

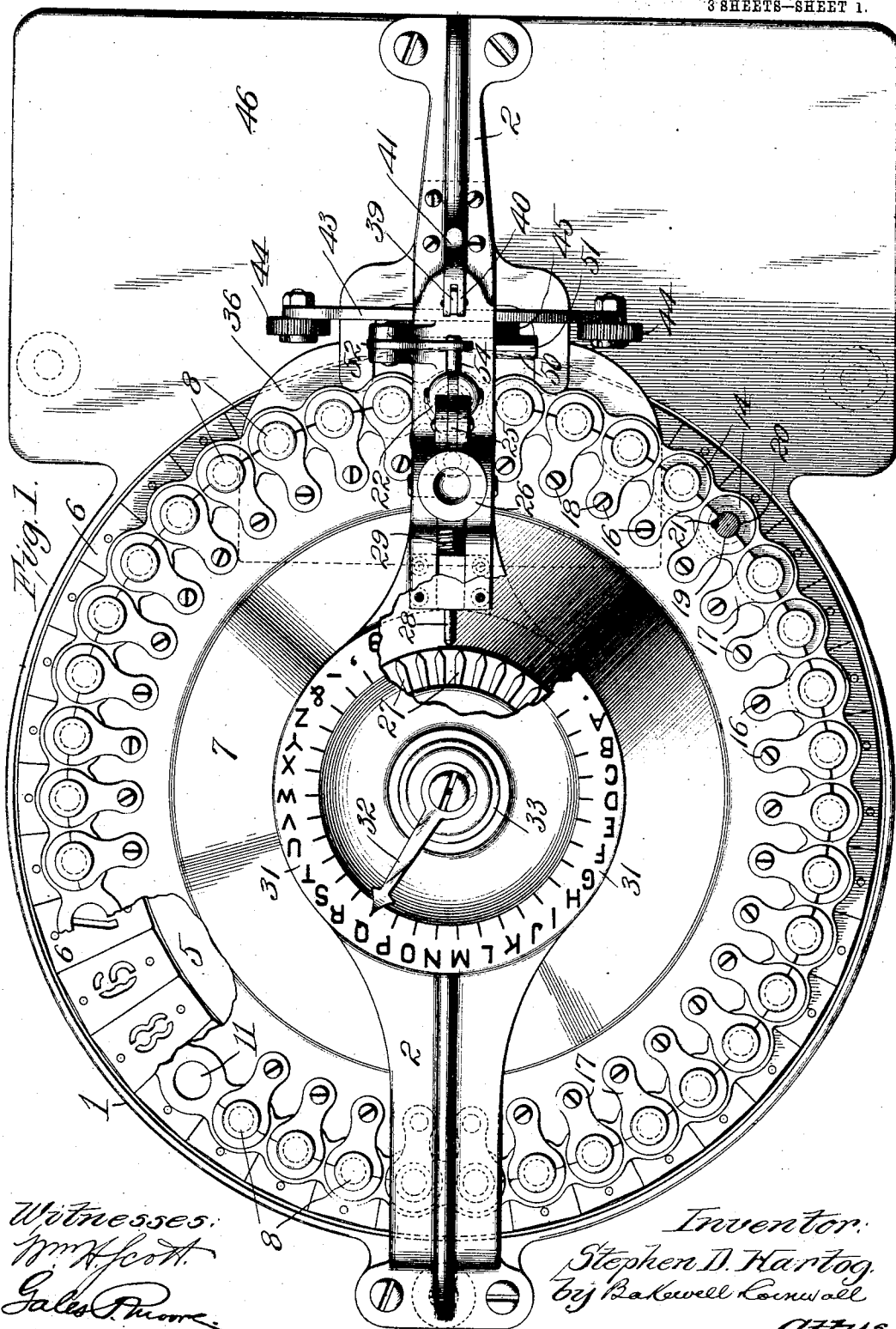
No. 784,675.

PATENTED MAR. 14, 1905.

S. D. HARTOG.
STENCIL CUTTING MACHINE.

APPLICATION FILED AUG. 30, 1902.

