

(No Model.)

J. M. JONES.
PRINTING PRESS.

No. 309,304.

Patented Dec. 16, 1884.

Fig. 1.

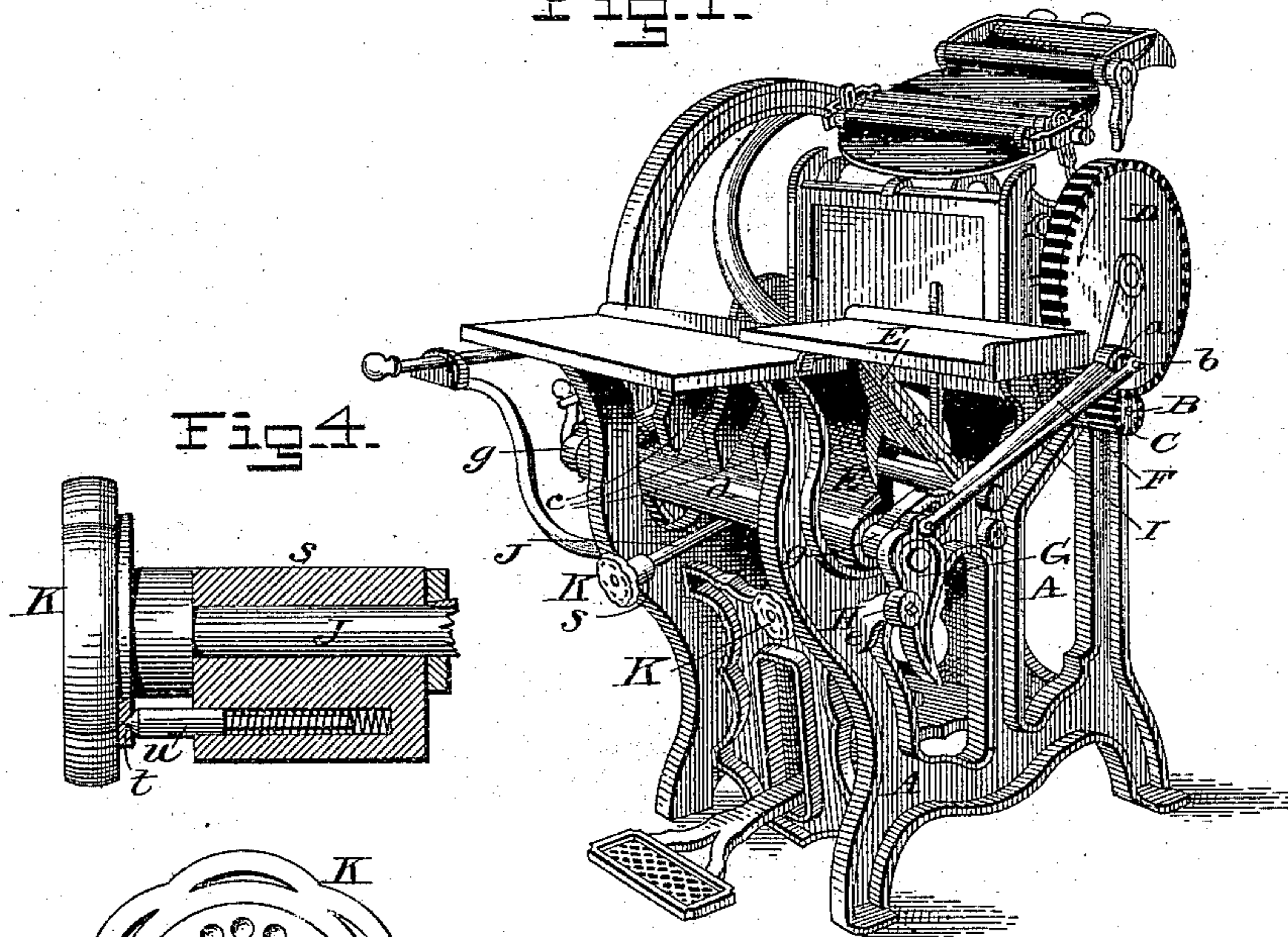


Fig. 4.

