G. A. MARTIN.

PAPER FEEDING MACHINE.

APPLICATION FILED JUNE 12, 1913.

1,098,279.

Patented May 26, 1914.

5 SHEETS—SHEET 1.

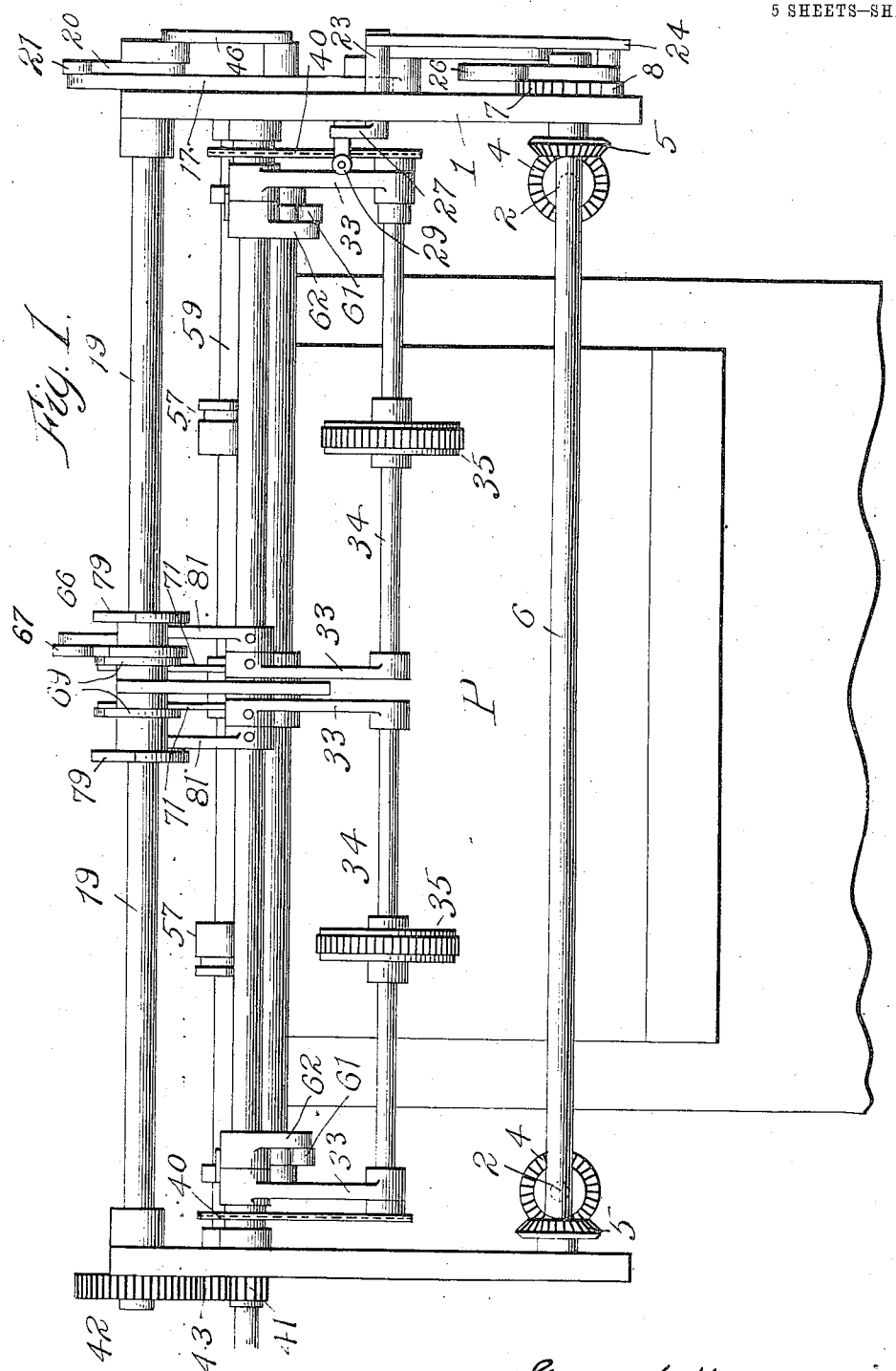


Fig. 1.

Witnesses:
Wm. A. Courtland
Elsie Swenson

George A. Martin Inventor
By his Attorneys Knight & Boot

G. A. MARTIN.

PAPER FEEDING MACHINE.

APPLICATION FILED JUNE 12, 1913.

1,098,279.

Patented May 26, 1914.

