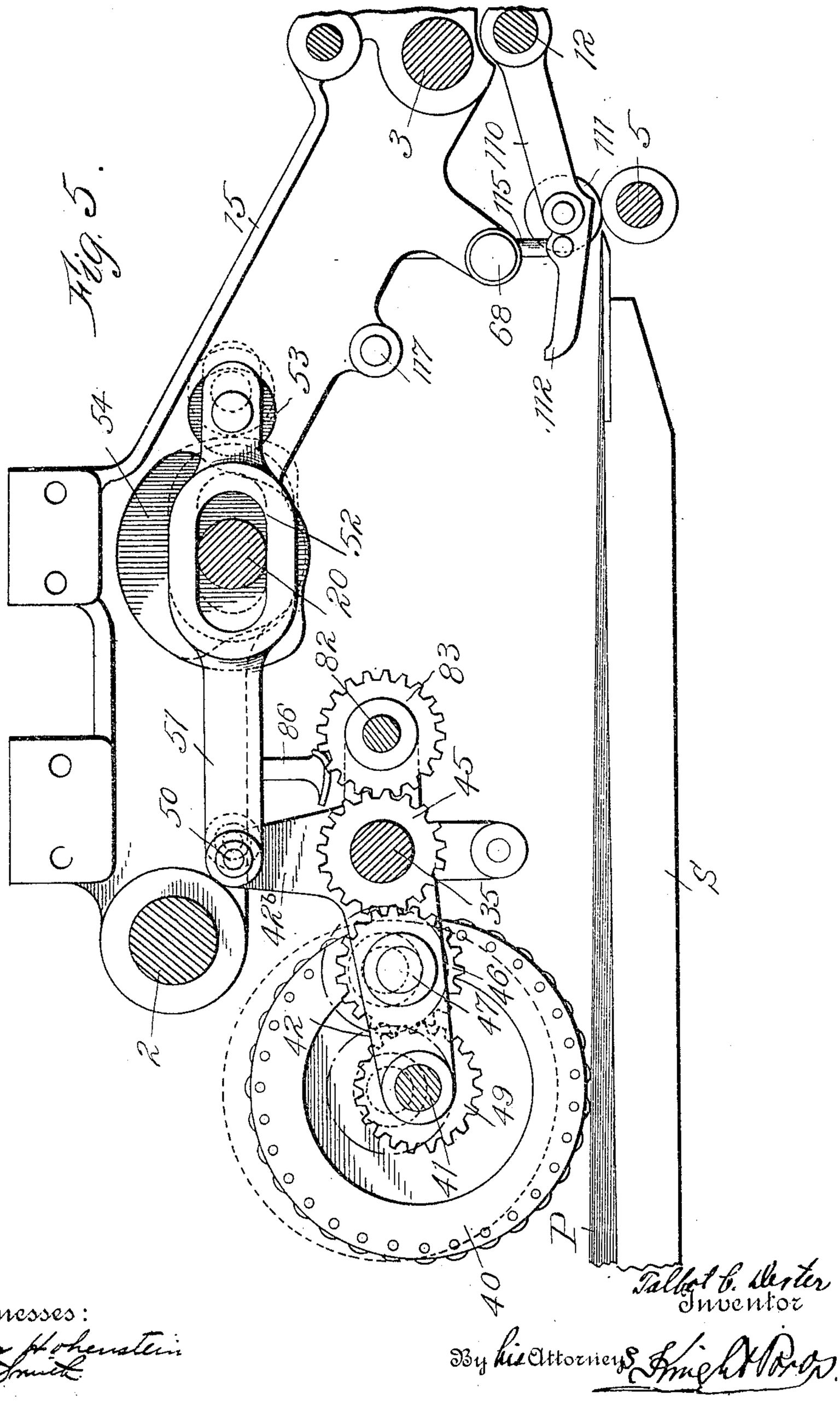
6 SHEETS—SHEET 4.

Fig. 5.



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APPLICATION FILED JUNE 4, 1908.

