

(No Model.)

T. A. NORRIS.  
PUNCHING MACHINE.

No. 520,215.

Patented May 22, 1894.

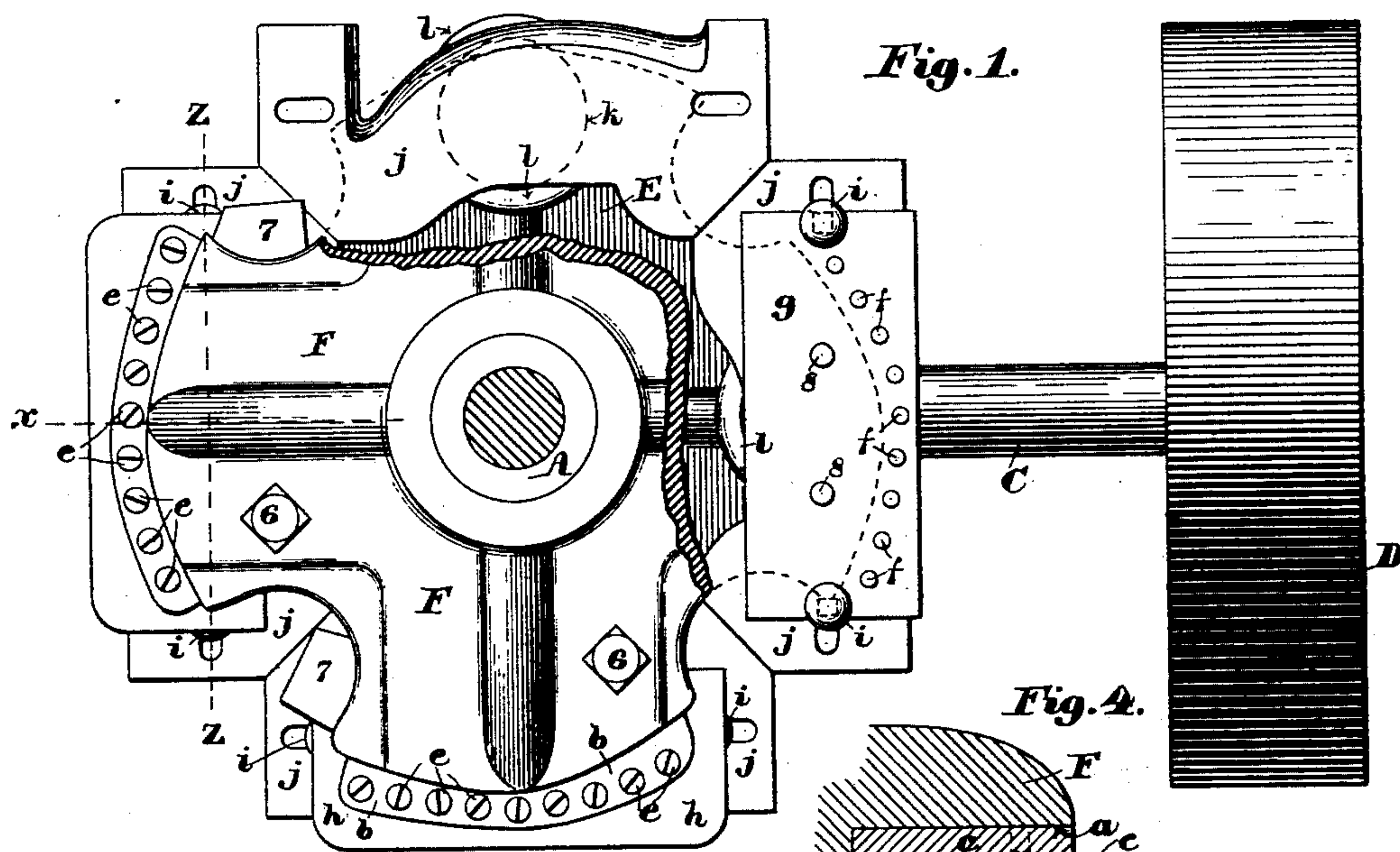


Fig. 4.