5 SHEETS—SHEET 2.

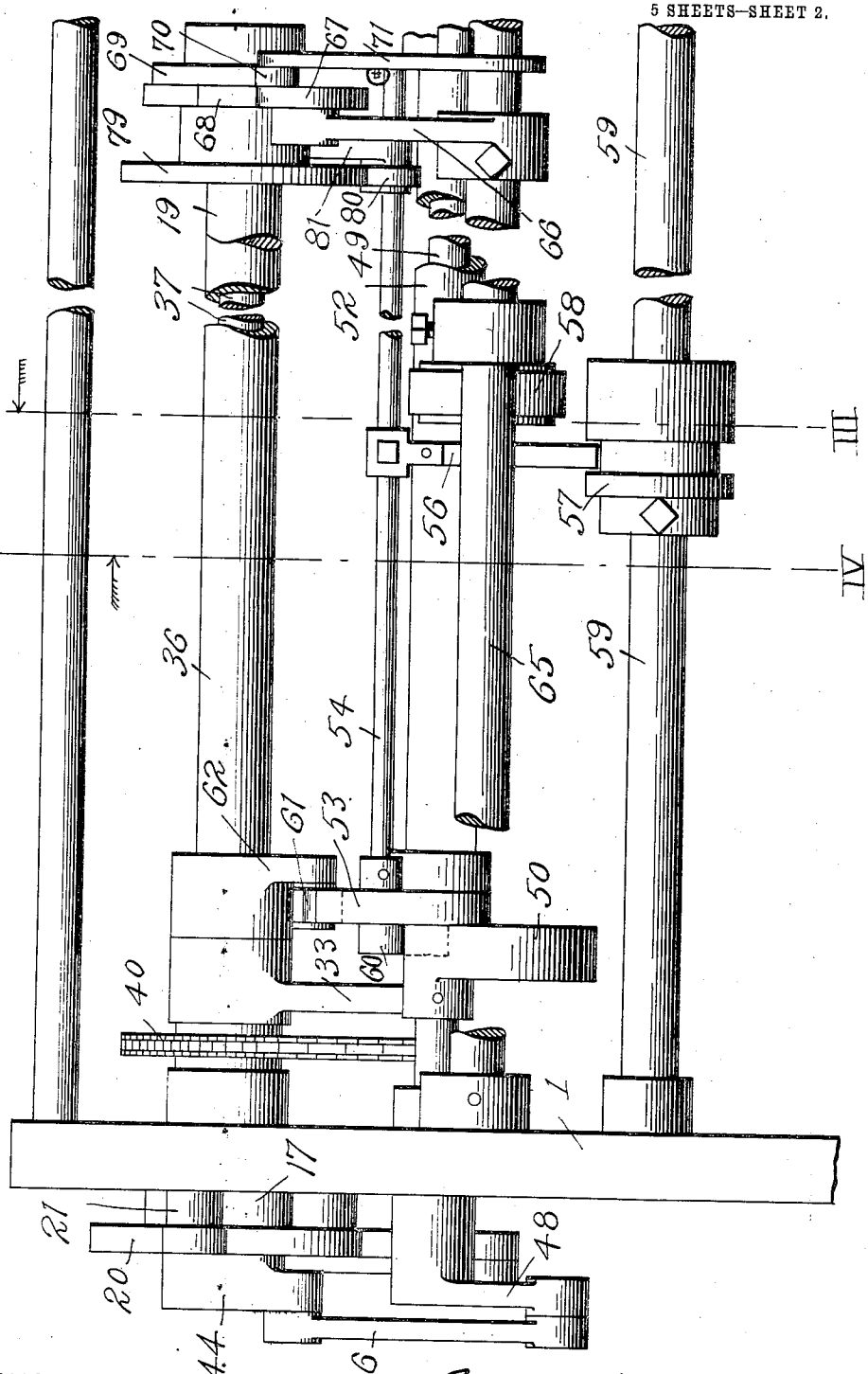


Fig. 2.

Witnesses:
Wm. A. Coulthard
Elsie Swenson

George A. Martin Inventor,
By his Attorneys Knight Bros.

G. A. MARTIN.

PAPER FEEDING MACHINE.

APPLICATION FILED JUNE 12, 1913.

1,098,279.

Patented May 26, 1914.

5 SHEETS—SHEET 3.

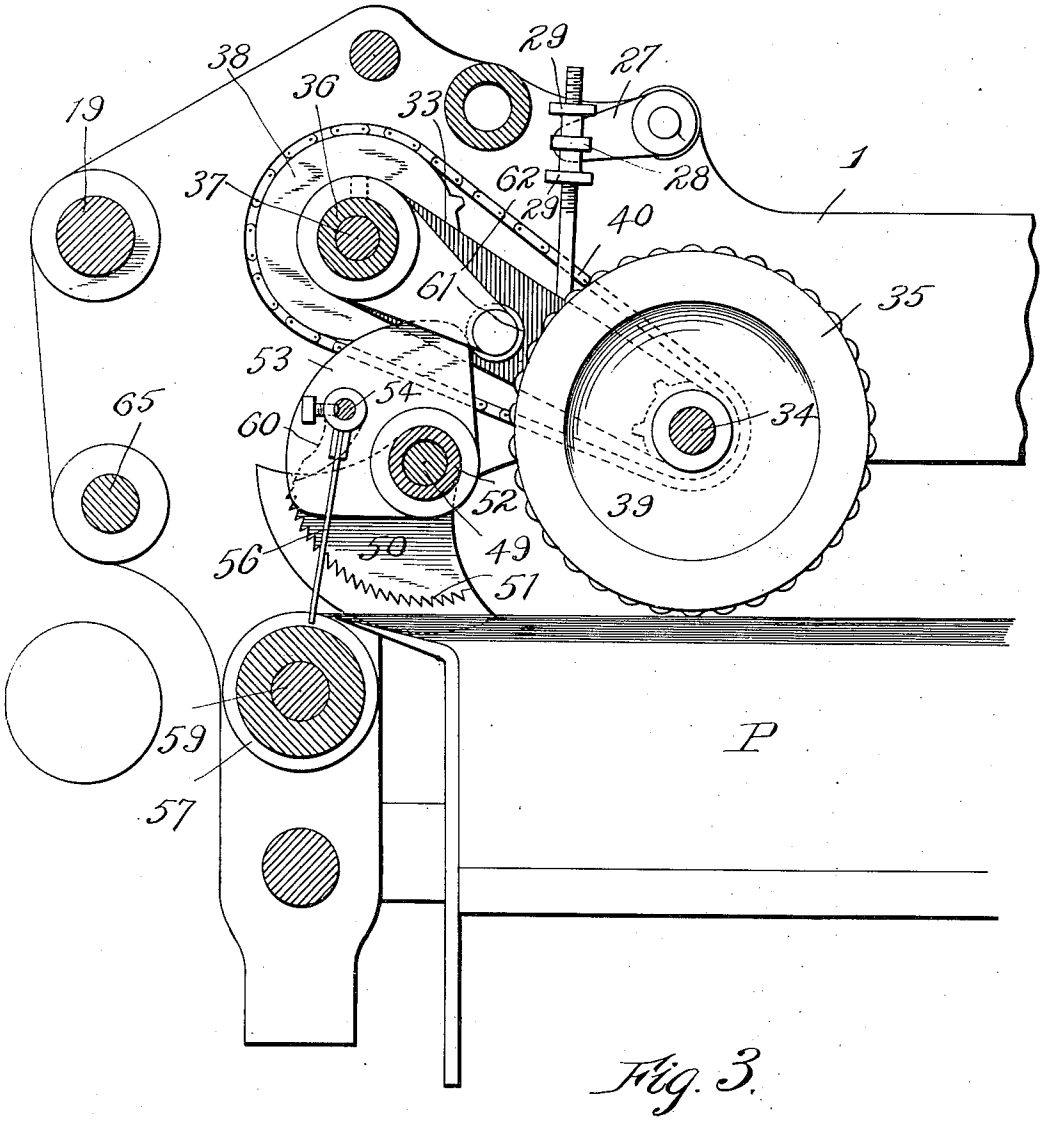


Fig. 3.