3 SHEETS—SHEET 1.



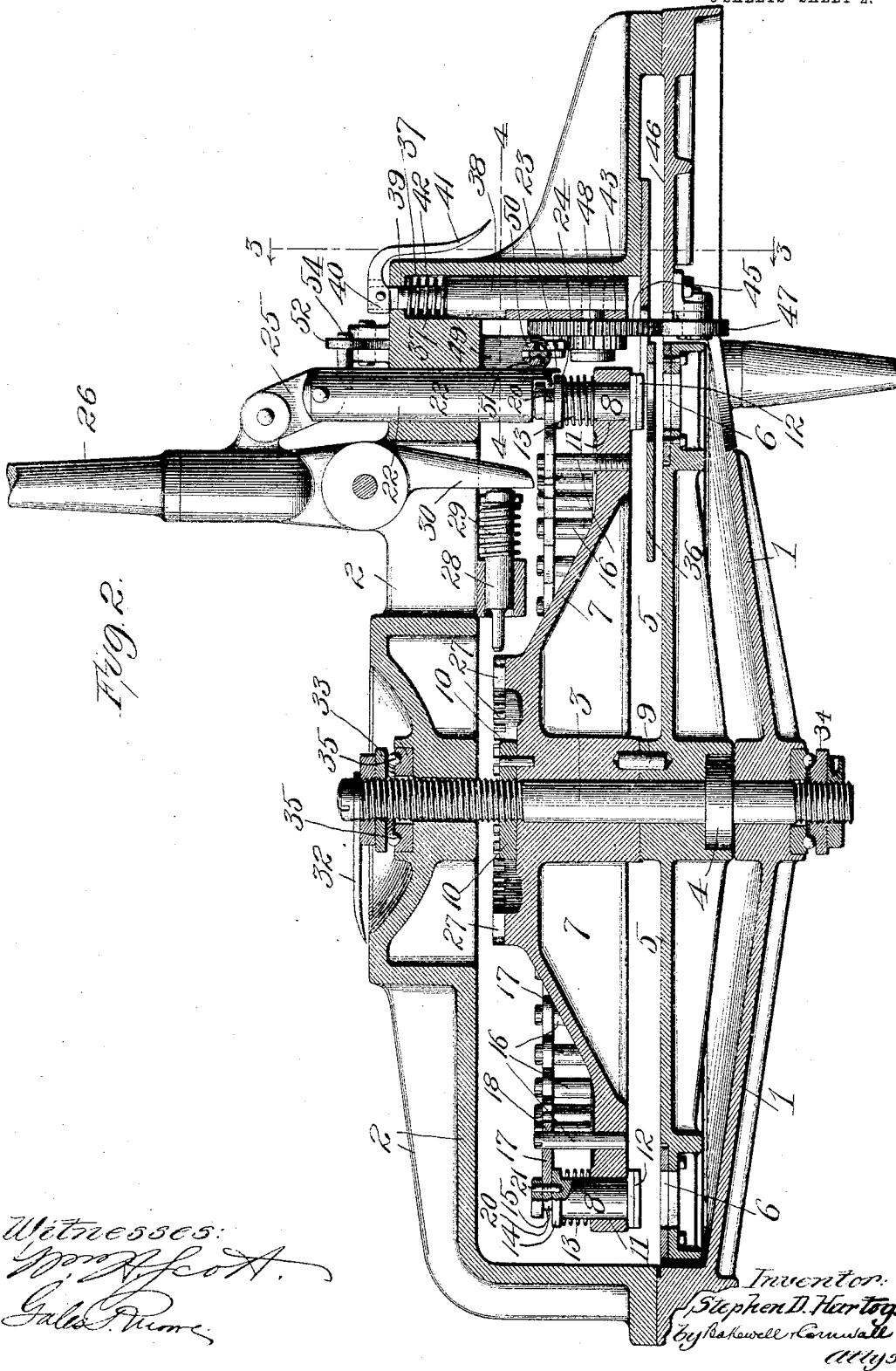
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3 SHEETS—SHEET 3.

Fig. 3.