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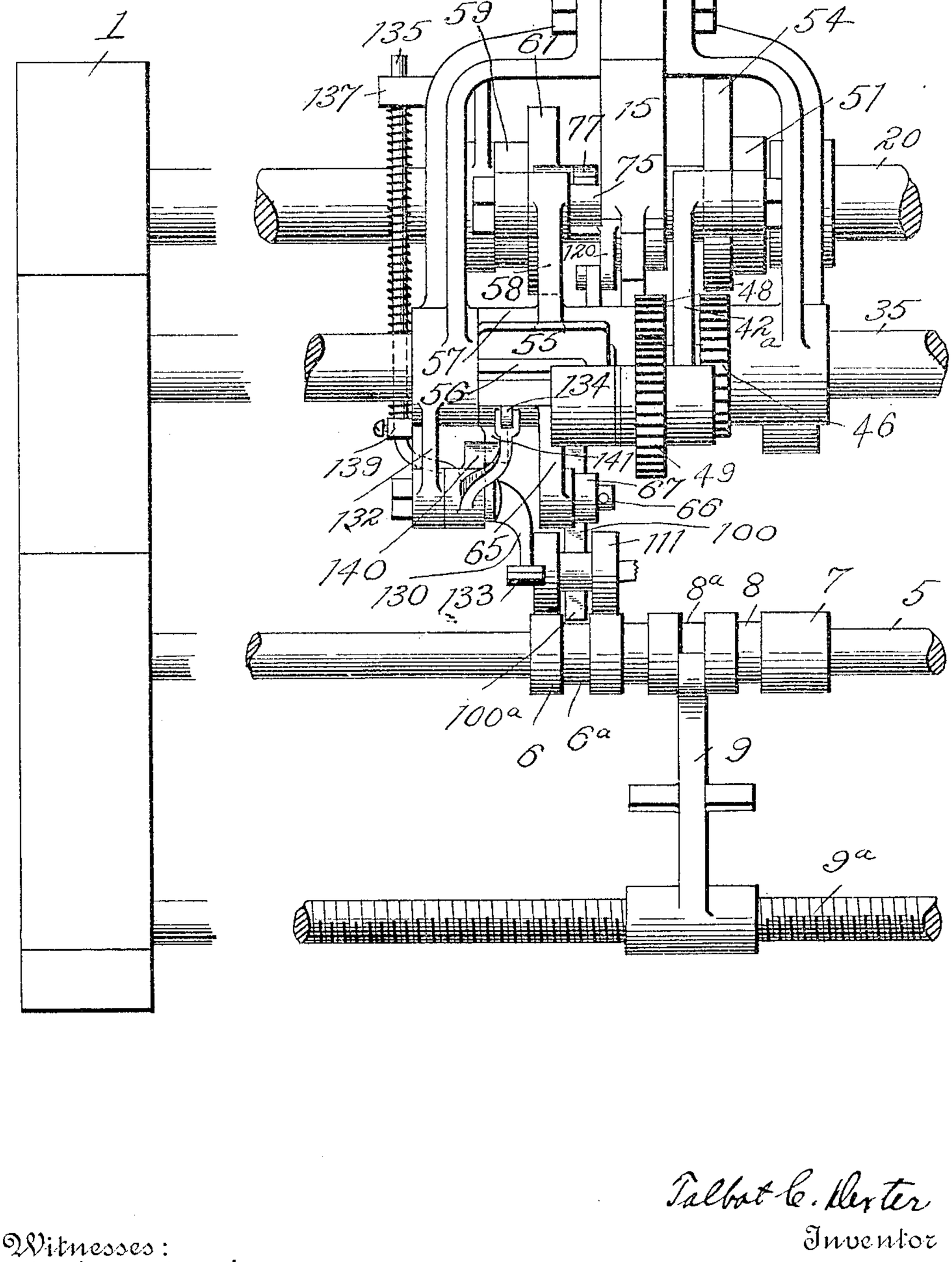
6 SHEETS—SHEET 5.

Fig. 6.