Witnesses:
Wm A Coutland
Elsie Swenson

George A. Martin Inventor
By his Attorneys Knight Bros

G. A. MARTIN.

PAPER FEEDING MACHINE.

APPLICATION FILED JUNE 12, 1913.

1,098,279.

Patented May 26, 1914.

5 SHEETS—SHEET 4.

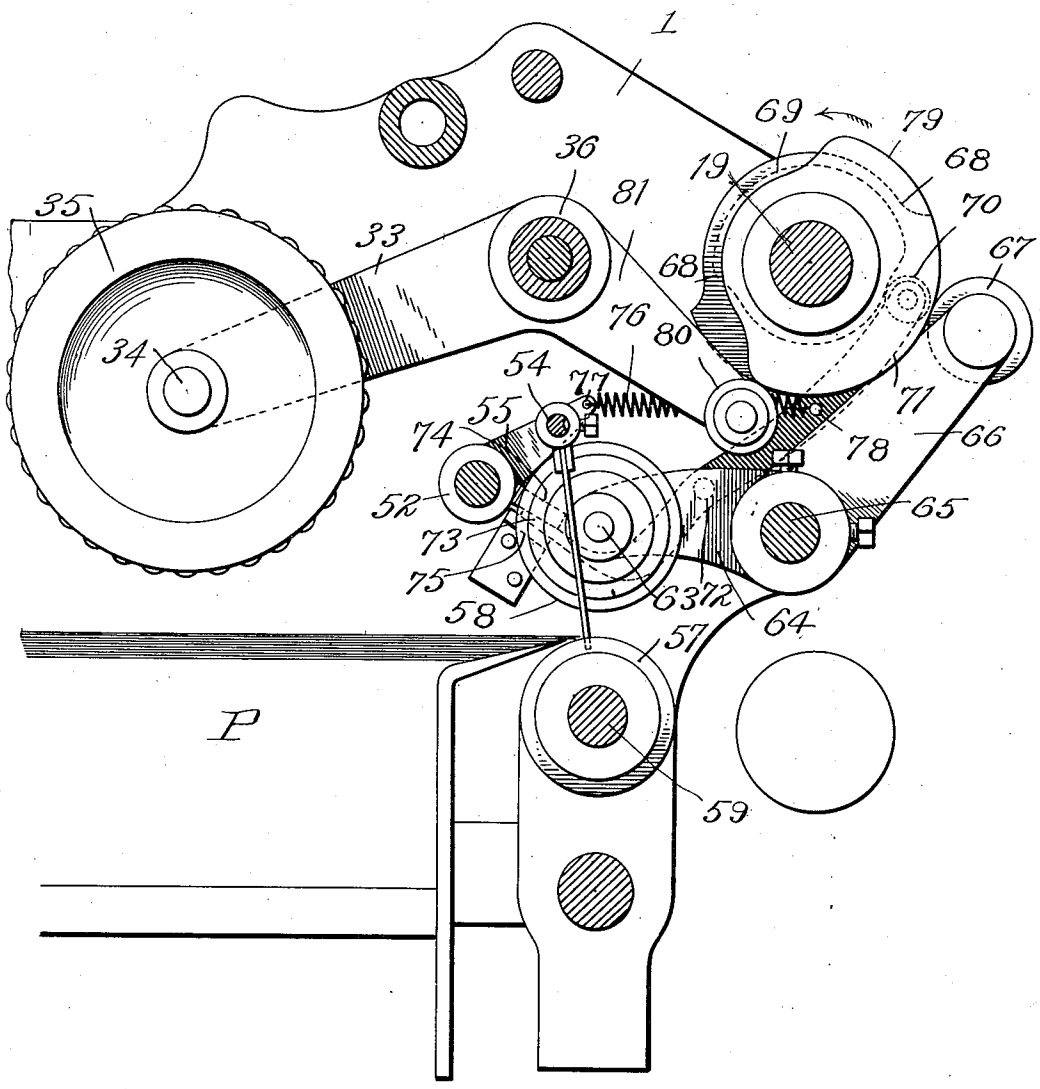


Fig. 4.

Witnesses:
Wm. A. Coultland
Elsie Swenson

Inventor.
By his Attorneys Knight Bros

G. A. MARTIN.

PAPER FEEDING MACHINE.

APPLICATION FILED JUNE 12, 1913.

1,098,279.

Patented May 26, 1914.