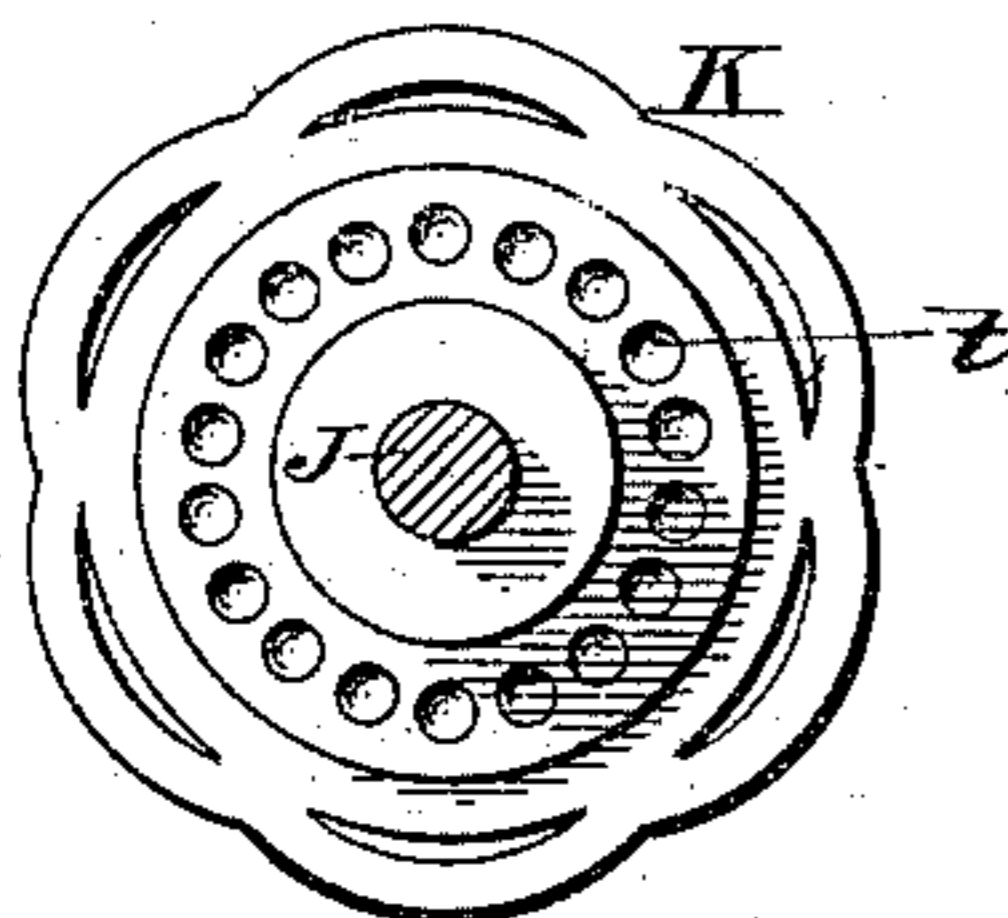
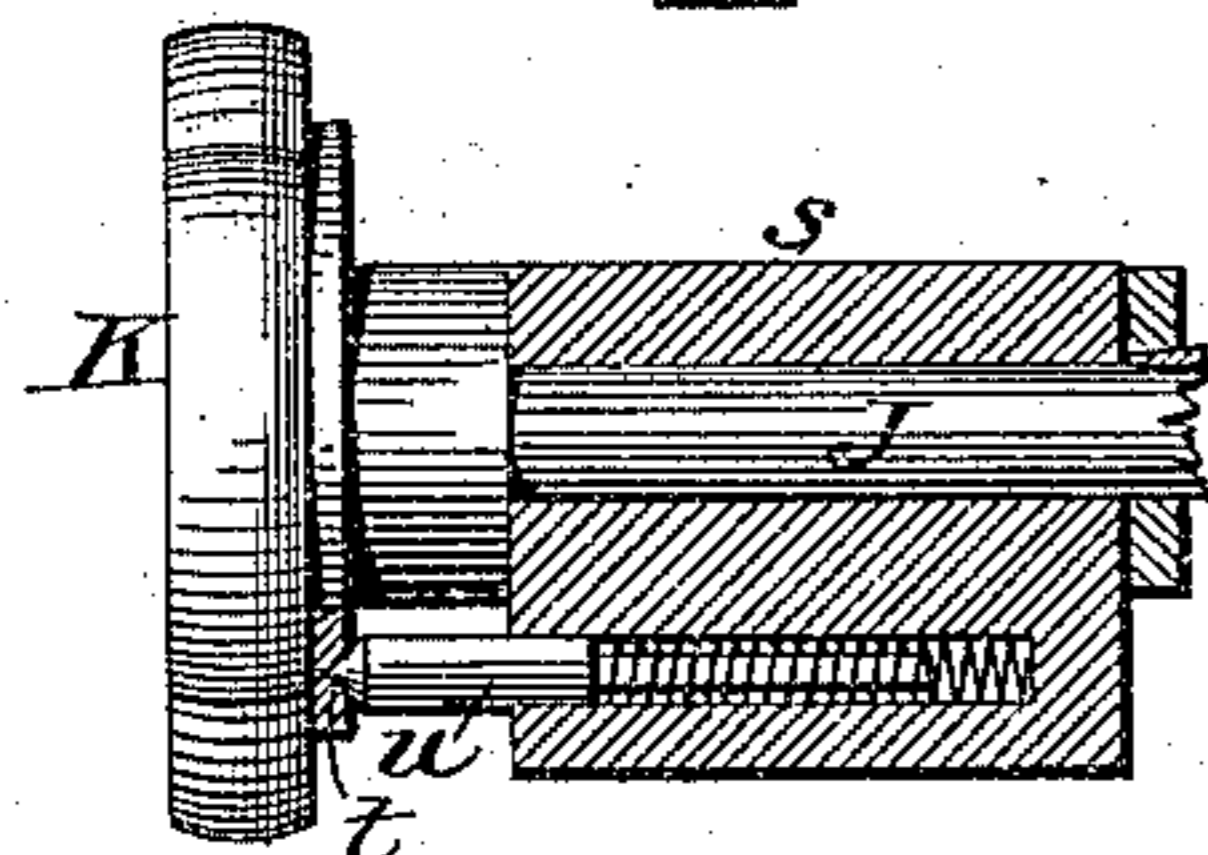


