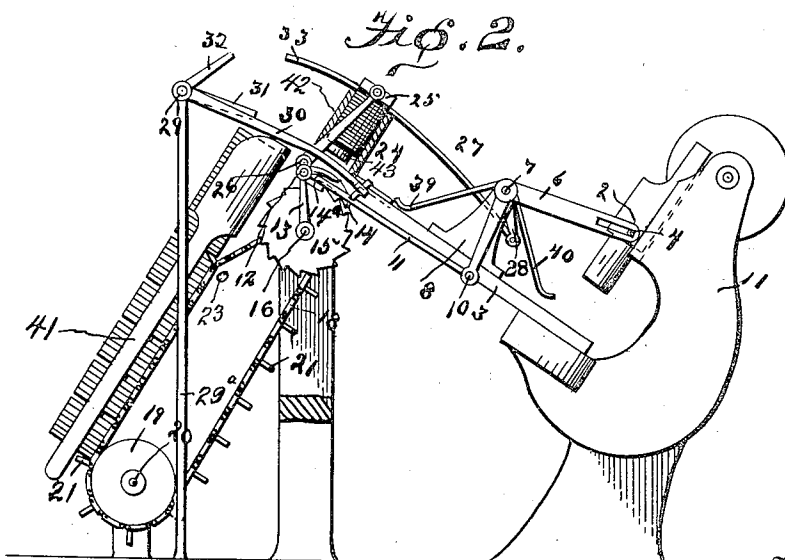
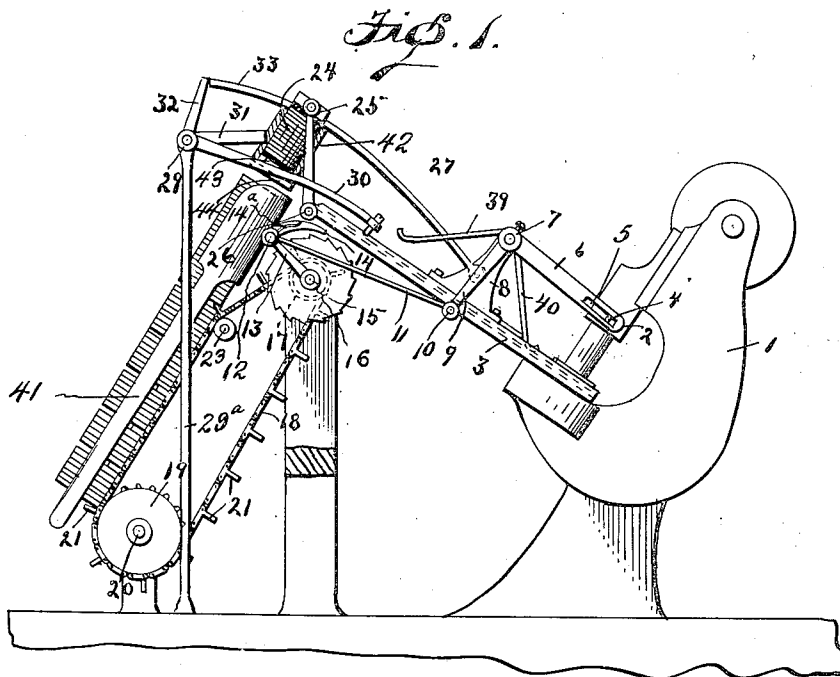


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 FEEDING MECHANISM FOR STAMPING MACHINES.
 APPLICATION FILED NOV. 14, 1904.

946,584.

Patented Jan. 18, 1910.

2 SHEETS—SHEET 1.



Witnesses
J. Mason Warrum
Mary E. Moore.

Inventor
John R. Smith,
 by *David D. Moore.*
 Attorney

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2 SHEETS—SHEET 2.

Fig. 3.