5 SHEETS—SHEET 5.

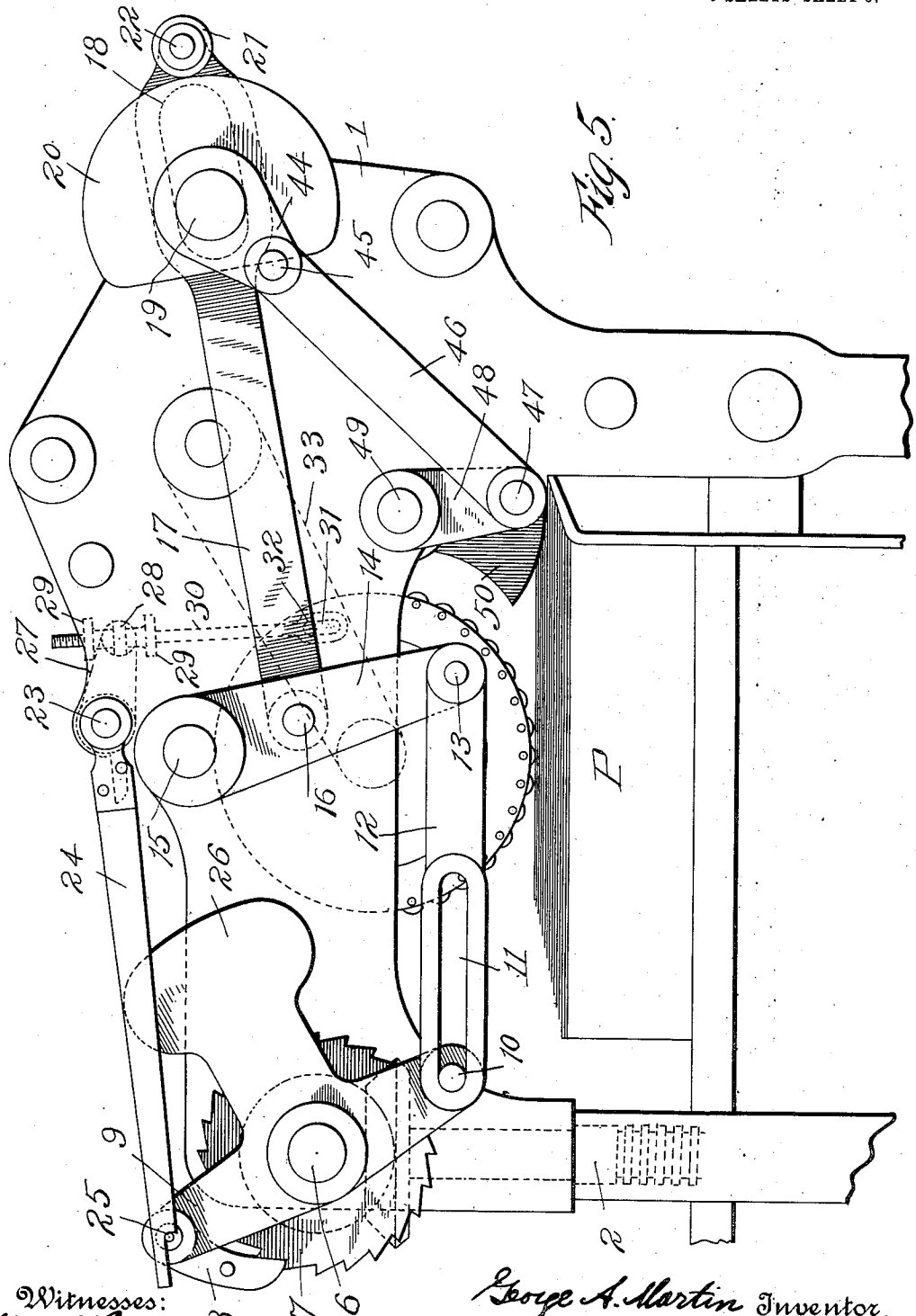


Fig. 5.

Witnesses:
Wm. H. Courtland
Elsie Svenson

George A. Martin Inventor,
By his Attorneys Knight Bros.

UNITED STATES PATENT OFFICE.

GEORGE A. MARTIN, OF PEARL RIVER, NEW YORK, ASSIGNOR TO DEXTER FOLDER COMPANY, OF PEARL RIVER, NEW YORK, A CORPORATION OF NEW YORK.

PAPER-FEEDING MACHINE.

1,098,279. Specification of Letters Patent. Patented May 26, 1914.

Application filed June 12, 1913. Serial No. 773,282.

To all whom it may concern:

Be it known that I, GEORGE A. MARTIN, a citizen of the United States, residing at Pearl River, in the county of Rockland, State of New York, have invented certain new and useful Improvements in Paper-Feeding Machines, of which the following is a full and clear specification.

The present invention relates to improvements in paper-feeding machines, and particularly to feeding machines of the combing type in which the upper sheets of an adjustably supported pile are combed forwardly upon the pile and partially separated from each other and presented successively to suitable delivering mechanism—such, for instance, as the common form of drop roller mechanism.

It has heretofore been common in the art, to provide means controlled by the successive sheets of paper combed from the pile for automatically and independently raising the two sets of combing and feeding devices from the pile as the forward edge of each sheet in front of each combing device reaches a proper position for the operation of the sheet delivery mechanism.

This improved sheet actuated controlling means for elevating the combing device from the pile to automatically arrest their operation, comprises essentially two independent sheet actuated tripping fingers or pendulums suspended in the path of the sheets, one in front of each combing device, and suitable means connected with each independent tripping finger to adapt said finger when actuated by the sheet, to occasion the raising from the pile of the combing device in the rear of said tripping finger which was actuated. Thus, each of the comber-controlling mechanisms is independently operated so that the two combing devices will be independently thrown out of operation, the result being that the sheet is square upon the pile just prior to the operation of the sheet delivery mechanism.

The main features of novelty in the present invention are those residing in the improved mechanism for independently throwing out of operation, the two combing devices.

More specifically, the present invention contemplates the provision of a continuously oscillating member in connection with a suitable device for intermittently connecting thereto the frame which carries the combing device on either side.

Another object is to provide improved means for elevating the tripping finger or pendulum and for retaining it in elevated position together with the combing feed mechanism, until after the sheet has been completely removed from the pile.

The invention includes other features of novelty which will be referred to in the description and more specifically pointed out in the appended claims, reference being had to the accompanying drawings which illustrate my invention in its adaptation to a machine for feeding sheets to a folding machine, printing press or other machine of this general character.

In the drawings—Figure 1 is a top plan view of a complete feeding machine with the features of my invention embodied therein; Fig. 2 is a front elevation of approximately one-half of the machine, showing one of the feeding units which are spaced laterally across the pile of sheets, parts being broken away and parts shown in section; Fig. 3 is a section on the line III—III, Fig. 2; Fig. 4 is a section on the line IV—IV, Fig. 2; and Fig. 5 is an end elevation of the feeding machine corresponding to a view taken from the right side of Fig. 1.

In the preferred type of feeding machine to which my invention is adaptable, the sheet-separating and presenting device is a rotary-combing element. With a paper feeding element of this type, it is essential to employ suitable means for holding back all sheets except the one which is being delivered. Thus some such devices as tail grips, drags, or other devices having a substantially similar function, should be employed but inasmuch as such devices are well known in the art, they have not been represented on the drawings.

