

M. H. MANN.  
PRINTING MACHINE.  
APPLICATION FILED JUNE 24, 1908.

905,548.

Patented Dec. 1, 1908.

Fig. 1.

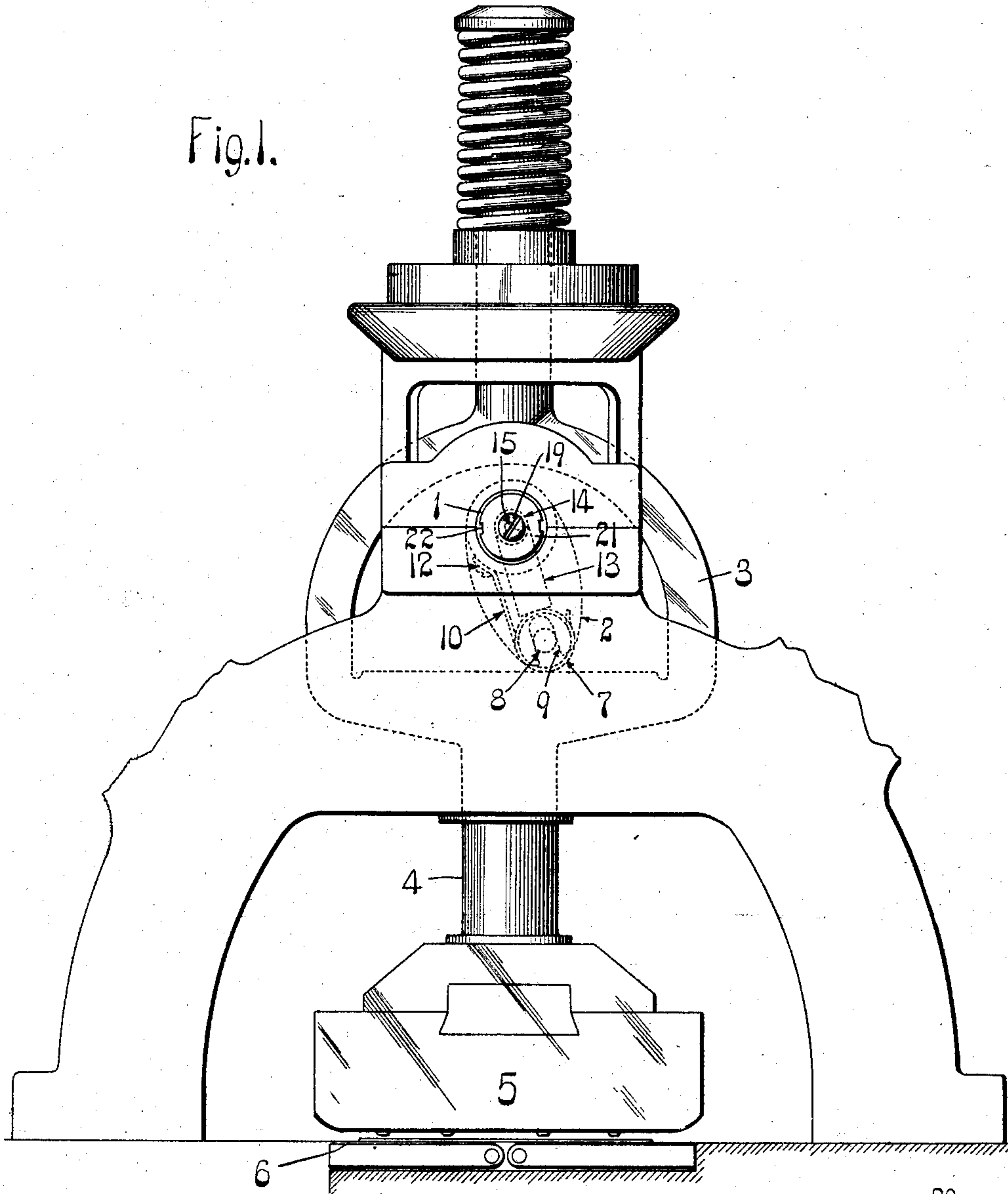
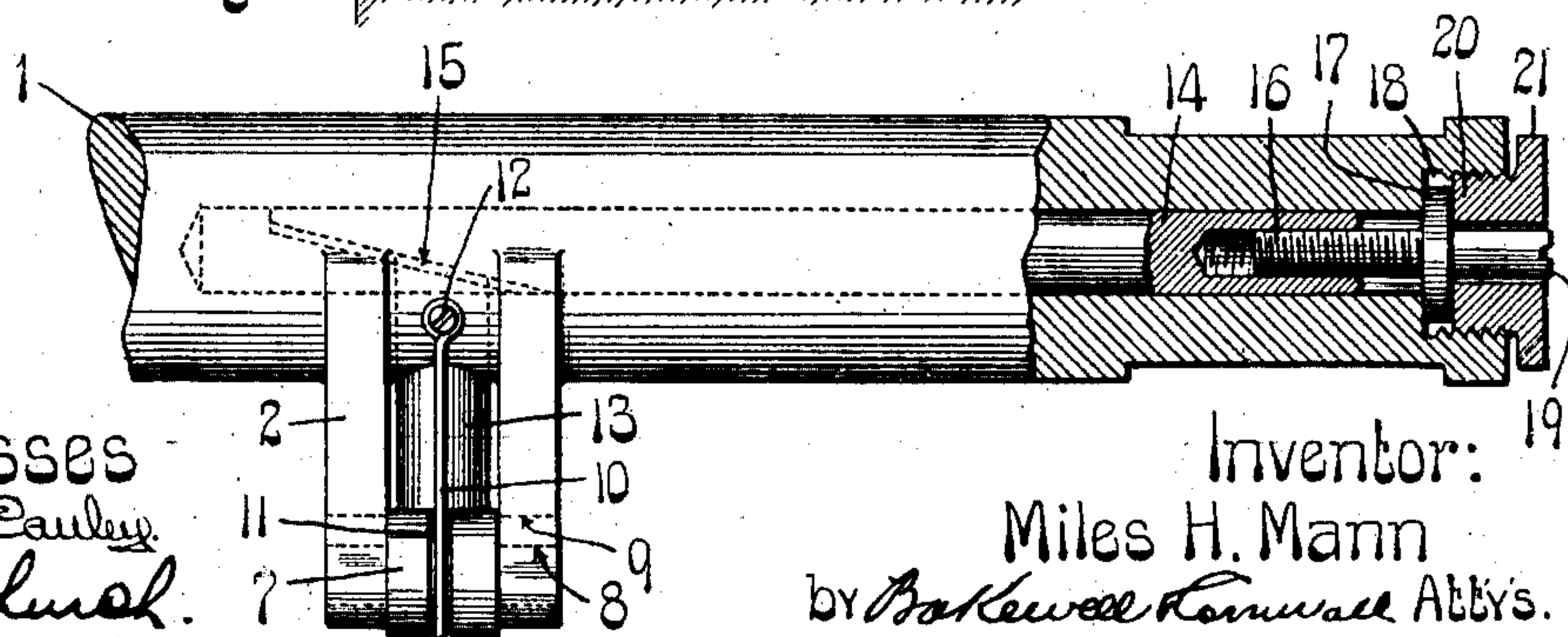


