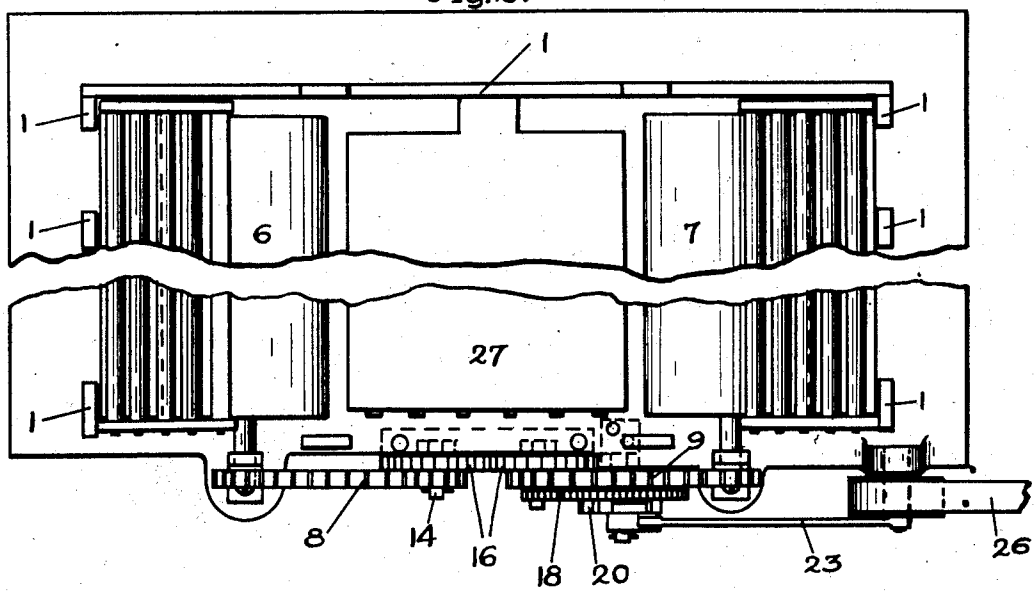
C. A. CHESHIRE.

FEEDING MECHANISM.

APPLICATION FILED MAY 27, 1912.

1,097,750. Patented May 26, 1914.

Fig. 2.