Referring first to Figs. 1 and 5 for the purpose of more clearly showing the function of the apparatus, including the features of my present invention, adjacent to the lat-

erally spaced side frames 1 of a feeding machine, are suitably journaled the feed table elevating screws 2. Said screws are suitably connected to move in unison to make sure that the board 3 upon which the sheets are piled, which is raised and lowered thereby, is maintained in a horizontal position at all times. Keyed to the upper ends of the feed screws 2, are bevel gears 4 which mesh with companion gears 5. As shown more clearly in Fig. 5, the stub shaft 6 to which the bevel gear 5 is keyed, has a ratchet wheel 7 rigidly mounted thereon, said ratchet wheel being adapted to transmit power to the shaft 6 from the pawl 8 which is pivotally mounted on the upper end of a lever 9, which is freely journaled upon the stub shaft 6. The lower end of the lever 9 carries a laterally projecting pin 10 which travels in a slot 11 in the rear end of a connecting rod 12, the forward end of said rod 12 being pivotally connected at 13 to the lower end of an arm 14 which rocks on a pin 15 projecting from the side frame 1. The arm 14 is provided with a laterally projecting pin 16, upon which is pivoted one end of a cam lever 17. Said cam lever is provided with a slot 18 at its forward end of suitable size to receive a cam shaft 19. Keyed to the cam shaft 19 is a cam 20, which cooperates with the cam roller 21 journaled upon a pin 22 on the forward end of cam lever 17. A little above the pin 15, a small shaft 23 is journaled in the side frame 1. Keyed to said shaft is a pawl or finger 24, which is notched at its outer end to form a shoulder which normally engages a pin 25 carried by the upper end of the lever 9. In this position which is shown in Fig. 5, the pawl 8 is prevented from being moved in a clockwise direction by the axis of shaft 6 under the influence of a weight 26 which is integrally formed with the lever 9. Inasmuch as the slot 11 permits a full reciprocable movement of the connecting rod 12 without any appreciable movement of the lever 9, no feeding movement is imparted to the ratchet wheel 7 and hence the board 3 remains at constant height as long as the parts remain in the same relative positions. Keyed to the shaft 23 within the side frame 1, is an arm 27 provided with an abutment 28 against which the thumb nuts 29 on the upper end of a gage rod 30 can be tightened. The lower end of the rod 30 is provided with a slot 31 which encompasses a pin 32 which projects from one of the lever arms 33 within which the shaft 34 is journaled, see Fig. 1. The shaft 34 carries the combing wheel 35, and hence the elevation of the top sheet of the pile P will determine the elevation of the pin 32. Hence, when the combing wheel 35 is permitted to descend by reason of the pile P being depleted, the rod 30 is permitted to fall sufficiently under the action of a spring (not shown) to raise the finger 24 out of engagement with the pin 25. Immediately the weight 26 under the action of gravity imparts a clockwise movement to the pawl 8 under the restraint of connecting rod 12, when the cam roller 21 is next permitted to move inwardly toward the cam shaft 19. The succeeding outward movement of the cam roller 21 returns the pawl 8 to the position shown in Fig. 5 and thereby causes the board 2 to be elevated in the manner indicated above.

Referring now to Figs. 3 and 4, the arms 33 which carry the shaft 34, are keyed to a sleeve 36 which is journaled upon a shaft 37. Said shaft 37 constitutes the principal power shaft of the feeding machine and has its opposite ends journaled respectively within the side frames 1. Keyed to the power shaft 37 is a sprocket 38 which transmits power to a sprocket 39 by means of a sprocket chain 40. The sprocket 39 is keyed to the shaft 34 by which the combing wheel 35 is carried. On the outside of the left hand side of frame 1 according to Fig. 1, the shaft 37 has keyed thereto a spur pinion 41 which transmits power to a spur gear 42 by means of an interposed idler 43. The gear 42 is keyed to the cam shaft 19 which is journaled within the side frames 1, as shown in Fig. 1. Keyed to the right hand end of the cam shaft 19 (see Figs. 1 and 5) is a crank arm 44 provided with a journal pin 45. A connecting rod 46 has one end journaled on the pin 45 and its other end journaled on a pin 47 in the outer end of a crank arm 48 of greater length than the crank arm 44. The crank arm 48 is keyed to a shaft 49 journaled at opposite ends in the side frames 1. Keyed to the shaft 49 is a disk 50 which is provided with internal ratchet teeth 51. Under the continuous rotation of the cam shaft 19, the shaft 49 is rocked to and fro continuously while the machine is in operation. Hence the ratchet 51 is rocked to and fro continuously. Freely journaled upon the shaft 49 is a sleeve 52 (see Fig. 3). Keyed to the sleeve 52 is a segmental disk 53. As shown in Fig. 2, a pendulum supporting rock shaft 54 is journaled at one end within the disk 53 and at its other end is journaled within a crank arm 55 (see Fig. 4), the crank arm 55 being keyed to the sleeve 52. Keyed to the rock shaft 54 in suitable manner to be adjusted therealong, is a pendulum or tripping finger 56, the lower end of which depends within a groove in the lower feed roller 57 with which the drop roller 58 cooperates when the sheet is delivered. The feed roll 57 is keyed to a shaft 59 suitably journaled in the side frames 1.