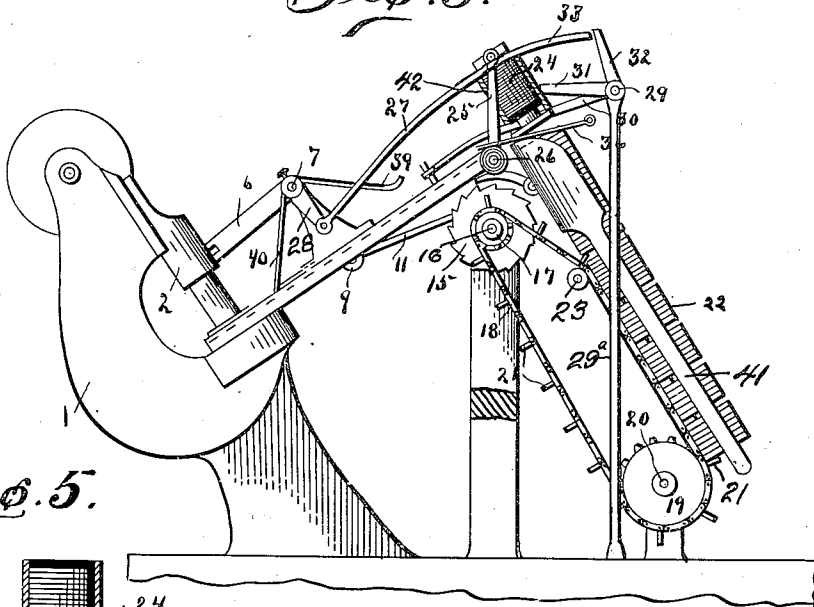


Fig. 5.

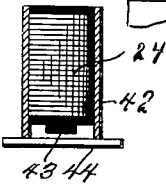
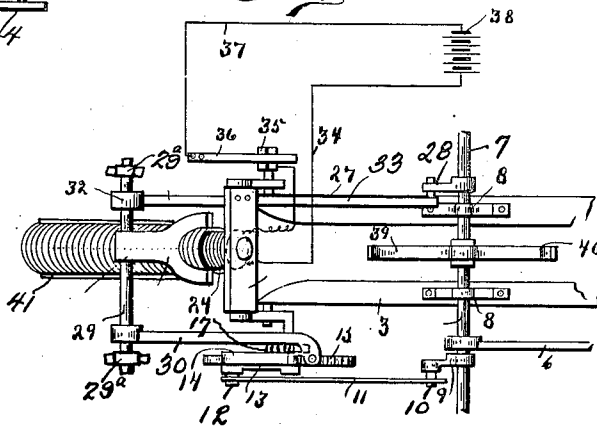


Fig. 4.



Witnesses
J. Mason Wang
Mary E. Moore.

Inventor
John R. Smith,
By David Moore.
Attorney

UNITED STATES PATENT OFFICE.

JOHN RUTHERFORD SMITH, OF NEW HARTFORD, NEW YORK.

FEEDING MECHANISM FOR STAMPING-MACHINES.

946,584.

Specification of Letters Patent.

Patented Jan. 18, 1910.

Application filed November 14, 1904. Serial No. 232,766.

To all whom it may concern:

Be it known that I, JOHN RUTHERFORD SMITH, a citizen of the United States, residing at New Hartford, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Feeding Mechanism for Stamping-Presses, of which the following is a specification.

10 This invention relates to improvements in feeding mechanisms for stamping presses, and the main object of the invention is the provision of a simple and automatic mechanism whereby metal disks are automatically fed to the stamping press in rotation and the feeding is actuated by the stamping mechanism so that the disk is always properly fed, so as to receive the impression from the stamping press.

20 Another object of my invention is the provision of a feeding mechanism operably connected with the stamping mechanism of a stamping press and provided with electromagnetic means for raising the disks and delivering them to the feeding chute combined with mechanism for allowing the disks to pass below the stamping mechanism at the proper instant before stamping.

30 To attain these objects the invention consists of mechanism of this character embodying novel features of construction and combination of parts substantially as disclosed herein.