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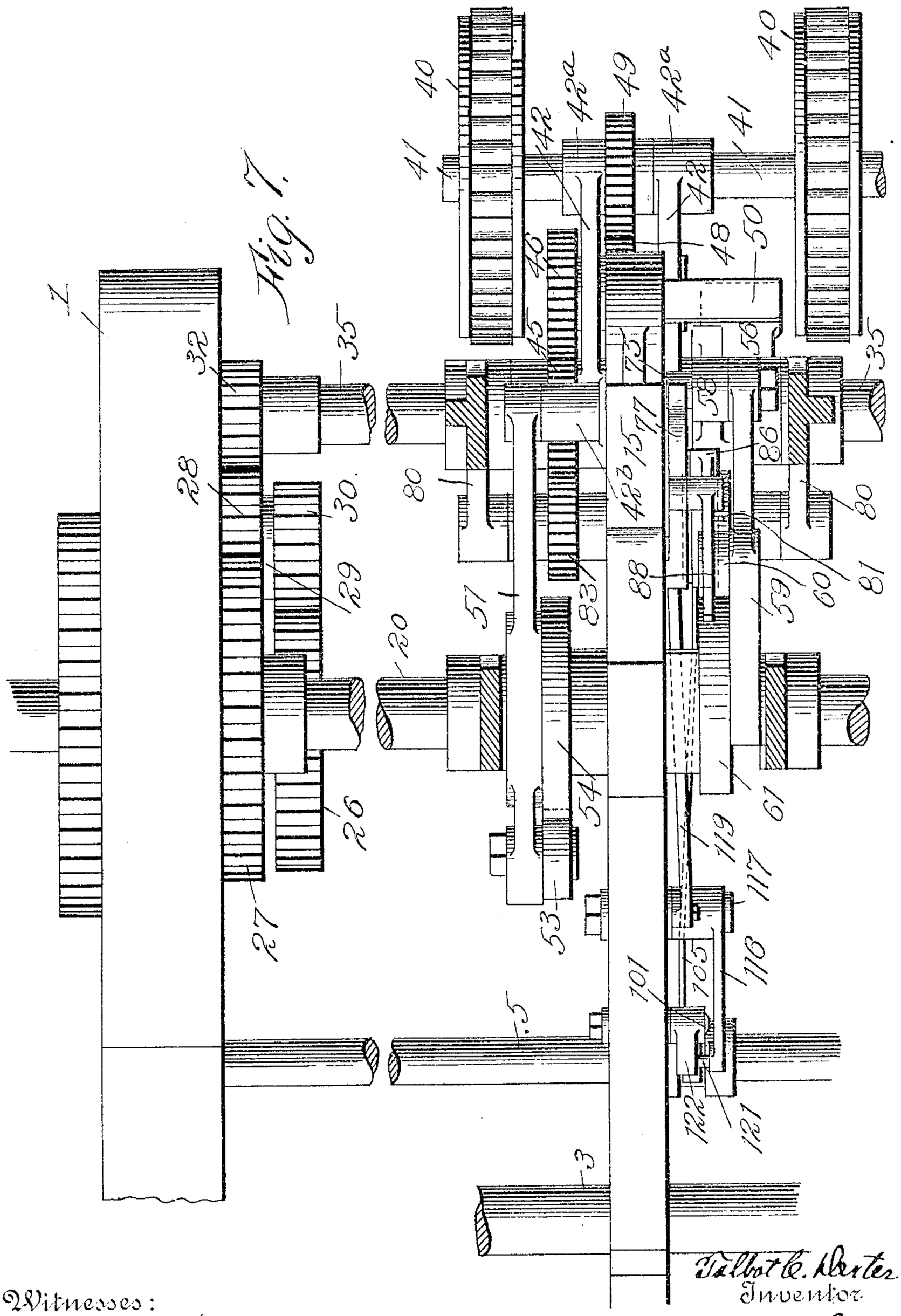
6 SHEETS—SHEET 6.

Fig. 7.



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UNITED STATES PATENT OFFICE.

TALBOT C. DEXTER, OF PEARL RIVER, NEW YORK.

PAPER-FEEDING MACHINE.

No. 925,879. Specification of Letters Patent. Patented June 22, 1909.

Application filed June 4, 1908. Serial No. 436,637.

To all whom it may concern:

Be it known that I, TALBOT C. DEXTER, a citizen of the United States, and a resident of Pearl River, in the county of Rockland and State of New York, have invented certain new and useful Improvements in Paper-Feeding Machines, of which the following is a specification.

My present invention relates generally to improvements in paper feeding machines, and particularly to feeding machines of the sheet combing type, in which the pile of sheets is acted upon by combing feeding devices which comb or feather out the top sheets of the pile to gradually separate the successive sheets near the top so they may be drawn from the pile periodically and fed to any machine arranged to operate upon the individual sheets.

More particularly my present invention relates to improvements in the type of combing feeding machines set forth in Letters Patent Nos. 886,117 and 886,118, granted to me April 28th, 1908. In the machine of these patents the automatically controlled sheet moving instruments (preferably sheet combing wheels) are raised and lowered with reference to the pile of sheets under the control of a sheet actuated tripping device through the interposition of a vertically arranged spring device, a movable member on which the sheet actuated tripper acts being arranged to normally restrain the action of the spring device.

In my present invention I have re-arranged the controlling mechanism of the sheet moving instruments or combers so that the comber elevating spring device operates in a horizontal plane, and is normally held out of action by a latching device which engages a part projecting from the comber elevating arm. This general re-arrangement of the comber controlling mechanism constitutes the first feature of my present invention.

Another feature of importance in my present improvements, consists of a novel form of mechanism for tripping or releasing the comber elevating mechanism. This part of the mechanism comprises in combination with the latching arm which engages some movable part of the comber elevating mechanism, a latch releasing device consisting essentially of a continually traveling friction surface and a friction shoe controlled by a sheet actuated tripper and moved by the action of the sheet into engagement with the traveling frictional surface to thereby cause the tripping or releasing of the instrument elevating means. More specifically this part of my invention includes a pivotally mounted latch arm engaging a part projecting from the comber elevating arm (or from any other movable part of the mechanism which moves with the comber), a latch-tripping arm pivotally mounted upon said latching arm and carrying a friction shoe, a continuously running friction roll journaled adjacent to said friction shoe, and a sheet actuated tripping finger suitably connected with said latch-tripping arm, so as to move said frictional shoe into frictional engagement with said friction roll when a sheet is moved into registered position, to thereby trip the latch and permit the comber elevating mechanism to operate.