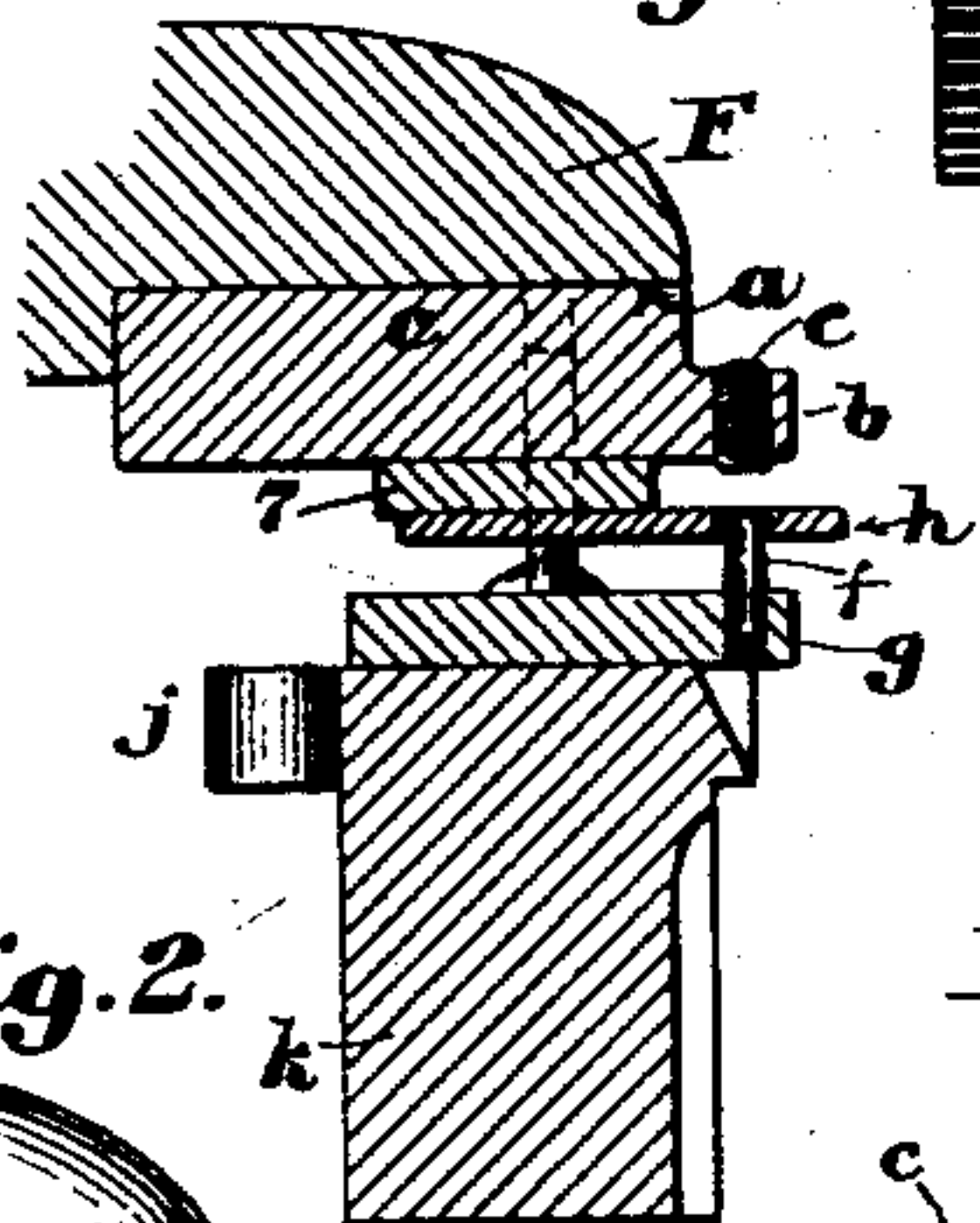