In the accompanying drawings:—Figure 35 1 is a side elevation of the complete device attached to a portion of a stamping press, the parts being in the position they assume when the topmost disk is about to be delivered to the delivery chute. Fig. 2 is a similar view with the parts in the position they assume when the disk has been delivered to the delivery chute. Fig. 3 is a view taken from the opposite side of the machine, the parts being in a similar position as in Fig. 1. 45 Fig. 4 is a top plan view of the mechanism showing the electro-magnet's circuit in diagram. Fig. 5 is a detailed view of the electro-magnet used in connection with my device.

50 Referring to the drawings:—The numeral 1 designates a portion of a stamping press provided with a reciprocating plunger or die carrier 2 and a delivery chute 3. Provided upon one side of the die-carrier 2 is a

lug or projection 4 which is adapted to operate within a slot 5, of the arm or lever 6, which has its opposite end rigidly secured upon the transverse rocking shaft 7, this shaft being suitably journaled in bearings 8. Carried upon the shaft near one end thereof is a lever or arm 9, which is provided with a stud 10 connected to the rod 11, the said rod having its opposite end connected to a stud 12, of the arm or lever 13, said arm or lever 13 carrying the spring actuated pawl or detent 14, which is adapted to engage the toothed ratchet wheel 15, journaled upon the shaft 16. Upon this same shaft and adapted to be rotated simultaneously therewith, is a small sprocket wheel 17, over which passes an endless sprocket chain 18, said chain passing over a large sprocket wheel 19, journaled upon the shaft 20. This sprocket chain is provided with a series of flights or conveyers 21 which are adapted to deliver the disks 22 to a holder 41 and be released from the disks as the flight passes beyond the roller 23, the said disks being delivered upward and opposite to the outer end of the delivery chute. This much constitutes the means whereby the disks are raised from below to the level of the delivery chute, but in order to deliver the topmost disk of the pile as needed to the delivery chute, I provide the electro-magnet 24, which is carried in the hollow cylindrical holder 42, which is pivotally mounted in the upper end of the arms 25 whose lower ends are journaled upon the projections or studs 26 upon opposite sides of the delivery chute. The cylinder 42 has its lower end, as clearly illustrated in Fig. 5, projecting below the attracting end 43 of the magnet, so that the disk 44, is held against the lower edge of the cylinder during delivery, and out of contact with the end 43. The movement of this electro-magnet is controlled by means of the rod 27 which is connected to the cylinder 42 and to the arm or lever 28 carried by the shaft 7 upon the opposite side from the arm 9.

Arranged in front of the outer end of the delivery chute and beyond the topmost disk is a rock shaft 29, journaled in the upper ends of the rods or supports 29^a, and carrying a pawl actuating lever 30, a fork shaped feed controlling lever 31, and another lever 32, the movement of this rock shaft being

controlled by the outer projecting end 33 of the rod 27 so that when the lever or rod 27 comes in contact with the lever 32, the shaft 29 is rocked raising the feed controlling lever 31 and the pawl actuated lever 30 and at this point a blank or disk is picked by the electro-magnet from the top of the pile, said electro-magnet being energized at this point through the wire 34, circuit breaker 35 mounted upon the opposite end of one of the projections or studs 26, a brush 36, wire 37 and batteries 38; and as the mechanism is moved to the position as shown in Fig. 2 the circuit breaker 35 passes out of contact with the brush 36 thereby de-magnetizing the magnet and as the magnet assumes the position shown in Fig. 2, the disk or blank is dropped upon the outer end of the delivery chute. In passing down the chute, the disk or blank is retained by one end of the flexible arm 39 mounted upon the shaft 7, and as the mechanism continues in the operation this arm is raised so as to allow the blank or disk to slide and be held within the delivery chute by means of the flexible arm 40 mounted upon the shaft and extending in opposite direction from the flexible arm 39, and as the next disk is fed down the chute and is stopped by the flexible arm 39, the arm 40 releases its disk and allows it to pass beneath the die carried by the plunger of the stamping press.