My invention also contemplates suitable connections between said latching arm and the sheet actuated tripping finger and coöperating rollers to effect the movement of said tripping finger and rollers away from the path of the sheets after the arrest of the sheet moving instruments to free the sheets to the action of the sheet delivery mechanism.

My invention also includes an automatically controlled sheet engaging finger, which is arranged to engage the top registered sheet of a pile when the sheet moving instrument is thrown out of action for the purpose of preventing accidental displacement of the sheet from any cause during the interval between the elevation of the sheet moving instrument and the engagement of the registered sheet by the delivery mechanism.

In addition to the above mentioned main features, my invention includes numerous features of construction, and in order that my invention may be fully understood, I will first describe the same with reference to the accompanying drawings, and afterward point out the novelty more particularly in the annexed claims.

In said drawings Figure 1 is a vertical longitudinal view of a paper feeding machine embodying my invention, and showing the parts in position for combing a sheet. Fig. 2 is a similar view showing the parts in

the position assumed immediately after the combing operation has been arrested, the latch being tripped, the comber, the sheet actuated tripping finger and coöperating rollers being elevated, and the sheet engaging finger being in engagement with the registered sheet for holding it in position. Fig. 3 is a similar view of a part of the same mechanism showing a third position of said parts, in which position the sheet engaging finger is raised away from the sheet preparatory to the operation of the sheet delivery mechanism. Fig. 4 is a detail sectional elevation with parts broken away showing the comber controlling latch and the latch-tripping arm. Fig. 5 is a view similar to Fig. 1 taken from the opposite side of the machine and showing additional parts of the comber operating mechanism. Fig. 6 is a detail rear elevation of part of a combing machine showing the arrangement of the comber operating and controlling mechanisms, the combing wheels being omitted in the interest of clearness. Fig. 7 is a horizontal sectional plan view of the mechanism shown in Figs. 1 and 2. Fig. 7[a] is a diagrammatic elevation showing the arrangement of gears for driving the main cam shaft and the comber operating shaft.

Sheet feeding machines of the type to which my present invention relates are provided with two sets of sheet moving devices arranged to operate at opposite sides of the machine. In the accompanying drawings, I have shown only one-half of the machine, including only one of these sheet moving devices, but it will be understood that two such devices of the same construction are employed, each being independently controlled by a sheet actuated tripping device, as hereinafter explained.

The frame-work of my improved machine may be of any suitable construction to properly support the working parts hereinafter referred to.

In the drawings, 1 represents one of the vertical side frames. The side frames are suitably braced to make them rigid by means of stay rods 2, 3, and other frame parts not shown, and within the frame is provided a suitable table or support S for carrying a pile of sheets, indicated by the reference letter P.

5 is a constantly driven shaft carrying the lower feed rollers 6 and 7, the shaft being braced at intervals by suitable bearing brackets (not shown). This shaft 5 may be driven in any suitable manner, well understood in the art, but not shown herein. The rollers 6 are formed with a peripheral groove 6[a] into which the sheet actuated tripping fingers project as hereinafter explained. The rollers 7 are the usual plain feed rollers. Rollers 6 and 7 are connected through an intervening sleeve 8 which is splined to shaft 5 so as to rotate with the shaft, and at the same time permit freedom of adjustment longitudinally of the shaft. The adjustment of these rollers upon the shaft 5 transversely of the feeding machine is effected through an arm 9 threaded upon an adjusting screw 9[a] and engaging an annular groove 8[a] in sleeve 8. This adjustment forms no part of my present invention but is covered in another application Serial No. 452,311 filed by me September 9, 1908.

10 are the drop rollers journaled in the rock arms 11 mounted upon a transverse rock shaft 12. The drop rollers 10 are supported above two or more of the under feed rollers 7, with which they coöperate. The rock shaft 12 extends transversely of the machine, above the constantly running lower shaft 5, and is suitably braced between its ends by two or more bracket arms, (not shown), rigidly secured to the auxiliary longitudinal frame pieces or saddles 15. The rock shaft 12 is operated by any of the usual forms of mechanism, such for instance, as shown, by cam 13 on shaft 20 acting through pitman 14 having antifriction roller 14[a], whereby the drop rollers 10 are periodically lowered and raised into and out of engagement with the coöperating under rollers 7, for performing their function of feeding off the successive sheets.