Fig. 2.



Witnesses  
A. J. McCauley  
Wells L. Church.

Inventor: Miles H. Mann  
by Baker & Cornwall Attys.



# UNITED STATES PATENT OFFICE.

MILES H. MANN, OF LOUISIANA, MISSOURI, ASSIGNOR TO FRANK W. BUFFUM, TRUSTEE, OF LOUISIANA, MISSOURI.

## PRINTING-MACHINE.

No. 905,548.

Specification of Letters Patent.

Patented Dec. 1, 1908.

Application filed June 24, 1908. Serial No. 440,145.

*To all whom it may concern:*

Be it known that I, MILES H. MANN, a citizen of the United States, residing at Louisiana, Missouri, have invented a certain  
5 new and useful Improvement in Printing-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  
10 being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of a portion of a card printing machine constructed in accordance with my invention; and Fig. 2 is  
15 a detail view, partly in vertical section of the drive shaft of the machine.

This invention relates to printing machines, and particularly to printing machines provided with a reciprocating type-  
20 carrier and a cooperating platen or pad for holding the articles to be printed, such, for example, as the card printing machine shown in my pending application Serial No. 404,284, filed November 29, 1907.

25 The machine illustrated in the application above referred to comprises a reciprocating plunger which carries a type-carrier, and a drive shaft provided with a cam arranged inside of a yoke on said reciprocating plun-  
30 ger.

The main object of my present invention is to provide means whereby the stroke of the type-carrier plunger can be varied so as to cause the type in the type-carrier to exert  
35 the same pressure on cards of different thicknesses.

Another object of my invention is to provide a shaft having a cam or arm connected thereto, a friction roller carried by said cam  
40 or arm, and means for adjusting said roller toward and away from the shaft so as to vary the degree of movement imparted to the member which the cam or arm on the shaft actuates.