It will be noted that the end 33 of the lever 27 passes out of contact with the lever 32 in its one stroke, thus allowing the fork of the controlling lever 31 to rest on the top of the pile of disks or blanks and use the same as a fulcrum as it bears thereon, before the mechanism has reached the limit of its back stroke, and in so resting on the blanks causes the lever 30 to operate upon the pawl 14. If the pile of blanks or disks is low, this lever 30 is allowed to descend far enough to contact the said pawl and cause it to engage the teeth of the wheel 15. This pawl 14 is held out of engagement with the teeth by means of a small spring 14^a the weight alone of the lever 30 being sufficient to overcome the tension of this spring. If the pile of blanks is high enough, the lever 31 in resting on the blanks does not permit the lever 30 to descend far enough to contact the pawl 14, thus during this period the pawl cannot engage the teeth of the ratchet wheel 15 and the blanks or disks are not raised any higher until necessary.

From the foregoing description taken in connection with the drawings, it is evident that I provide a feeding mechanism for stamping presses which is automatically controllable from the plunger of the press and which will cause the disks or blanks to be fed to the delivery chute in their proper rotation and which is provided with means whereby the delivery mechanism for raising the disks

or blanks is automatically controlled so that the disks or blanks can be fed faster or slower as may be desired.

What I claim as new and desire to secure by Letters Patent is:—

1. In apparatus of the class described, the combination with a reciprocating plunger and an inclined chute leading thereto, of two stops unequally distant from the plunger, means operated by the plunger for throwing the stops alternately into and out of the path of the blanks in the chute, and means actuated by the plunger for delivering single blanks in the chute while the stop more distant from the plunger obstructs the same.

2. In apparatus of the class described, the combination with a reciprocating blank forming plunger and an inclined chute for guiding a succession of single blanks into the path of the plunger, of a rock shaft, above the chute, actuated by the plunger and provided with two oppositely inclined spring arms adapted to be thrown alternately into and out of the path of the blanks in the chute as the shaft rocks back and forth.

3. In apparatus of the class described, the combination with means for guiding a column of superposed blanks, of an endless belt having one fold adjacent to said column guiding means and provided with arms to engage and lift the blanks, and means for actuating said belt intermittently.

4. The combination with a reciprocating plunger and an inclined chute for delivering blanks in its path, of a source of supply for blanks, an electromagnet arranged for moving between said source and chute, a rock shaft oscillated by the plunger and provided with stop arms for obstructing the chute at different points, and means whereby the shaft in rocking moves the electromagnet back and forth to transfer single blanks to the chute.

5. The combination with a reciprocating plunger and an inclined chute for delivering blanks in the path of the same, of a source of supply for blanks, a rock shaft actuated by the plunger and having upon opposite sides stop arms projecting toward the chute, devices for transferring blanks from said source of supply to the chute, means whereby the rocking of the shaft operates said devices, and means whereby the rocking of the shaft controls the supply of blanks to said devices.

6. In apparatus of the class described, the combination with a holder for guiding a column of superposed blanks, of means for raising said blanks in the holder, and devices governed by the height of the topmost blank of the column for actuating said means at intervals.

7. The combination with a reciprocating plunger and an inclined chute for delivering blanks in its path, of a holder for superposed

blanks, means for transferring blanks from the top of the holder to the chute, and devices, between the holder and plunger, whereby the movement of the plunger raises the blanks in the holder at intervals, said devices being arranged to operate only when the uppermost blank is below a predetermined point.

8. The combination with a reciprocating plunger and an inclined chute for delivering blanks in its path, of a holder for superposed blanks, pawl and ratchet operated devices for raising the blanks in the holder, means whereby the uppermost blank when unduly raised prevents the engagement of the pawl, and means for transferring single blanks from the holder to the chute.

9. The combination with a reciprocating plunger and an inclined chute for delivering

blanks in the path of the same, of a holder for a column of superposed blanks, pawl and ratchet actuated devices for raising the column of blanks at intervals, means whereby the pawl is held out of action when the column is unduly raised, means for transferring single blanks from the holder to the chute, a rock shaft actuated by the plunger and provided with stops for obstructing the chute at different points alternately, and means whereby the rock shaft actuates both the transferring devices and the pawl and ratchet devices.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN RUTHERFORD SMITH.

Witnesses:

T. D. WILLIAMS,
S. F. SHERMAN.