Referring now to Fig. 3, the end of rock shaft 54 which is journaled within the disk 53, has keyed thereto a suitable pawl 60 which is normally held out of engagement with the rack 51 by reason of the position in

which the pendulum 56 hangs. When however, a sheet is fed from the pile and engages said pendulum, the shaft 54 is rocked in its bearings in a direction such that the pawl 60 is thrown into engagement with the teeth 51 of the ratchet disk 50, so that the movement of said disk 50 is transmitted to the disk 53 which rotates the sleeve 52 to which it is keyed. As will be seen from Fig. 3, the disk 53 is in the form of a cam which coöperates with a cam roller 61 on the end of a cam arm 62 which is keyed to the sleeve 36 upon which the lever arms 33 which carry the combing wheels, are rigidly mounted. It will be seen therefore that as the roller 61 mounts the cam disk 53, under the action of the ratchet mechanism 49 and 60, the shaft 54 will be moved upwardly around shaft 49 while at the same time changing the angular position of the pendulum 56 with respect to the topmost sheet, by which it was actuated. Shortly after the elevation of the combing wheel and pendulum, the drop roller 58 is caused to descend onto the sheet as will be seen by an inspection of Fig. 4, said drop roller 58 being journaled at 63 in the end of a crank arm 64, which is keyed to a shaft 65 journaled in the side frames 1. Also keyed to the shaft 65 is a cam arm 66 provided on its outer end with a cam roller 67 which runs on a cam 68. The cam 68 is suitably timed to permit the drop roller 58 to fall shortly after the pendulum 56 and combing wheel 35 are elevated. In order to provide suitable and efficient means for maintaining the combing wheel and pendulum in elevated position while the sheet is being drawn from the feeder, a cam 69 is keyed to the cam shaft 19 as shown best in Fig. 4. Said cam 69 coöperates with a cam roller 70 on one end of a lever 71 which is pivoted at 72 on the side frames 1. The other end of the lever 71 is deflected upwardly as shown in Fig. 4, and provided with a detent 73 which under the action of the cam 69 is caused to assume a position in which it engages an arm 74 which projects from the boss of the lever arm 55. In consequence of this arrangement, when the ratchet disk 50 undergoes its return rocking movement, the segment disk 53 and crank arm 55 do not return to their lowermost position until the cam 69 permits the detent 73 to be withdrawn from between the arm 74 and a bracket 75, which is suitably mounted on any adjacent rigid portion of the machine. A spring 76 is connected at one end to the projection 77 on the crank arm 55, the other end of said spring being connected at 78 to the cam lever 71, thus serving to impart the inward movements to the cam roller 70. Another cam 79 is keyed to the cam shaft 19 and adapted to coöperate with a cam roller 80 journaled upon a pin projecting laterally from the outer end of a cam arm 81 which is keyed to the sleeve 36 in such a way as to adapt the combing feed roll 35 to remain in elevated position until after the pendulum 56 has been dropped into the path of the succeeding sheet.

The operation of the mechanism will be understood from the following statement: Referring more especially to Figs. 3 and 4, the combing feed roll 35 is in raised position and about to be dropped into operative position with the topmost sheet of the pile as indicated by the relative position of the cam roller 80 with respect to the cam 79, said cam being rotated in the direction of the arrow (shown in Fig. 4). Immediately preceding this relative arrangement of the parts, the cam roller 70 has been permitted by the cam 69 to assume its innermost position with respect to the shaft 19, and under the action of the spring 76 has permitted the pendulum 56 to drop into the position shown in this figure. As the cam roller 80 assumes its innermost position with respect to the cam shaft 19, the combing roll 35 drops upon the pile and the combing action begins immediately. Shortly after this combing action has started the topmost sheet will impinge against one or both of the tripping fingers or pendulums 56, the result being that if one corner of the sheet is ahead of the other corner on the front edge of the sheet the pendulum 56 corresponding to the foremost corner will be actuated sooner than that corresponding to the other corner and in the period of time which elapses before the drop roller 58 descends, the sheet will be presented squarely between the drop roller and the feed roller 57. Said period of time corresponds to the distance which the cam roller 67 carried by the drop roller operating arm 66 has to travel from the position shown in Fig. 4, until it reaches the end of its travel on the outer run of said cam 68. Before this has happened however, the forward movement of the pendulum 56 under the impact of the sheet, throws the pawl 60 in a clockwise direction (see Fig. 3) and as the movement of the ratchet disk 50 with its teeth 51 is suitably timed to have the ratchet teeth 51 moving in a clockwise direction by the shaft 49, said pawl 60 is thrown into engagement with the teeth 51 and immediately the segment disk 53 becomes locked to the continuously rocking shaft 49. As shown in Fig. 5, the crank arm 44 is just beginning its upward movement. In consequence, the pendulum supporting rod or shaft 54 is revolved upwardly about the shaft 49 while at the same time the cam roller 61 on the cam arm 62 is caused to mount to the outer run of the cam disk 53. The result is that the sleeve 36 is rocked in an anti-clockwise direction and causes the combing wheels 35 to be elevated. By this time, cam roller 67 has reached the

inner run of the cam 68 and the drop rollers 58 descend upon the sheet and said sheet is withdrawn from the feeder. Immediately thereafter, the cam roller 70 on the arm 71 mounts to the outer run of the cam 69, the result being that the detent 73 is moved into its innermost position with respect to the holding arm 74, so as to retain the pendulum 56 in raised position after the crank arm 44 (see Fig. 5) has reached its lowermost position shown in said figure, the reverse rocking movement of the ratchet 50 taking place under this action. As the return movement of the disk 50 goes on, the pawl 60 is released from the ratchet teeth 51 and the pendulum 56 is held out of interference with the moving sheet by means of the detent 73, which forms one end of the lever 71. Before the cam roller 70 reaches the end of its outer run, the cam roller 80 begins its outer run on the cam 79, so that the combing wheels 35 are retained in elevated position until after the pendulums 56 have dropped into position subsequently to the passage of the preceding sheet. As soon as the cam roller 80 reaches the position shown in Fig. 4 with respect to the cam 79, a complete cycle has been accomplished and the same operations are repeated.

What I claim is:

1. In a sheet-feeding machine, the combination of a sheet-moving device suitably mounted to be moved into and out of engagement with the top sheet of a pile, a power shaft, a second shaft coaxial with said power shaft but normally disconnected therefrom, said second shaft being suitably connected to said sheet-moving device to impart the movements thereto with respect to said pile, normally disconnected interlocking members connected to said shafts respectively, and sheet-operated means for effecting the interlocking of said members.