45 Referring to the drawings which illustrate the preferred form of my invention, 1 designates a drive shaft provided with a cam or arm 2 that is arranged inside of a yoke 3 on a vertically disposed plunger 4, said plunger being provided with a type-  
50 carrier 5 that contains type which operate on a card blank or similar object mounted on a pad or platen 6. The cam 2 is bifurcated, as shown in Fig. 2, so as to form

practically two arms or ears between which  
55 a roller 7 is arranged, said roller projecting slightly beyond the periphery of the cam so that it will contact with the inner surface of the yoke 3 and thus reduce the friction between the yoke and the member that actu-  
60 ates it. The roller 7 is provided with trunnions 8 that project through open-ended elongated slots 9 in the two arms or ears that constitute the cam 2, and yielding means, preferably a spring 10, is provided for hold-  
65 ing the roller 7 in operative position. In the construction herein shown, the spring 10 consists of a piece of spring wire having a hook-shaped portion that lies in a groove 11 formed in the roller 7 and provided at its op-  
70 posite end with an eye which receives a fastening device 12 that connects the spring to the cam, or to the portion of the shaft 1 that lies between the two arms that form the cam.  
75

A plunger 13 that is mounted in an opening in the shaft 1 between the two arms or ears that form the cam 2, bears against the roller 7, as shown in Fig. 2, and thus holds it a slight distance beyond the periphery of  
80 the cam 2, the plunger 13 being utilized to move the roller 7 outwardly against the inward force that the spring 10 exerts on said roller. To enable the roller 7 to be ad-  
85 justed relatively to the cam 2 and thus vary the stroke of the plunger 4 I have provided the shaft 1 with a rod 14 that can be moved longitudinally to force the plunger 13 and roller 7 outwardly. This rod 14 is provided  
90 with an inclined face that cooperates with an inclined face on the inner end of the plunger 13, as shown in dotted lines in Fig. 2, so that when the rod is moved in one direc-  
95 tion it will force the plunger 13 outwardly and thus move the roller 7 relatively to the cam 2 or member in which it is mounted. When the rod 14 is moved in the opposite direction the spring 10 will move the roller  
100 7 inwardly. The rod 14 herein shown is round and I have therefore provided it with a longitudinally extending groove that receives a rib 15 on the inner end of the plunger 13, as shown in dotted lines in Fig. 2, so as to prevent the rod from turning. It will, of course, be obvious, however, that  
105 the rod 14 could be constructed in numerous ways to prevent it from turning and therefore I do not wish it to be understood that



my broad idea is limited to the construction herein shown. An adjusting screw 16 enters a screw-threaded opening in the end of the rod 14, and said screw is provided with a flange 17 that bears against the bottom of a recess 18 formed in the end of the shaft 1 so as to prevent said screw from moving inwardly when it is rotated to impart longitudinal movement to the rod 14. The screw 16 is provided with a head 19 in which a slot is formed to receive a screw-driver or other suitable implement for turning the adjusting screw. The adjusting screw is locked in position by means of a nut 20 having external screw-threads that cooperate with screw-threads on the interior of the recess 18 in the end of the shaft 1, the inner end of said nut bearing against the flange 17 on the adjusting screw to clamp it against the bottom of the recess 18 in the shaft. The nut 20 is provided with an opening through which the head 19 of the adjusting screw extends, and said nut is also provided with a knurled head 21 in which slots 22 are formed to receive a spanner wrench.

By loosening the locking nut slightly so that its inner end will not bear upon the flange of the adjusting screw said screw can then be rotated so as to move the rod 14 longitudinally of the shaft 1 and thus move the roller 7 relatively to the cam 2 so as to vary the stroke of the plunger.

A device of the construction above described forms a very efficient means for accurately and quickly varying the stroke of the plunger which carries the type and overcomes the necessity of building up the pad or platen 6 when cards of different thickness are to be operated on.

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

1. A machine of the character described, provided with a shaft provided with an arm, a roller carried by said arm, yielding means for moving said roller in one direction relatively to the shaft, means for moving said roller in the opposite direction against the force of said yielding means, and a type carrier plunger adapted to be actuated by said roller substantially as described.

2. A machine of the character described, provided with a shaft, a bifurcated cam connected thereto, a roller arranged in the bifurcated portion of said cam, yielding means for holding said roller in position, means for moving said roller outwardly away from the shaft, and a type carrier plunger adapted to be actuated by said roller substantially as described.

3. A machine of the character described, provided with a shaft having a cam or arm connected thereto, a roller arranged in a slot or opening in said cam and forming part of the periphery of the cam, means for ad-

justing said roller relatively to the cam, and a type carrier plunger adapted to be actuated by said roller substantially as described.