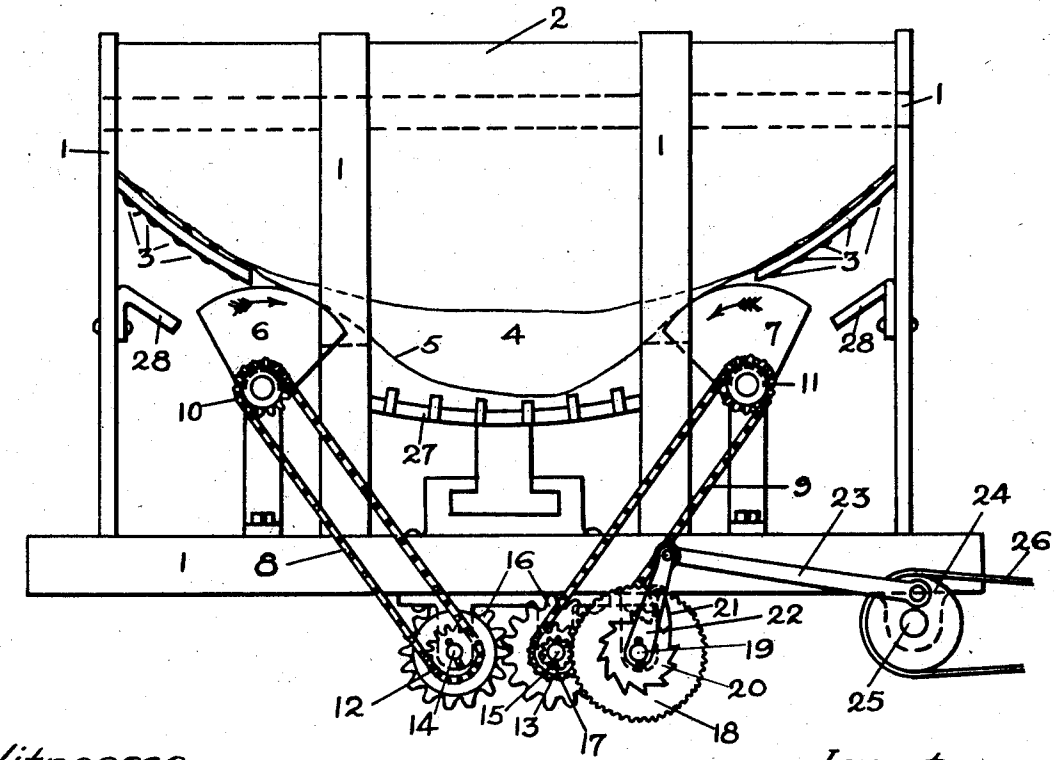


Fig. 1.

Witnesses

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CAREY A. CHESHIRE, OF DES MOINES, IOWA.

FEEDING MECHANISM.

1,097,750. Specification of Letters Patent. Patented May 26, 1914.

Application filed May 27, 1912. Serial No. 699,847.

To all whom it may concern:

Be it known that I, CAREY A. CHESHIRE, a citizen of the United States, and a resident of the city of Des Moines, county of Polk, and State of Iowa, have invented certain new and useful Improvements in Feeding Mechanisms, of which the following is a specification.

My invention relates to improvements in feeding mechanism especially adapted for use in feeding flexible sheets of paper to printing presses or other mechanisms, and has for its object the provision of mechanism of this character which is capable of rapid and efficient operation and capable of being re-stocked and re-supplied with paper sheets without interrupting the operation thereof.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which—

Figure 1 is a rear elevation of mechanism embodying my invention, and Fig. 2, a partial top plan view of the same shown with the paper sheets to be fed removed.

The form of construction illustrated in the drawings comprises a suitable receptacle or hopper 1 adapted to contain and position a stack of flexible sheets 2 of paper or similar material. This stack of sheets is supported and retained in hopper 1 by means of a plurality of longitudinally arranged rollers 3 positioned at each side thereof. These rollers 3 are arranged to support the side portions only of said stack of sheets, a longitudinal central opening 4 being provided for the removal of the bottommost sheet 5 of said stack, when said bottommost sheet is buckled or bulged downwardly, as indicated in Fig. 1. Delivery members 6 and 7 are arranged in the lower portion of receptacle 1, as shown. These members 6 and 7 are made of soft rubber and in the form of mutilated rollers, each constituting a segmental part of a cylindrical roller. The members 6 and 7 are driven, respectively, by means of sprocket chains 8 and 9 engaging sprocket chains 10 and 11 which are secured to members 6 and 7, respectively. The sprocket chains 8 and 9 are driven, respectively, by means of sprocket wheels 12 and 13 secured to shafts 14 and 15 mounted on the bottom of hopper 1. Shafts 14 and 15 carry intermeshing gears 16 and shaft 15 carries a pinion 17 meshing with a gear 18 fixed to a shaft 19. Shaft 19 carries a ratchet wheel 20 which is operated intermittently by means of a pawl 21 carried by a pawl arm 22 loosely mounted on shaft 19. Pawl arm 22 is operated by means of a link 23 secured to a crank pin on the face of a pulley 24 which is carried by a shaft 25 and driven by a belt 26. The arrangement is such that upon rotation of pulley 24, members 6 and 7 will be rotated through a complete rotation and will engage the bottommost sheet 5 of the stack of sheets 2, buckle it inwardly and downwardly to remove the same from supporting rollers 3 and deposit the same on a reciprocatory plate 27. Then motion of members 6 and 7 is discontinued, when they are in their extreme lowermost positions, whereupon said sheet 5 will be free to reëxpand with its edges resting on supports 28 provided for this purpose. Reciprocatory plate 27 serves to remove the bottommost sheet thus deposited during the interval of rest of members 6 and 7, whereupon the operation is repeated. The specific form of reciprocatory plate 27 forms no part of my present invention as any of the usual or desired forms may be employed for this purpose, as will be readily understood by those skilled in the art.