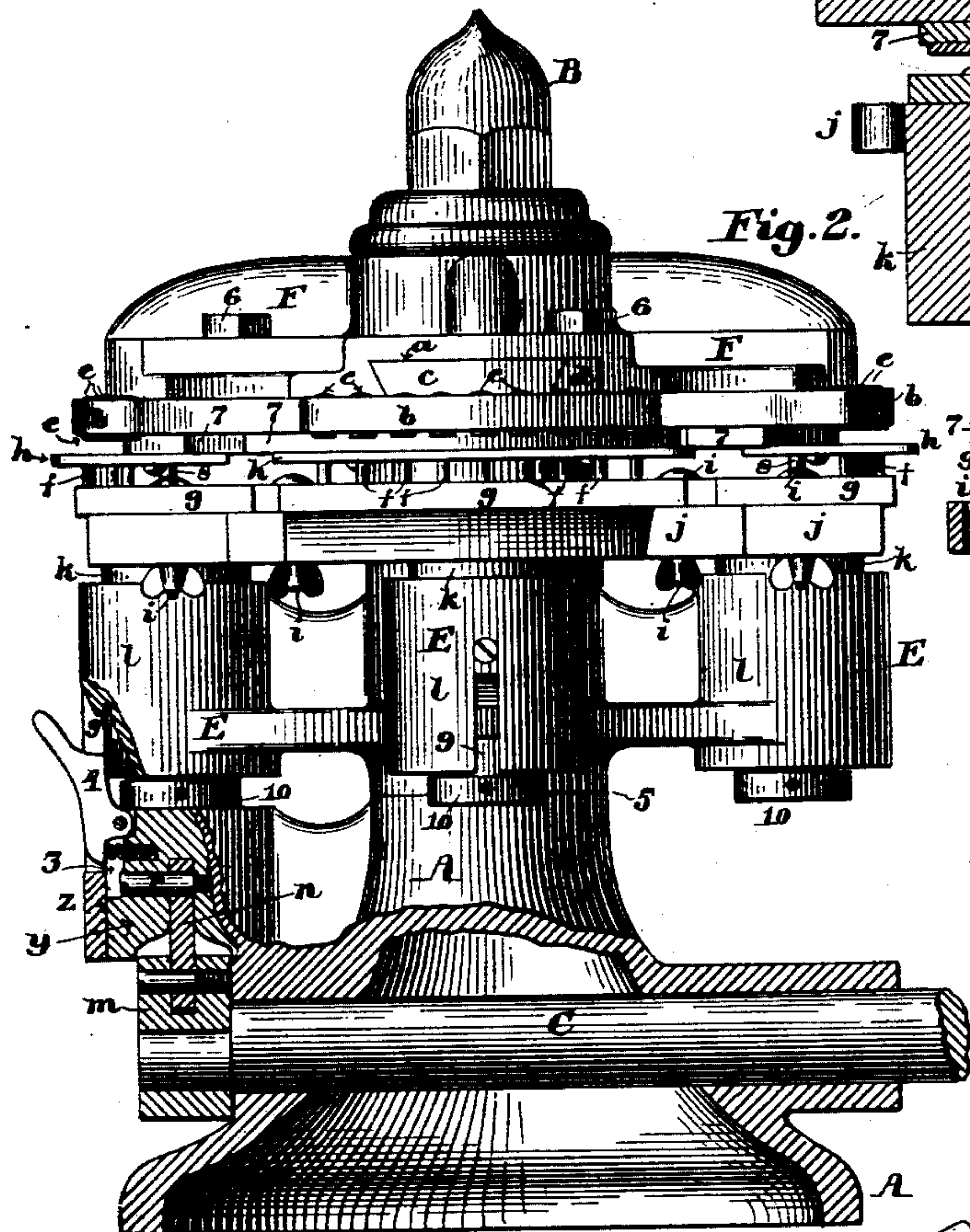