Fig. 2.

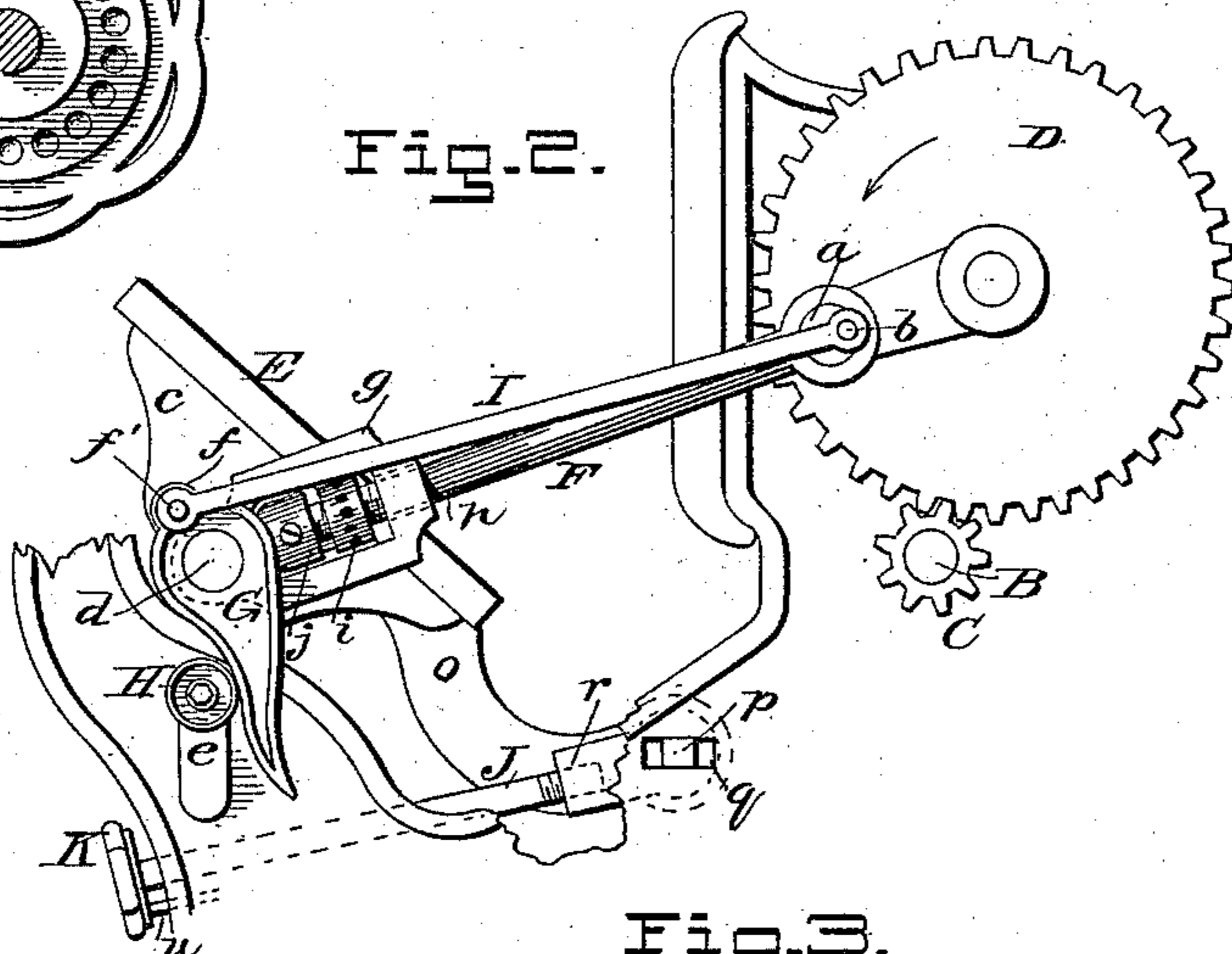