The main cam shaft 20 extends transversely of the machine and is suitably journaled in the main side frames 1 and the auxiliary longitudinal frame pieces 15. This shaft 20 may be driven in any suitable manner, such for instance, as by a large gear 27 mounted upon it and driven by an intermediate gear 25[b] which meshes with and is driven by pinion 25[a] on the main power shaft 25. The power shaft 25 is journaled in the machine frame and also carries a large gear 26, which meshes with and drives a smaller gear 30 secured to a larger gear 28, journaled upon a stud 29, projecting from the side frame of the machine. The gear 28 meshes with and drives a small gear 32 keyed to the projecting end of the comber driving shaft 35, hereinafter referred to. This gear arrangement is clearly shown in Figs. 7 and 7[a] of the drawings.

In the place of employing two single combing wheels arranged transversely of the machine as heretofore in this type of feeding machine, I prefer to employ pairs of combing wheels, one pair at each side of the machine in the position in which the single combing wheels were formerly arranged.

40 are the combing wheels keyed to the opposite ends of a short shaft 41, which is journaled freely upon ends 42[a] of a pair of rock arms 42 journaled freely upon the shaft 35. This shaft 35 has keyed to it a gear 45, which meshes with and drives a gear 46 mounted upon a short shaft 47 journaled in one of the

rock arms 42, and carrying at its inner end a similar gear 48 which meshes with a gear 49 keyed to the short shaft 41, upon which the combing wheels are mounted. By this means the combing wheels are rapidly and constantly rotated, whether in elevated or lowered position.

Formed integral with and projecting upwardly from one of the comber support rock arms 42, is a rock arm 42^b, to the upper end of which is pivotally connected at 50 the rear end of a pitman or link 51, formed between its ends with a horizontal guide loop or slot 52, through which the cam shaft 20 extends for supporting and guiding the pitman 51. The rear end of the pitman 51 carries an antifriction roller 53, which is adapted to engage the periphery of a cam 54 keyed to the shaft 20 alongside the pitman 51. The purpose of this cam and pitman connection with the support for the combing wheels is to intermittently raise the combing wheels from the pile of sheets at times corresponding with the operation of the mechanism with which the combing wheels coöperate. This cam mechanism operates independently of the automatic tripping mechanism, and without regard to the position of the sheets which are being fed from the pile, it being necessary to provide some such periodically operating mechanism for the combers to avoid the feeding of sheets from the pile at improper times.

Projecting laterally from one of the comber supporting rock arms 42, is an integral lug or finger 55, which extends over a rearwardly projecting rock arm 56 secured to a sleeve 57, journaled upon the shaft 35. The rock arm 56 preferably carries a small block of cushioning material 56^a, and by its engagement with the lug or finger 55, lifts the pair of combing wheels away from the pile in a manner hereinafter explained. The rock arm 56 is moved in one direction for lifting the combing wheels by a spring mechanism which is normally restrained by a latching device which is periodically released by the sheet actuated tripping device hereinafter explained. The rock arm 56 is moved in the opposite direction to allow the combing wheels to move by gravity into engagement with the pile of sheets by the action of a cam as will now be explained.

Sleeve 57 has at its end, adjacent to the rock arm 56, an upwardly extending rock arm 58, to the upper end of which is pivotally connected a horizontal pitman 59, formed with a yoke-shaped forward end, which straddles the shaft 20. The shaft 20 carries a peripheral cam 61, which engages an antifriction roller 60 journaled upon the pitman 59, whereby the rock arms 56 and 58 are operated. Cam 61 has an extreme or high portion 61^a, an intermediate portion 61^b, and a main low portion 61^c. Once in each revolution of the shaft 20 the high portion 61^a engages roller 60 to reset the spring and latching mechanisms (hereinafter described) and allow the combing wheel to rest upon the pile. The intermediate portion 61^b of the cam 61 permits the rocking of parts 56, 57 and 58 under the control of the sheet actuated tripping mechanism hereinafter referred to by the action of the spring mechanism to be presently described. The low portion 61^c of the said cam permits a further movement of parts 56, 57 and 58 for further elevating the combing wheels and for raising the sheet holding finger hereinafter explained.

Formed integral with, or rigidly connected with the sleeve 57, is a downwardly projecting arm or lug 65, to which is pivotally connected at 66, the rear end of a rod 67, which projects horizontally forward and passes freely through a guide lug 68, mounted upon one of the auxiliary machine frames 15. Surrounding the rod 67, and confined between a collar 67^a thereon and the guide lug 68, is an extension spring 70, which tends to move forwardly the arm 65 for raising the rock arm 56 into engagement with the finger 55 for raising the comber away from the pile of sheets. This action of the spring 70 is normally restrained by a latching device, which will presently be described, and is further under the control of the cam 61 above explained, by which cam the spring device is reset once in every revolution of the cam shaft. The cam 61, in addition to resetting the spring device and latch, acts also as a timing device, and has a means for controlling the operation of the sheet holding finger hereinafter explained.