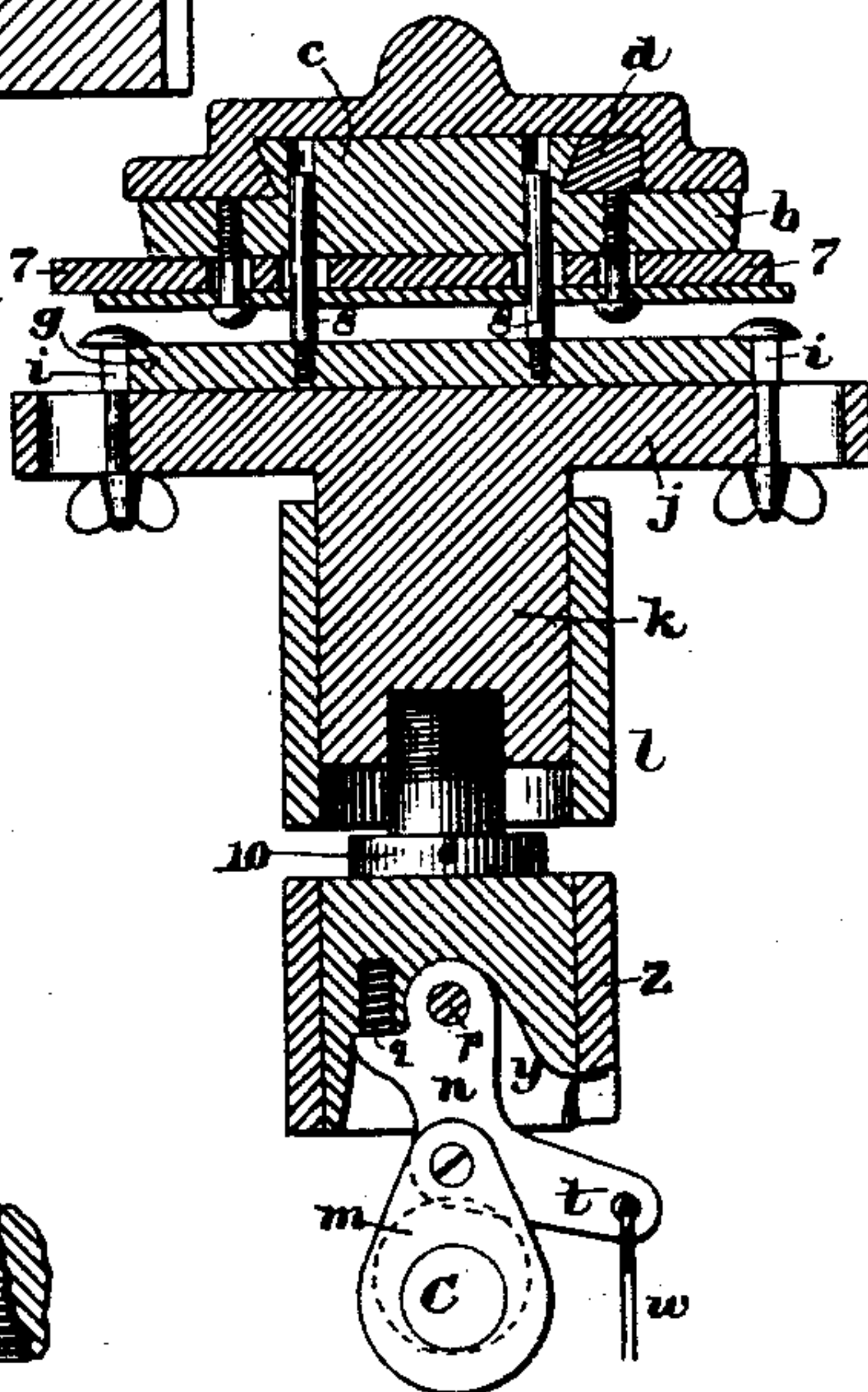