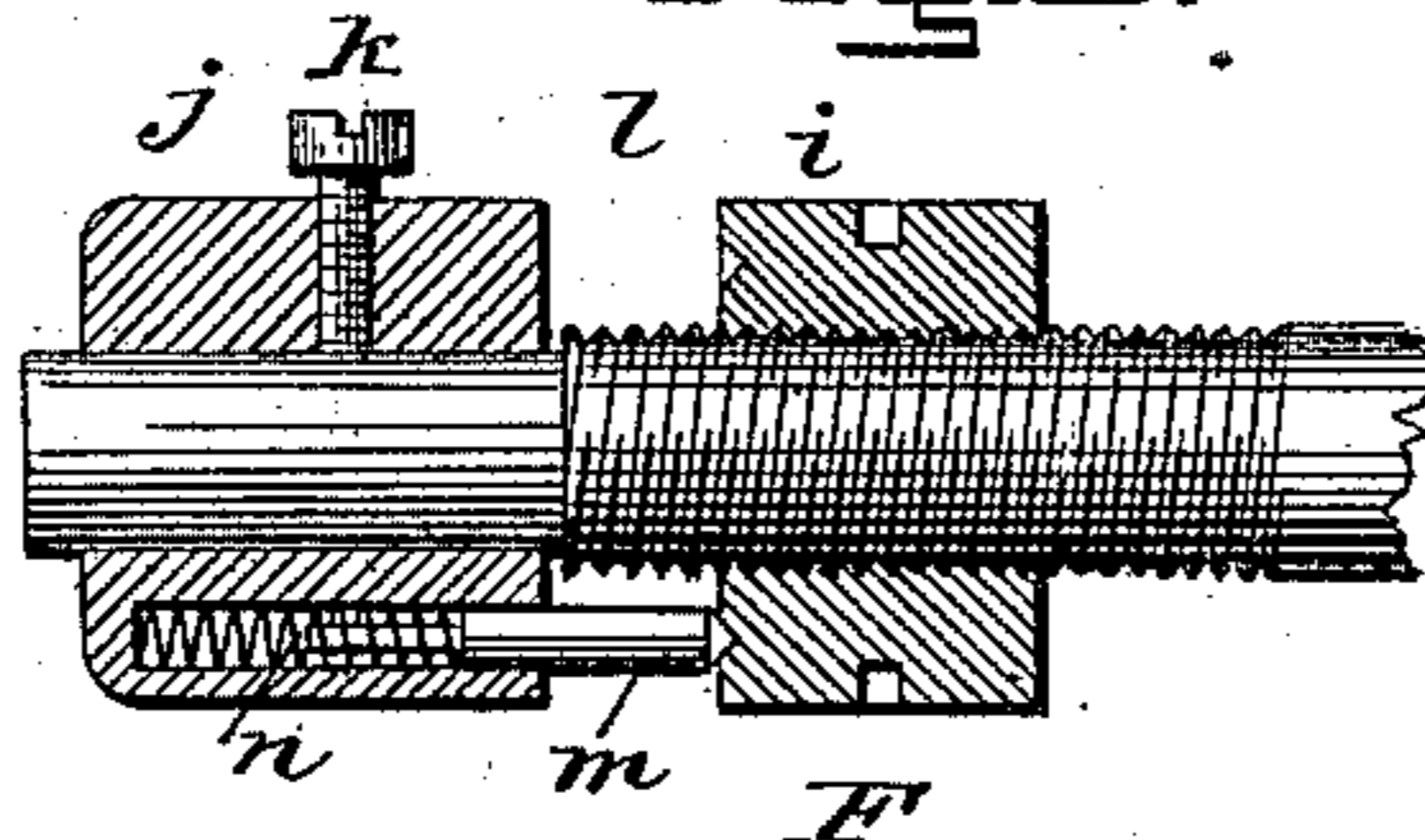