The pivotal connection between the rock arm 58 and pitman 59 is extended to support the freely journaled antifriction roller 75, with which the rear recessed end 76 of a latching arm 77 is adapted to engage. The latching arm 77 is pivotally mounted at 78 upon one of the auxiliary frame pieces 15, so that when the latching arm is in engagement with the antifriction roller 75, the connected parts 56, 58 and 65, will be held against motion and the spring 70 will be held under tension.

80 are forwardly projecting bracket arms extending from the journal portion of the main supports or brackets of the combing mechanism, and 81 is a friction roller mounted upon a short shaft 82, which is freely journaled in the brackets 80, and has keyed to it a gear wheel 83, which meshes with driving gear 45, upon the comber operating shaft 35, by which the friction roller 81 is constantly and rapidly rotated.

Freely pivoted at 85 upon the latching arm 77, is a depending latch-tripping arm 86 formed at its lower end with a curved

friction shoe 87, which is adapted to come into contact with the rapidly revolving friction roller 81 to be operated thereby in the manner presently to be explained. Rigidly connected with the latch-tripping arm 86 is a forwardly extending weight 88, the purpose of which is to hold the shoe 87 normally out of engagement with the friction wheel 81.

From the illustration of the latch and the latch-tripping arm, particularly in Fig. 4, it will be observed that the length of the latch-tripping arm is slightly greater than the distance between the pivot 85 and the periphery of the friction wheel 81, assuming the latch 77 to be in its engaged position, as shown in said figure of the drawings. This being true, it will be clear that when the shoe 87 is moved into frictional engagement with the friction wheel 81, the arm 86 will be moved upon its pivot across the line between its pivot 85 and shaft 82, with the result that the latch 77 must be raised upon is pivot 78 to disengage its end 76 from the roller 75 upon the rock arm 58, thereby releasing said rock arm and the parts connected therewith. This movement of the shoe of the latch-tripping arm into engagement with the friction wheel 81, is controlled by the sheet actuated tripping device, which will now be explained.

Turning now to the sheet controlled tripping mechanism for releasing the comber elevating means, it will be observed that 100 is a sheet actuated tripping finger freely journaled at 101 upon a pin projecting laterally from auxiliary frame 15. The lower end of this tripping finger 100 is shaped to present a vertical face 100ª across the plane of feed of the sheets, when said tripping finger is in tripping position. This tripping finger 100 is connected through a rod 105 with the latch-tripping arm 86, said rod 105 being pivotally connected at its opposite ends to finger 100 and arm 86, as clearly shown.

110 is a rock arm freely journaled upon the transverse shaft 12 and carrying in its forward end the freely journaled rollers 111, which operate in peripheral contact with the rollers 6 upon shaft 5. The rock arm 110 has a rearwardly projecting guide finger 112 for confining the sheets against vertical displacement as they pass into registered position between rollers 6 and 111. A pitman or finger 115 connects the rock arm 110 with a rock arm 116, pivotally mounted at 117 upon the frame piece 15, said arm 116 being integral with or connected to an upwardly projecting rock arm 118, which is in turn connected through a rod or finger 119 with a downwardly projecting rock arm 120, formed integral with or rigidly connected to the latch arm 77. The rock arm 116 just referred to, carries at its extreme forward end a laterally projecting pin or lug 121, which rests normally beneath a forwardly projecting arm 112 extending from the hub portion of the tripping finger 100.

From this description of the sheet actuated tripping mechanism it will be observed that when a sheet moves forwardly upon the pile and engages the tripping finger 100, said tripping finger will be moved by the sheet, and acting through rod 105 will draw the arm 86 forwardly until the friction shoe 87 comes into frictional contact with the continuously revolving friction wheel 81. The moment this happens the latch-tripping arm 86 will be carried forward quickly from the position shown in Fig. 1 into the position shown in Fig. 2, with the result that the latch 77 will be disengaged from rock arm 58 to allow the comber elevating spring to act. The upward movement of the latch 77 acting through rock arm 120, rod 119 and rock arms 118 and 116, will raise the rollers 111 and rock the tripping finger 100 away from the registered sheet, this position of the parts being shown in Fig. 2.

130 is a sheet engaging arm or lever pivoted at 131 to the downwardly projecting bracket arm 132. The sheet engaging shoe 133, preferably faced with rubber or other friction material, is at the forward end of the arm or lever 130, while the rear upwardly curved end 130ª of said arm or lever carries an antifriction roller 134, which under certain conditions is adapted to be engaged by the face of the rearwardly projecting rock arm 56 of the comber elevating means.