Fig. 3.



Witnesses:  
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L. W. Hower

Inventor:  
Thomas A. Norris  
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# UNITED STATES PATENT OFFICE.

THOMAS A. NORRIS, OF BROCKTON, MASSACHUSETTS.

## PUNCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 520,215, dated May 22, 1894.

Application filed January 16, 1894. Serial No. 497,045. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS A. NORRIS, of Brockton, in the county of Plymouth and State of Massachusetts, have invented a new and useful Improvement in Punching-Machines, which will, in connection with the accompanying drawings, be hereinafter fully described, and specifically defined in the appended claims.

In said drawings, Figure 1 is a top plan view of a machine embodying my invention; a portion being broken away to show certain of the parts. Fig. 2 is a side elevation of Fig. 1; the lower part of the base being shown in section, and the right hand part of the shaft and the pulley being broken away. Fig. 3 is a vertical section taken as on line *z*, Fig. 1; and Fig. 4 is also a vertical section taken as on line *x*, Fig. 1.

The object of my invention is to provide a machine in which the uppers of shoes can at one operation have all the holes punched for the insertion of eyelets in which the shoe lace is inserted; and the invention consists in a machine, provided with a base on which it stands, and from which rises a spindle on which is mounted a sleeve arranged to be rotated and to be locked by a latch. Upon said sleeve are formed a series of platens, arranged around a common center, and in which are inserted, in suitably curved lines, a series of brass plugs against which a series of cutters act. Below said platens, and upon said sleeve are formed a series of sleeves or tubes in which are inserted the stems of another series of platens to which are bolted a set of punch carrying plates, which punches perforate the shoe uppers by cutting against said brass plugs as the disks are forced upward; and a lower sleeve formed upon said base carries a plunger, that as it is reciprocated acts against an upper plunger to thereby reciprocate the punches that are carried by said upper plungers; said lower plunger being provided with a latch that holds the sleeve from rotation and is itself reciprocated by the action of the shaft which is revolved by a pulley and belt; all as will be next herein pointed out and then claimed.

Referring again to said drawings, A represents the base, which extends above line 5 as a stem, and is surmounted by nut B. In

said base is journaled the short shaft C, on which is secured the driving pulley D.

Between line 5 and nut B is arranged sleeve E, so as to be rotated as desired on base A. A platform F is formed on sleeve E near its top, and in said platform are a series of dovetail recesses *a*, in which are inserted the dovetail slides *c* as also gibs *d*; held by a screw 6. A series of platens *b* are formed integral with dovetails *c* and in said platens are inserted a series of brass screw plugs *e*, arranged upon curves to conform to the curvature of the eyelet holes desired to be punched in the shoe. A piece 7 is formed upon or secured to platen *b*, and arranged next to part 7 is the stripper *h*, also secured to part *b*. A platen *g* having steady pins 8 that enter part *b* is held by bolts *i* upon plate *j*; and a series of cutters *f* are screw threaded in said platen *g*. Said cutters are arranged upon the same curved line as are studs *e* so as to cut against them. The plate *j* is formed upon or secured to stem *k* that is arranged to move in sleeve *l* formed upon sleeve E. A latch 4 is pivoted in plunger *y* that reciprocates in sleeve *z* formed on base A; a spring being arranged, as shown, to engage the latch 4 in notch 9 in sleeves *l*.

On the eccentric end of shaft C is a crank *m* which is connected with link *n* that is engaged at *p* with plunger *y*; a spring *q* serving, when not controlled, to throw said link out of alignment so that crank *m* will not raise the plunger; but by holding down arm *t* by means of cord *w* attached to a treadle the parts are rendered operative. A stud 10, threaded in plunger *k* serves as an adjustable medium by which contact between plungers *y* and *k* is effected. By thus arranging a series of platens *b* around a central standard, with means to bring either into operative position, and by varying the curvature of the line of studs *e* and cutters *f* so as to be in proper form for various sizes of shoes, this machine can in a moment be adapted to punch the eyelet holes for any size of shoe desired, by simply rotating sleeve E into the proper place to render the desired punches operative.

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

1. In a machine for eyelet punching, a base formed with a central standard, a sleeve ar-



5 ranged to rotate on said standard, a series of platens arranged on said sleeve and provided with soft metal studs *e* arranged in proper curved lines; a series of strippers *h* arranged in proper relation to said studs; a series of hollow punches *f* secured in a carrying plate *g* and arranged to correspond to studs *e*; a series of platens *j* arranged on plungers *k* moving in sleeves *l* and provided with means of contact with plunger *y*: the pulley shaft C, crank *m*, link *n*, controlled by spring *q* and cord *w*, and a latch 4, by which the respective parts are interlocked, whereby the machine can be at once adjusted to shoes of varying curves and sizes: substantially as specified.

15 2. The combination of shaft C, provided

with pulley D, a crank *m* arranged upon an eccentric of said shaft, link *n* connected with crank *m* and plunger *y*, the spring *q* acting on link *n*, cord *w* secured to the outer end of link *n* to depress the same when actuated, the latch 4 of plunger *y*, adjustable stud 10, to regulate the contact of plungers *y* and *k*, the plate *j* of said plunger *k*, the punches *f*, the strippers *h* to clear the work from said punches and the platens *b*, all substantially as specified.

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Witnesses:

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