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN M. JONES, OF PALMYRA, NEW YORK.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 309,304, dated December 16, 1884.

Application filed August 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. JONES, of Palmyra, in the county of Wayne and State of New York, have invented certain Improvements in Printing-Presses, of which the following is a specification.

This invention relates to that class of printing-presses in which a platen moves to and from a fixed bed; and the improvements consist in novel features and details of construction, hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a perspective view of my improved press; Fig. 2, a side elevation or face view of the mechanism for producing the dwell and preventing jar; and Figs. 3 and 4, views illustrating details.

The purpose of my invention is primarily to give ample time for supplying or feeding the press with paper when working at high speed, and to prevent the jar due to suddenly stopping the movement of the platen in one direction and starting it in the reverse direction, and this I accomplish in the following manner:

A represents the main frame of a press of the pattern commonly known as a "job-press," designed to be operated by foot or steam power at will; and B represents the main shaft, to which motion is first imparted.

C represents a pinion secured upon shaft B, and meshing with a gear-wheel, D, which gives motion to the platen E, with which it is connected by a draw-bar or pitman, F, at each end or side of the platen, said draw-bars being connected to a crank-pin, *a*, as shown. The crank-pin *a* on the gear-wheel D is made of large diameter, and is tapped to receive a pin, *b*, which projects from its end, as shown in Figs. 1 and 2. The platen E is braced and stiffened by ribs *c*, as usual, and at the outer ends or backs of the ribs is a longitudinal rib, *d*. With the ends of this longitudinal rib *d* the draw-bars F are connected in a manner presently explained.