2. In a sheet-feeding machine, the combination with a power shaft, of a sheet-moving device suitably mounted to oscillate about an axis into and out of engagement with the top sheet of a pile, means for transmitting power from said power shaft to said sheet-moving device, and means operatably connected to said power shaft for periodically oscillating said sheet-moving device about said axis, said means including coaxially arranged shaft sections provided with parts connected respectively to said power shaft and sheet-moving device, said parts being adapted to interengage, and sheet-operated means for moving one of said parts.

3. In a sheet-feeding machine, the combination with a movably mounted sheet-moving device adapted to be moved into and out of engagement with the top sheet of a pile, of a normally stationary shaft operatably connected to said sheet-moving device, a power shaft coaxially arranged with respect to said normally stationary shaft, said shafts being normally disconnected, and sheet-actuated means for connecting said shafts together.

4. In a sheet-feeding machine, the combination with a movably mounted sheet-moving device, of a normally stationary shaft suitably connected to said device to lift it out of engagement with the top sheet of a pile, a power shaft, said shafts being coaxially arranged, normally disengaged members carried by said shafts, and a sheet-actuated element adapted to effect the engagement of said members.

5. In a sheet-feeding machine, the combination with a sheet-feeding device suitably mounted to be moved into and out of engagement with the top sheet of a pile, a power shaft, a sleeve journaled thereon, said sleeve being suitably connected to said sheet-feeding device to impart the movement from said pile of sheets, and sheet actuated means for locking said sleeve to said shaft.

6. In a sheet-feeding machine, the combination with a sheet-feeding device suitably mounted to be moved into and out of engagement with the top sheet of a pile, a power shaft, a sleeve journaled on said shaft, a cam secured to said sleeve, said cam being suitably connected to said sheet-feeding device to impart thereto the movement from said pile of sheets, an arm also secured to said sleeve at a distance from said cam, a tripper shaft journaled in said cam and arm, a ratchet mounted on said power shaft, a pawl carried by said tripper shaft in suitable position to be thrown into and out of engagement with said ratchet, and a sheet-actuated tripper carried by said tripper shaft.

7. In a sheet-feeding machine, the combination with a power shaft, of a sheet-moving device mounted to swing about the axis of said shaft into and out of engagement with successive sheets of a pile, means for transmitting power from said power shaft to said sheet-moving device, and means for periodically imparting the swinging movements to said sheet-moving device, the last said means including a normally stationary shaft operatably connected to said sheet-moving device and adapted to impart the swinging movements thereto, an oscillating shaft, and sheet actuated means for connecting said stationary and oscillating shafts to produce the swinging movements, said stationary and oscillating shafts being coaxially mounted.

8. In a sheet-feeding machine, the combination with a power shaft, of a sheet-moving device mounted to swing about the axis of said shaft into and out of engagement with successive sheets of a pile, means for transmitting power from said power shaft

to said sheet-moving device, and means for periodically imparting the swinging movements to said sheet-moving device, the last said means including a power shaft, a sleeve journaled thereon, and connected to said sheet-moving device, and sheet actuated means for locking said sleeve to said shaft.

9. In a sheet-feeding machine, the combination with a power shaft, of a sheet-moving device mounted to swing about the axis of said shaft into and out of engagement with successive sheets of a pile, means for transmitting power from said power shaft to said sheet-moving device, and means for periodically imparting the swinging movements to said sheet-moving device, the last said means including a power shaft, a sleeve journaled thereon and connected to said sheet-moving device, and sheet-actuated means for locking said sleeve to said shaft, said locking means comprising a cam keyed to said sleeve, a ratchet keyed to said power shaft, a pawl pivotally mounted on said cam to adapt it to be thrown into and out of engagement with said ratchet, and sheet-actuated means for moving said pawl, said sheet-moving device being provided with a cam arm coöperating with said cam.

10. In a sheet-feeding machine, the combination of two parallel power shafts, a sheet-moving device suitably mounted to swing about the axis of one of said shafts, said device being connected up to that shaft to receive power therefrom, a sleeve journaled on the other power shaft and having operative connections adapting it to impart the swinging movements to said sheet-moving device, and sheet-actuated means for locking said sleeve to the shaft on which it is journaled.

11. In a sheet-feeding machine, the combination of two parallel power shafts, a sheet-moving device suitably mounted to swing about the axis of one of said shafts, said device being connected up to that shaft to receive power therefrom, a sleeve journaled on the other power shaft and having operative connections adapting it to impart the swinging movements to said sheet-moving device, and sheet-actuated means for locking said sleeve to the shaft on which it is journaled, said sheet-actuated means including elements carried by said shaft and sleeve respectively adapted to interengage, said elements being normally disengaged and adapted to be thrown into engagement by a sheet.

12. In a sheet-feeding machine, the combination of two parallel power shafts, a sheet-moving device suitably mounted to swing about the axis of one of said shafts, said device being connected up to that shaft to receive power therefrom, a sleeve journaled on the other power shaft and having operative connections adapting it to impart the swinging movements to said sheet-moving device, and sheet-actuated means for locking said sleeve to the shaft on which it is journaled, said sheet-actuated means including elements keyed to said sleeve and shaft respectively and a movable part mounted on one of said elements.

13. In a sheet-feeding mechanism, a power shaft, a sleeve journaled thereon, a sheet-moving device keyed to said sleeve, means for transmitting power from said sleeve to said device, a second power shaft, a sleeve journaled on said second power shaft, a cam keyed to the second sleeve, a cam arm keyed to the first sleeve to coöperate with said cam, a ratchet keyed to the second power shaft, a pawl pivotally mounted on said cam to cooperate with said ratchet, and sheet-actuated means adapted to swing said pawl into engagement with said ratchet.

14. In a sheet-feeding machine, the combination with a power shaft, of a sheet-moving device oscillatably mounted on said shaft, means for transmitting power from said power shaft to said sheet-moving device, a second power shaft, a normally stationary sleeve journaled on the second power shaft, normally inoperative means adapted to lock said sleeve to said second power shaft, and sheet-actuated means adapted to render said locking means operative.