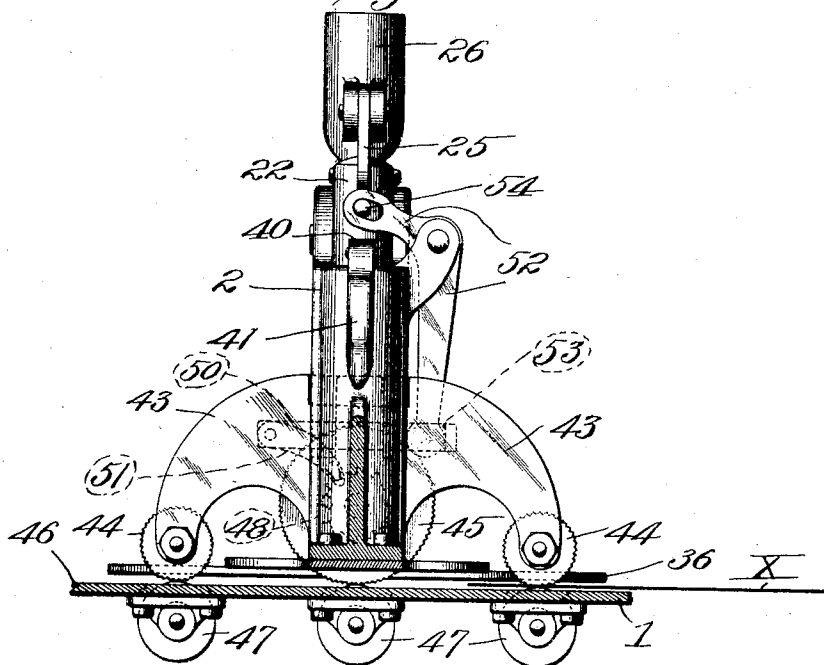
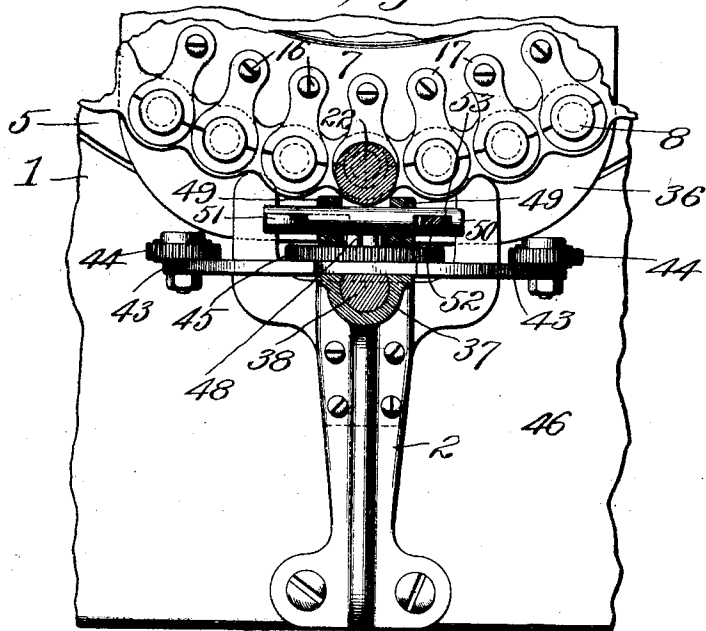


Fig. 4.



Witnesses:
Jm. H. Scott.
G. L. Moore.

Inventor:
Stephen D. Hartog,
by Bakewell & Cornwall
attys.

UNITED STATES PATENT OFFICE.

STEPHEN D. HARTOG, OF ST. LOUIS, MISSOURI, ASSIGNOR TO HARTOG STENCIL MACHINE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

STENCIL-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 784,675, dated March 14, 1905.

Application filed August 30, 1902. Serial No. 121,599.

To all whom it may concern:

Be it known that I, STEPHEN D. HARTOG, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Stencil-Cutting Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view, certain of the parts being broken away. Fig. 2 is a central longitudinal sectional elevation. Fig. 3 is a detail front elevation showing the feeding mechanism on the line 3 3 of Fig. 2, and Fig. 4 is a detail top plan view on the line 4 4 of Fig. 2.

My invention relates to improvements in stencil-cutting machines, my object being to provide an apparatus of simple construction and operation and to so combine a pointer with the rotatable member carrying the dies and with a stationary index that said pointer travels with the said rotatable member and the machine can be quickly and accurately operated.

To these ends and also to improve generally upon devices of the character indicated, my invention consists in the various matters hereinafter described and claimed.

Referring now more particularly to the drawings, 1 indicates the supporting-base of the machine-frame, and 2 indicates an arch of said frame supported above and upon the said base. Seated in suitable openings through said arch and base is a vertical spindle 3, which is provided at a point slightly above the upper surface of the said base with a circumferential projection or collar 4, the said spindle being supported in its bearings in a manner to be more fully hereinafter described. Secured to the spindle to rotate therewith and resting upon the before-mentioned projection 4 is a disk 5, which has the female die members 6 arranged circumferentially upon the same, and secured to said spindle above said disk 5 is a circular plate 7, which

carries the male die members 8. The disk and plate carrying the said die members are so connected that their rotation with each other is insured, as by means of a dowel 9 entering the hubs of each of said parts. Preferably the said disk 5 and plate 7 are placed upon the spindle with the disk resting upon the projection 4 and the plate 7 resting upon the said disk, and the portion of the spindle projecting above the top of the hub of the said plate being threaded a locking-nut 10 is secured upon the spindle and the disk and plate are firmly clamped between the said nut and the projection 4. When assembled, the portions of the disk and plate which carry the cooperating die members are spaced from each other.