G represents a curved arm, journaled and free to rock on one end of the rib *d*, said arm being designed to come into contact with and ride upon a roller, H, carried by arm or bracket *e*, formed upon or secured to frame A. The upper end of the arm is formed with a projecting lug or ear, *f*, to which is attached,

by a pivot, *f'*, one end of a rod or pitman, I, the opposite end of which is fitted upon the pin *b*, projecting from crank-pin *a*, as before mentioned. The pivot or connection *f'* being above the pivot or journal *d*, the pin *b* and pivot *f'* will come into line with the center of wheel D before the pivot *d* and pin *b* thus come into line with said center, and consequently while the pitman F is approaching a position radial to the axis of the wheel D, the upper end of arm G is thrown backward or outward by its rod or pitman I and its lower end is correspondingly thrown inward, thus permitting the arm to move downward over the roller H and to bring the platen to rest gradually and without shock or jar. After the three points—the center of wheel D, pin *b*, and pivot *f'*—come into line, and the pin *b* crosses that line by reason of further rotation of the wheel, the arm G is rocked in the opposite direction and gradually raises the platen or starts it in an upward direction. The draw-bars or pitmen F are not rigid bars or beams from end to end, as usual, but are telescopic, being made in two parts, one adapted to move a short distance longitudinally independently of the other. To permit such independent movement the end block or head, *g*, of the pitman is made separate from the main bar or rod *h*, and, besides being journaled upon the end of rib *d*, is formed with a longitudinal opening, through which said rod slides, and with a transverse opening to receive a nut, *i*, and a cap or collar, *j*, both of which are secured upon the end of the pitman within the block. The rod is threaded to receive the nut *i*, and from the threaded portion to the end is slightly reduced and left smooth, to permit the cap or collar *j* to slide back and forth thereon, a set-screw, *k*, serving to hold it at any desired point. The nut *i* is formed with a series of shallow conical indentations or seats, *l*, to receive the pointed end of a sliding pin, *m*, which is pressed outward by a spring, *n*, from a recess in the cap or collar *j*, as plainly shown in Fig. 3, said pin serving to retain the nut at any adjustment. The purpose of the nut *i* is to permit the pressure of the platen to be regulated as required. With the parts thus arranged and the gear-wheel D turned in the direction indicated, the platen falls back away from the bed as the crank-pin

a descends, the fall of the platen being in exact proportion to the rate of rotation of said gear until the curved arm G comes into contact with roller H, whereupon the fall is gradually arrested, or caused either to cease entirely or to take place very slowly and almost imperceptibly, the rod *h* of the draw-bar or pitman F at this time sliding through the opening in the end of head-block *g*, and the second rod or pitman, I, causing the arm G to rock upon its pivot or journal, and consequently to slide upon the roller H to take up the movement of wheel D. In thus sliding through head or block *g*, the rod *h* of draw-bar F carries the nut *i* away from its seat or bearing at the end of the opening in said block *g*; and to prevent the nut from coming suddenly against said seat as the movement of the draw-bar is reversed, and thereby causing a jar or concussion, the arm G is extended downward such distance and is so curved that the pitman I, drawing upon the arm G and causing it to ride upon the roller H, starts upward the platen E, and with it the block *g*, and causes the latter to move gradually faster, until just at the moment that the nut *i* comes to its seat the block *g* and bar *h* of the pitman are moving at the same rate, and consequently no jar or stroke is perceptible. From this point until the impression has been given all the strain is sustained by the draw-rods or pitmen F, the rods or pitmen I at such time merely acting to bring the arms G into proper position to ride upon the roller H to cause the required delay or dwell at the next descent of the platen. By turning up nuts *i* the pressure of the platen may be increased, or by turning them backward it may be lessened. As the variation is considerable, and as adjustment of the nuts is also necessary to secure a proper relative movement of the arm G and pitmen F I, the nuts *i* are liable to be so far moved from the caps or collars *j* that the spring locking-pins *m* will not reach the nuts, or that the springs will not possess sufficient force to hold the nuts against turning; hence the necessity for making the cap or collar *j* adjustable on the rod *h* of pitman F. The platen is carried by arms *o*, as usual, mounted and swinging or turning upon a shaft, *p*, which has its ends mounted in slots *q* in the main frame A, so that either or both ends of the shaft may be moved inward or outward, as required, to equalize the pressure of the platen at top and bottom. For the purpose of effecting such adjustment, each end of the shaft *p* is furnished with a threaded block or nut, *r*, into each of which is screwed the threaded end of a rod or spindle, J, the opposite end of which is furnished with a hand-wheel, K, and swiveled at the inner side of said hand-wheel in a lug or bracket, *s*, on the frame A. Thus by turning either hand-wheel backward or forward the end of the shaft *p* at that side of the machine may be moved inward or outward along the slot *q*, and a perfect adjustment of the platen secured