4. A machine of the character described, provided with a shaft having a cam or arm connected thereto, a roller arranged in a slot or opening in said cam and forming part of the periphery of the cam, yielding means for holding said roller in position, means for moving said roller outwardly to increase the area of the cam, and a type carrier plunger adapted to be actuated by said roller substantially as described.

5. A machine of the character described, provided with a shaft provided with a cam or arm, a roller arranged in a slot or opening in said arm, a yielding device lying in a groove in said roller for holding it in position, means for moving said roller outwardly against the force of said yielding device, and a type carrier plunger adapted to be actuated by said roller substantially as described.

6. A machine of the character described, provided with a shaft having a cam or arm connected thereto, a roller carried by said cam and forming part of the periphery of the cam, a device for moving said roller relatively to the cam, an adjustable member mounted in the shaft for actuating said device, and a type carrier plunger adapted to be actuated by said roller substantially as described.

7. A machine of the character described, provided with a shaft having an arm or cam connected thereto, a roller arranged in a slot or opening in said cam and forming part of the periphery thereof, yielding means for retaining said roller in position, a plunger adapted to engage said roller and move it relatively to the cam, an adjustable device carried by the shaft for actuating said plunger, and a type carrier plunger adapted to be actuated by said roller substantially as described.

8. A machine of the character described, provided with a shaft having an arm or cam connected thereto, an adjustable device mounted in a slot or opening in said cam and forming part of the periphery thereof, means carried by said shaft for moving said device relatively to the cam, and a type carrier plunger adapted to be actuated by said roller substantially as described.

9. A machine of the character described, provided with a shaft having an arm or cam connected thereto, an adjustable device which forms part of the periphery of said cam, means carried by said shaft for adjusting said device relatively to the cam, and a type carrier plunger adapted to be actuated by said adjustable device substantially as described.

10. A machine of the character described, provided with a shaft having a cam or arm connected thereto, an adjustable device arranged in a slot or opening in said cam and



forming part of the periphery thereof, yielding means for holding said device in position, a plunger for moving said device against the force of said yielding means, an  
5 adjusting member arranged in the shaft for actuating said plunger, and a type carrier plunger adapted to be actuated by said adjustable device substantially as described.

11. A machine of the character described,  
10 provided with a shaft having a cam or arm connected thereto, an adjustable device arranged in a slot or opening in said cam and forming part of the periphery thereof, yielding means for holding said device in posi-  
15 tion, a plunger for moving said device against the force of said yielding means, an adjusting member arranged in the shaft for actuating said plunger, means for locking said adjusting member, and a type carrier  
20 plunger adapted to be actuated by said adjustable device substantially as described.

12. A machine of the character described, provided with a shaft having an arm or cam connected thereto, a roller arranged in a slot  
25 or opening in said cam, a plunger for moving the roller relatively to the cam, a rod arranged in said shaft and provided with an inclined face that coöperates with an inclined face on said plunger, an adjusting screw for  
30 moving said rod longitudinally of the shaft, and a type carrier plunger adapted to be actuated by said roller substantially as described.

13. A machine of the character described,  
35 provided with a shaft having an arm or cam connected thereto, a roller arranged in a slot or opening in said cam, a plunger for moving the roller relatively to the cam, a rod arranged in said shaft and provided with an  
40 inclined face that coöperates with an inclined

face on said plunger, an adjusting screw for moving said rod longitudinally of the shaft, a flange on said adjusting screw which bears against a shoulder on the shaft, a locking nut  
45 for clamping said flange against said shoulder, and a type carrier plunger adapted to be actuated by said roller substantially as described.

14. A machine of the character described, provided with a shaft having a bifurcated  
50 cam connected thereto, a roller arranged between the bifurcated portions of said cam and having trunnions that enter elongated slots in the cam, a yielding device which enters a groove in said roller for holding it in  
55 position, a plunger for moving the roller outwardly against the force of said yielding device, a rod arranged in said shaft and provided with an inclined face that engages the inclined face on the inner end of said plun-  
60 ger, an adjusting screw extending into a screw-threaded opening in said rod and provided with a flange that bears against the bottom of a recess in said shaft, a locking nut arranged in said recess for clamping the  
65 flange on the adjusting screw against the bottom of said recess, said locking nut being provided with an opening through which the head of the adjusting screw extends, and a type carrier plunger adapted to  
70 be actuated by said roller substantially as described.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 20th day of June 1908.

MILES H. MANN.

Witnesses:

PETEE NEEREY,  
LEWIS TRIER.