135 is a rod pivoted at its lower end 136 to the sheet engaging arm or lever 130 forwardly of the pivot of said arm or lever. This rod 135 passes upwardly through a guide lug 137 upon the machine frame piece 15, and surrounding said rod 135 is an expansion spring 138 confined between said lug 137 and an adjustable collar 139 mounted adjacent to the lower end of the rod. This spring actuated rod 136 tends to move the shoe 133 of arm or lever 130 into engagement with the top sheet of the pile.

Integral with or secured to the hub portion of the arm or lever 130, is an upwardly projecting lug 140 arranged in the path of a downwardly projecting finger 141, which is formed integral with and projects downwardly from the hub or sleeve 57 of the comber elevating mechanism.

When the combing wheels are operating in engagement with the pile of sheets as shown in Fig. 1, it will be observed that the engagement of rock arm 56 with antifriction roller 134, holds the friction shoe 133 of arm or lever 130 up out of engagement with the pile of sheets so that the sheets will respond freely to the action of the combing wheels.

When a sheet reaches registered position, under the action of the combing wheels and by the mechanism described, the combing wheels are raised away from the pile of sheets, the disengagement of rock arm 56 from antifriction roller 134, permitting the spring 135 to force the friction shoe 133 into engagement with the registered sheet to hold it in registered position from the time that the combing wheels release it until the moment when the sheet delivery drop rollers engage the sheet for delivering it from the pile. This second position is shown in Fig. 2. Immediately preceding the operation of the sheet delivery drop rollers, the friction shoe 133 is again raised from the top sheet by the engagement of finger 141 with lug 140, so as to free the sheet to the action of the drop roller mechanism. This position of the sheet holding arm or lever 130 is shown in Fig. 3 of the drawings. It will, of course, be observed that while the first movement of the sheet holding arm or lever 130 into engagement with the sheet, is caused by the elevation of the combing wheels, in which action the antifriction roller 60 (which has been held away from controlling cam 61 by the engagement of latching arm 77 with rock arm 58) moves into engagement with intermediate portions 61^b of cam 61, the second movement of the sheet holding arm or lever 130 away from the pile is caused by antifriction roller 60 moving from intermediate portion 61^b to low portion 61^c of the controlling cam, the movement of the comber elevating parts for effecting this being caused by the comber elevating spring 70.

The operation of my improved machine will be clear from the above description, with the added explanation that immediately following the delivery of each sheet by the action of the drop roller mechanism, the engagement of the high portion 61^a of cam 61 with antifriction roller 60 rocks the comber elevating frame to compress the spring 70 and permit the latch 77 to again engage the antifriction roller 75 for holding said parts in proper position for a succeeding elevation of the combing wheels. As the comber elevating mechanism is reset in this way, it will be clear that the weights 88 will move the latch tripping arm 86 rearwardly, and as the latch 77 moves into latched position, the tripping finger 100 and coöperating rollers 111 will be returned to their normal position with reference to the plane of feed of the sheets. This resetting of the comber elevating mechanism relieves the combers so they may fall by gravity into engagement with the pile, timed, of course, by the controlling cam 54.

The feature which I would mainly emphasize in my present invention, is the arrangement of the continuously traveling friction surface, in combination with the latch tripping friction arm under the control of a sheet actuated tripping finger, by which the comber elevating mechanism is controlled. I consider this feature to be broadly novel, and desire to cover it in the following claims, without respect to the details of construction.

What I claim is:

1. In a paper feeding machine, the combination of a sheet moving instrument, and automatic means for arresting the operation of said instrument, including a movably mounted restraining member, a moving frictional surface, and a sheet controlled tripping member connected with said restraining member and arranged to be thrown into engagement with said frictional surface by the action of a sheet and to be actuated by said frictional surface for releasing said arresting means, said tripping member being of greater length than the distance between said restraining member and said frictional surface when said restraining member is in active position.

2. In a paper feeding machine, the combination with a sheet moving instrument, of automatic means for arresting the operation of said instrument, including a rotating frictional driving surface, a tripping member mounted upon a pivot movable toward and away from said frictional driving surface, said tripping member being of slightly greater length than the distance between said pivot and said driving surface in the normal position of said pivot, and a sheet actuated device connected with said tripping member and adapted to move it into frictional engagement with said driving surface to be actuated thereby for releasing said arresting means.

3. In a paper feeding machine, the combination with a sheet moving instrument, of automatic means for arresting the operation of said instrument, yielding means for restraining said arresting means, and tripping mechanism for said restraining means, including a rotating frictional driving surface, a tripping member pivotally mounted upon said restraining means and formed of slightly greater length than the distance between its pivot and said driving surface in the normal position of said restraining means, and a sheet actuated device connected with said tripping member and adapted to move it into frictional engagement with said driving surface to be actuated thereby for releasing said arresting means.