The male die members or punches comprise cylindrical plungers which are slidably supported in circular openings 11 in the supporting-plate 7 and have the punches proper, 12, fastened upon their lower ends and projecting beyond the periphery of said plungers in order to limit upward movement of the same through the openings in the supporting-plate. A spring 13, coiled about each of said plungers, bears between the upper surface of the supporting-plate and a circumferential projection or flange 14 upon the plunger, and above said flange each plunger is provided with a circumferential groove 15. Adjacent each plunger and in rear of the same—that is, toward the center of the carrying-plate 7—is a guide-post 16, supported in the said plate and extending vertically therefrom, and a guide-plate 17 is provided at one end with an opening 18, through which the guide-post can move, but in which the post fits sufficiently snugly to cause the plate to be accurately guided in its reciprocations. The opposite end of the said guide-plate is provided with a substantially semicircular recess 19, which receives the reduced shank 20 of the plunger, the said end of the said plate fitting in the circumferential groove 15 about the plunger. A vertical pin 21 is seated in each plunger and extends across the guide-plate, a portion of said pin being received in said plate and

another portion thereof being received in the plunger, whereby the plate and plunger are held against rotation with relation to each other; but said plate can be readily removed from the plunger-groove when the guide-post is removed. Thus the plate 17 constitutes a member whose position is fixed with relation to the punch, said member serving to hold the punch against circumferential displacement, but being separable from said punch. The pin 21 also serves as a means for accurately setting the plunger and guide-plate when the parts are reassembled.

Vertically slidable through an opening in the arch 2 of the frame member is a plunger 22, beneath which the various punches 8 pass as the disk 5 and the circular plate 7 are revolved, and depending from said plunger is a finger 23, provided with an inwardly-extending projection 24. When a punch lies under the said plunger, the said finger 23 is upon the outer side of the punch and the projection 24 lies in the recess 15. The plunger is connected by a suitable link 25 to a lever 26, pivoted upon the arch-plate 2, and as said lever is depressed the plunger is lowered and the particular punch beneath the same is forced downwardly to cooperate with the proper female die member. As the lever is returned to normal position the spring about the punch raises the same; but should the punch stick or the spring fail to operate the said projection 24 engages the upper wall of the recess 15, and thus lifts the punch.

Extending circumferentially about the spindle 3 and formed in the plate 7 are a series of spacing-teeth 27, and supported upon the arch-plate 2 is a horizontally-disposed plunger 28, whose end is adapted to be received between any of the said teeth, said plunger being normally held in retracted position clear of the teeth by means of a spring 29. The teeth are preferably beveled on their outer ends, as shown in Fig. 1, in order to guide the plunger into proper position between adjacent teeth, and the plunger is thrown into projected position by means of a finger 30 upon the before-mentioned operating-lever 26.

The arch-plate 2 has upon its upper surface a dial or index 31, which is concentric with the spindle, and rigidly mounted upon the upper end of said spindle to rotate therewith is an index-finger or pointer 32, which sweeps over the dial or index, the characters upon the stationary dial being so positioned thereon that when cooperating die members to produce a given character are under the plunger 22 the said finger points to the corresponding character upon the said dial. Thus the rotatable carrying-plate 7 can be directly grasped by the operator and quickly and accurately thrown into the desired position, the index-finger moving directly with the said rotatable die-carrying element and cooperating with the stationary index. The operator quickly learns

the positions of the various characters upon this stationary index and can rapidly and accurately bring the index-finger to the various positions into which he desires to throw the same.

A washer or other suitable bearing-plate 33, fastened upon the upper portion of the spindle, rests above the upper surface of the arch-plate 2 and has a bearing thereon, so that the said spindle, with its carried parts, is hung upon the said plate with the projection 4 slightly above the upper surface of the base-plate 1, and a second adjustable bearing-plate 34, secured upon the other end of the spindle, has a bearing upon the under side of the base-plate, and said spindle is thus accurately journaled. Preferably ball-bearings 35 are provided between the plates 33 and 34 and the respective plates 1 and 2. As the spindle, with its carried parts, is hung from an upper bearing, it tends to hang in a truly-vertical position at all times, and thus rotates evenly and easily.