to render it parallel with the form. Each wheel K is furnished with a circular row of conical depressions, *t*, in the inner end or face of its hub, to receive the pointed end of a spring-pressed pin, *u*, seated in the bracket *s*, which acts in the same manner as the spring-pins *m*, and serves to prevent the accidental turning of the rod J, and consequent variation in adjustment of the platen.

In all features not specifically pointed out herein the press may be of ordinary construction, the usual treadle and band-wheel being indicated in the drawings.

The curved arm may in some cases be journaled upon the frame A and the roller applied to the platen, in which case pin *b* would be set much closer to the center of gear-wheel D. The arrangement shown is, however, preferred.

A crank-arm may obviously be used instead of gear-wheel D, motion being given to said arm in any usual and convenient manner; hence in speaking of wheel D it is to be understood as including a simple crank-arm. The roller H may also be omitted and a simple stud employed.

Having thus described my invention, what I claim is—

1. In combination with the bed and platen of a printing-press, a crank-wheel provided with two crank-pins, a telescopic pitman connecting one of said crank-pins with the platen, a curved arm journaled upon the platen and connected with the second crank-pin by a rod or pitman, and a bearing for said arm formed upon or secured to the frame of the press, all substantially as and for the purpose explained.

2. In a printing-press, the combination of a bed, a platen, a crank, and a telescopic pitman connecting the platen and the crank, whereby the crank and pitman are adapted to continue in motion while the platen remains at rest.

3. In combination with the bed and platen of a printing-press, a crank for imparting motion to the platen, and a telescopic pitman connecting the crank and platen and provided with an adjustable stop to limit the telescopic movement or action of the pitman.

4. In a printing-press, the combination of a bed, a platen, a crank to operate said platen, and a pitman, F, connecting the crank and platen, and consisting of the head *g* and sliding rod *h*, threaded and furnished with nut *i*, all substantially as shown and explained.

5. In combination with head or block *g* and rod *h* of pitman F, nut *i*, screwed upon said rod within the block and furnished with cavities *l*, and collar *j*, provided with spring-pin *m*, to enter said cavities, substantially as set forth.

6. In a printing-press, the combination of a main frame, a bed, a platen, E, crank D, provided with crank-pins *a b*, telescopic pitman F, connecting the crank-pin *a* and platen E, curved arm G, journaled upon the platen, and connected with crank-pin *b* by rod or pit-

man I, and roller H, journaled upon the main frame, all constructed and arranged to operate substantially as explained.

5 7. In combination with a main frame provided with slots *q*, shaft *p*, provided with nuts or blocks *r*, and having its ends seated in the slots, platen E, mounted upon said shaft, and rods J, swiveled in the main frame and hav-

ing their threaded ends screwed into the nuts or blocks *r*, substantially as and for the purpose set forth.

JOHN M. JONES.

Witnesses:

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