The construction above set forth will be found capable of efficiency in use at high speed, and inasmuch as the sheets fed are removed from the bottom, the hopper 1 may be re-stocked or replenished with sheets without interrupting the operation of the mechanism.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the exact details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. Feeding mechanism comprising a hopper provided with a bottom extending inwardly from each side but open centrally to permit the passage of the bottommost sheet therein when buckled; two rollers hav-

ing fixed axes and arranged to contact with said bottommost sheet adjacent the edges of said central opening; and means for rotating the contact portion of said rollers toward each other simultaneously, substantially as described.

2. Feeding mechanism comprising a hopper provided with a bottom extending inwardly from each side but open centrally to permit the passage of the bottommost sheet therein when buckled; two segmental rollers having fixed axes and arranged to contact with said bottommost sheet adjacent the edges of said central opening; and means for rotating the contact portion of said rollers toward each other simultaneously, substantially as described.

3. Feeding mechanism comprising a hopper provided with a bottom extending inwardly from each side but open centrally to permit the passage of the bottommost sheet therein when buckled; two rollers having fixed axes and arranged to contact with said bottommost sheet adjacent the edges of said central opening; means for rotating the contact portion of said rollers toward each other simultaneously and intermittently; and a reciprocatory carrier arranged under said rollers, substantially as described.

4. Feeding mechanism comprising a hopper provided with a bottom extending inwardly from each side but open centrally to permit the passage of the bottommost sheet therein when buckled; two segmental rollers having fixed axes and arranged to contact with said bottommost sheet adjacent the edges of said central opening; means for rotating the contact portion of said rollers toward each other simultaneously and intermittently; and a reciprocatory carrier arranged under said rollers, substantially as described.

5. Feeding mechanism comprising a hopper having a supporting bottom consisting of portions extending inwardly from opposite sides thereof but leaving said bottom open centrally; two shafts having fixed axes arranged longitudinally of said opening, one under each side thereof; a segmental roller on each of said shafts and arranged to contact with the bottom-most of a stack of sheets in said hopper; and means for rotating said rollers toward each other simultaneously, substantially as described.

6. Feeding mechanism comprising a hopper having a supporting bottom consisting of a plurality of friction rollers arranged to form supporting portions extending inwardly from opposite sides thereof but leaving said bottom open centrally; two shafts permanently arranged longitudinally of said opening, one under each side thereof; a segmental roller on each of said shafts and arranged to contact with the bottom-most of a stack of sheets in said hopper; and means for rotating said rollers toward each other simultaneously, substantially as described.

7. Feeding mechanism comprising a hopper having a supporting bottom consisting of portions extending inwardly from opposite sides thereof but leaving said bottom open centrally; two shafts permanently arranged longitudinally of said opening, one under each side thereof; a segmental roller on each of said shafts and arranged to contact with the bottom-most of a stack of sheets in said hopper; means for rotating said rollers toward each other simultaneously, intermittently and interrupting their rotation when in lowermost positions; a reciprocatory carrier operating between said shafts; and supplemental sheet edge supports arranged outside of said shafts and rollers and under said hopper, substantially as described.

8. Feeding mechanism comprising a hopper having a supporting bottom consisting of a plurality of friction rollers arranged to form supporting portions extending inwardly from opposite sides thereof but leaving said bottom open centrally; two shafts permanently arranged longitudinally of said opening, one under each side thereof; a segmental roller on each of said shafts and arranged to contact with the bottom-most of a stack of sheets in said hopper; means for rotating said rollers toward each other simultaneously, intermittently and interrupting their rotation when in lower-most positions; a reciprocatory carrier operating between said shafts; and supplemental sheet edge supports arranged outside of said shafts and rollers and under said hopper, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CAREY A. CHESHIRE.

Witnesses:

JOSHUA R. H. POTTS,

ROBERT L. OTWELL.