A stripper-plate 36 is supported from the arch-plate 2 and extends between the cooperating die members. Vertically movable in a suitable seat 37 in the arch-plate is a presser-bar 38, which has a reduced shank 39 projecting above the upper surface of the arch-plate and pivotally connected to a lifting-cam 40, provided with an operating-finger 41, a spring 42, coiled about said reduced shank and bearing between the under surface of the arch-plate and the larger portion of the presser-bar, serving to yieldingly hold said bar in depressed position. Connected to said bar, movable therewith, and extending upon the sides of the same is a carrying-plate 43, in whose ends are journaled serrated or roughened rollers 44, and rotatably mounted upon the said plate and presser-bar is an intermediate driving-roller 45, whose periphery is serrated or roughened. The roughened rollers lie slightly above the feed-table 46 and cooperate with idler-rollers 47, which are journaled below the said feed-table and project upwardly through slots in the same. Mounted upon the rear face of the driving-roller or formed integral therewith is a ratchet-disk 48, and supported in suitable guides 49, depending from the said arch-bar, is a horizontally-slidable-bar 50, having a pawl 51 pivotally supported in one end and cooperating with the ratchet-teeth of the said disk 48. A bell-crank lever 52 is pivoted upon a suitable bracket extending from the said arch-bar and has one arm in operative engagement with the said bar 50, as by being received in a slot 53, while the other arm of said lever is slotted to receive a pin 54 upon the plunger 22. When the presser-bar is raised, the rollers 44 and 45 are lifted out of engagement with the rollers 47, and the sheet of paper or other material X to be operated upon can be slid into position upon the feed-table beneath the

plunger 22, and when the presser-bar is lowered the rollers 44 and 45 engage the said sheet of material and hold the same in position. At each depression of the operating-lever the driving-roller 45 will be operated in a manner which will be apparent and the material will be fed forwardly the proper distance. The relation between the pawl 51 and the ratchet-teeth with which the same coöperates is such that the roller 45 is given its full movement and the pawl slips off its co-operating tooth just prior to the time that the punch is about to engage the sheet of material to be acted upon, so that the said sheet is at rest during the punching action.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. In a machine of the character indicated, a supporting-arch, a rotatable spindle hung therefrom and having unrestricted rotation, said arch being provided with a circular index about said spindle, a die-carrying member supported upon said spindle to rotate therewith, and a pointer also mounted on said spindle and lying above said index and co-operating therewith; substantially as described.

2. In a machine of the character indicated, upper and lower frame-plates, a rotatable spindle hung from said upper plate and passing through said lower plate, a die-carrying member supported upon said spindle to rotate therewith, and an adjustable member upon the end of said spindle below said lower plate and having an upward bearing thereagainst; substantially as described.

3. In a machine of the character indicated, a punch-carrying plate provided with a circular seat, a cylindrical punch movable in said seat, a relatively fixed member separable from said punch, and a pin engaging both said punch and said member; substantially as described.

4. In a machine of the character indicated, a punch-carrying plate provided with a circular seat, a cylindrical punch movable in said seat, a relatively fixed member separable from

said punch, and a pin extending in a line across said member and seated therein and in said punch; substantially as described.

5. In a machine of the character indicated, a punch-carrying plate having a circular seat, a cylindrical punch movable in said seat, a guide-plate abutting against said punch but not encircling the same, whereby said punch and guide-plate are separable from each other, one of said last two mentioned elements entering a groove in the other thereof, means for guiding said plate, and coöperating means upon said punch and guide-plate for holding said punch against circumferential displacement; substantially as described.

6. In a machine of the character indicated, a punch-carrying plate having a circular seat, a cylindrical punch movable in said seat, a guide-plate abutting against said punch but not encircling the same, whereby said punch and guide-plate are separable from each other, one of said last two mentioned elements entering a groove in the other thereof, means for guiding said plate, and a pin seated partly in said plate and partly in said punch; substantially as described.

7. In a mechanism of the character indicated, a feed mechanism including a presser member having movement toward and away from its coöperating member, a ratchet upon said presser member, a bar slidable transverse the line of said movement of said presser member, a pawl pivoted to said bar and coöperating with said ratchet, and means for sliding said bar; substantially as described.

8. In a mechanism of the character indicated, punches, a plunger for operating the same, a feed mechanism including a presser member having movement toward and away from its coöperating member, a ratchet upon said presser member, a bar above said ratchet and slidable transverse the line of said movement of said presser member, a pawl pivoted to said bar and coöperating with said ratchet, and a suitably-supported lever connected to said bar and having pin-and-slot connection with said plunger; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 22d day of August, 1902.

STEPHEN D. HARTOG.

Witnesses:

GALES P. MOORE,
GEORGE BAKEWELL.