4. In a paper feeding machine, the combination of a rotary shaft, a rotary sheet moving instrument driven from said shaft, means for arresting the operation of said instrument, a latch normally restraining said arresting means, a latch tripping arm pivotally mounted upon said latch, a rotating friction wheel driven from said shaft, and a sheet controlled tripping finger suitably

connected with said latch tripping arm and adapted to be operated by said friction wheel.

5. In a paper feeding machine, the combination of a rotary shaft, a rotary sheet combing instrument driven from said shaft, controlling means for moving said instrument out of operative position, a latch normally restraining said controlling means, a latch tripping arm pivotally mounted upon said latch, a rotating friction wheel driven from said shaft, and a sheet controlled tripping finger suitably connected with said latch tripping arm and operated by said friction wheel.

6. In a paper feeding machine, the combination of a rotary shaft, a rotary sheet moving instrument driven from said shaft, a rocking member journaled upon said shaft for arresting the operation of said instrument, a latch normally restraining said rocking member, a latch tripping arm pivotally mounted upon said latch, a rotating friction wheel driven from said shaft, and a sheet controlled tripping finger suitably connected with said latch tripping arm and operated by said friction wheel.

7. In a paper feeding machine, the combination of a sheet support, a sheet moving instrument, automatic means for arresting the operation of said instrument, a movable member normally restraining said instrument arresting means, sheet actuated means controlling said movable member, and means connecting said movable member with the sheet actuated controlling means, whereby said sheet actuated means will be moved out of the path of sheets when the operation of the sheet moving instrument is arrested.

8. In a paper feeding machine, the combination of a sheet moving instrument, automatic means for arresting the operation of said instrument, a movable member normally restraining said instrument arresting means, a sheet actuated tripping finger supported normally in the path of sheets and arranged to control said movable member, and means operated by said movable member for raising said sheet actuated tripper out of the path of sheets.

9. In a paper feeding machine, the combination of a sheet support, a sheet moving instrument, automatic means for arresting the operation of said instrument, a movable member normally restraining said instrument arresting means, a tripper adapted to actuate said movable member, a sheet-actuated trip finger controlling said tripper, and means connecting said movable member with the sheet actuated trip finger, whereby said sheet actuated trip finger will be moved out of the path of sheets when the operation of the sheet moving instrument is arrested.

10. In a paper feeding machine, the combination of a sheet moving instrument, automatic means for arresting the operation of said instrument, a latch normally restraining said arresting means, a latch tripping arm pivotally mounted upon said latch, a friction shoe carried by said latch tripping arm, a moving friction surface, a weighted arm attached to said latch tripping arm and normally holding said friction shoe away from said friction surface, and a sheet actuated tripping finger suitably connected with said latch tripping arm, substantially as set forth.

11. In a paper feeding machine, the combination of a sheet moving instrument, automatic means for arresting the operation of said instrument, a latch normally restraining said arresting means, a latch tripping arm pivotally mounted upon said latch, a friction shoe carried by said latch tripping arm, a rotating friction wheel, a sheet actuated tripping finger suitably connected with said latch tripping arm, a rock arm engaging said tripping finger, and means connecting said rock arm with the latch, substantially as set forth.

12. In a paper feeding machine, the combination of a sheet moving instrument, a spring actuated rocking frame adapted to elevate said instrument into inoperative position, a latch normally engaging said rocking frame to restrain the action of its spring, a latch tripping arm pivotally mounted upon said latch, a friction shoe carried by said latch tripping arm, a rotating friction wheel, a weighted arm attached to said latch tripping arm and normally holding said friction shoe away from said friction wheel, a sheet actuated tripping finger suitably connected with said latch tripping arm, a rock arm engaging said tripping finger, and means connecting said rock arm with the latch, substantially as set forth.

13. In a paper feeding machine, the combination of a sheet moving instrument, a spring actuated rocking frame adapted to elevate said instrument into inoperative position, a latch normally engaging said rocking frame to restrain the action of its spring, a latch tripping arm pivotally mounted upon said latch, a friction shoe carried by said latch tripping arm, a rotating friction wheel, a weighted arm attached to said latch tripping arm and normally holding said friction shoe away from said friction wheel, a sheet actuated tripping finger suitably connected with said latch tripping arm, drop-rollers coöperating with said tripping finger, a rock arm engaging said tripping finger, and drop rollers, and means connecting said rock arm with the latch, substantially as set forth.

14. In a paper feeding machine, the com-

bination of a sheet moving instrument, a rocking frame for raising said sheet moving instrument, a sheet engaging shoe, and means of engagement between said rocking frame and said shoe for raising the shoe while the sheet moving instrument is operating, and independent means of engagement between said frame and said shoe for raising the shoe when said instrument is out of operation.

TALBOT C. DEXTER.

Witnesses:
WM. E. KNIGHT,
LAURA E. MONK.