15. In a sheet-feeding machine, the combination with a power shaft, of a sheet-moving device oscillatably mounted on said shaft, means for transmitting power from said power shaft to said sheet-moving device, a second power shaft, a normally stationary sleeve journaled on the second power shaft, normally inoperative means adapted to lock said sleeve to said second power shaft, sheet-actuated means adapted to render said locking means operative, means for removing said sheet-actuated means from the path of the sheet and holding said means out of the way of said sheet.

16. In a sheet-feeding machine, the combination with a power shaft, of a sheet-moving device oscillatably mounted on said shaft, means for transmitting power from said power shaft to said sheet-moving device, a second power shaft, a normally stationary sleeve journaled on the second power shaft, normally inoperative means adapted to lock said sleeve to said second power shaft, sheet-actuated means adapted to render said locking means operative, means for removing said sheet-actuated means from the path of the sheet and holding said means out of the way of said sheet, said removing and holding means being timed to release the sheet-actuated means prior to the sheet-engaging movement of the sheet-moving means.

17. In a sheet-feeding machine, the combination with a power shaft, of a sheet-mov-

ing device oscillatably mounted on said shaft, means for transmitting power from said power shaft to said sheet-moving device, a second power shaft, a normally stationary sleeve journaled on the second power shaft, normally inoperative means adapted to lock said sleeve to said second power shaft, sheet-actuated means adapted to render said locking means operative, a sleeve journaled on said first power shaft, said sheet-moving means being secured to the last said sleeve, and means operatably connecting said sleeves.

18. In a sheet-feeding machine, the combination with a power shaft, of a sheet-moving device oscillatably mounted on said shaft, means for transmitting power from said power shaft to said sheet-moving device, a second power shaft, a normally stationary sleeve journaled on the second power shaft, normally inoperative means adapted to lock said sleeve to said second power shaft, sheet-actuated means adapted to render said locking means operative, a sleeve journaled on said first power shaft, said sheet-moving means being secured to the last said sleeve, and means operatably connecting said sleeves, said means for connecting said sleeves comprising a cam mounted on one sleeve and a cam arm mounted on the other sleeve.

19. In a machine for feeding sheets, the combination with a rock shaft, a sleeve journaled thereon, a power shaft, a sleeve journaled on said power shaft, a sheet-moving device secured to the sleeve on said power shaft and receiving power from said shaft, a ratchet disk secured to said rock shaft, a rigid support secured to the sleeve on said rock shaft, a tripper shaft journaled in said support, a tripper carried by said tripper shaft, a pawl carried by said tripper shaft in operating relation to said ratchet, and means for operatably connecting said sleeves.

20. In a machine for feeding sheets, the combination with a rock shaft, a sleeve journaled thereon, a power shaft, a sleeve journaled on said power shaft, a sheet-moving device secured to the sleeve on said power shaft and receiving power from said shaft, a ratchet disk secured to said rock shaft, a rigid support secured to the sleeve on said rock shaft, a tripper shaft journaled in said support, a tripper carried by said tripper shaft, a pawl carried by said tripper shaft in operating relation to said ratchet, and means for operatably connecting said sleeve, said means comprising a cam secured to one of said sleeves, and a cam arm secured to the other of said sleeves.

21. In a machine for feeding sheets, the combination with a rock shaft, a sleeve journaled thereon, a power shaft, a sleeve journaled on said power shaft, a sheet-moving device secured to the sleeve on said power shaft and receiving power from said shaft, a ratchet disk secured to said rock shaft, a rigid support secured to the sleeve on said rock shaft, a tripper shaft journaled in said support, a tripper carried by said tripper shaft, a pawl carried by said tripper shaft in operating relation to said ratchet, and means for operatably connecting said sleeves, said means including a cam secured to the sleeve on said rock shaft which cam constitutes a portion of the support for said tripper shaft, and cam operated means secured to the sleeve on said power shaft.

22. In a sheet-feeding machine, the combination with a sheet-feeding device suitably mounted to be moved into and out of engagement with the top sheet of a pile, a power shaft, a normally stationary shaft, a cam carried by said normally stationary shaft, a tripper shaft journaled in said cam, a sheet-actuated tripper carried by said tripper shaft, a ratchet mounted on said power shaft, a pawl carried by said tripper shaft in suitable position to be thrown into and out of engagement with said ratchet, and means movable with said sheet-feeding device adapted to be operated by said cam to impart the movement away from said top sheet.

23. In a sheet-feeding machine, the combination with a sheet-feeding device suitably mounted to be moved into and out of engagement with the top sheet of a pile, a cam arm partaking of the movement of said device to and from said top sheet of the pile, a cam for actuating said cam arm, a power shaft, a normally stationary shaft, a ratchet mounted on one of said shafts, a pawl for said ratchet, and a sheet-actuated device for moving said pawl into engagement with said ratchet.

24. In a sheet-feeding machine, the combination of a sheet-feeding device, of a pivotally mounted arm for carrying said device into and out of contact with the top sheet of a pile, a cam arm suitably connected to the first said arm to move it, a normally stationary shaft, a cam carried thereby in suitable position to actuate said cam arm when power is imparted to said normally stationary shaft, a power shaft, normally disconnected with said stationary shaft, and sheet-actuated means for connecting said shafts.

25. In a sheet-feeding machine, the combination of a sheet-feeding device, of a pivotally mounted arm for carrying said device into and out of contact with the top sheet of a pile, a cam arm suitably connected to the first said arm to move it, a normally stationary shaft, a cam carried thereby in suitable position to actuate said cam arm when power is imparted to said normally stationary shaft, a power shaft normally disconnected with said stationary shaft, and sheet-actuated means for connecting said shafts, said shafts being coaxially mounted.

26. In a sheet-feeding machine, the com-

bination with an oscillating shaft, of a normally stationary shaft, normally inoperative means for locking said shafts together, sheet-actuated means for operating said locking means, a cam carried by said normally stationary shaft, and a sheet-feeding device suitably mounted to move into and out of engagement with the top sheet of a pile, said sheet-feeding device being provided with a cam arm adapted to be operated by said cam.

GEORGE A. MARTIN.

Witnesses:
ROBERT H. ARMSTRONG,
D. VON SOOSTEN, Jr.