

No. 735,830.

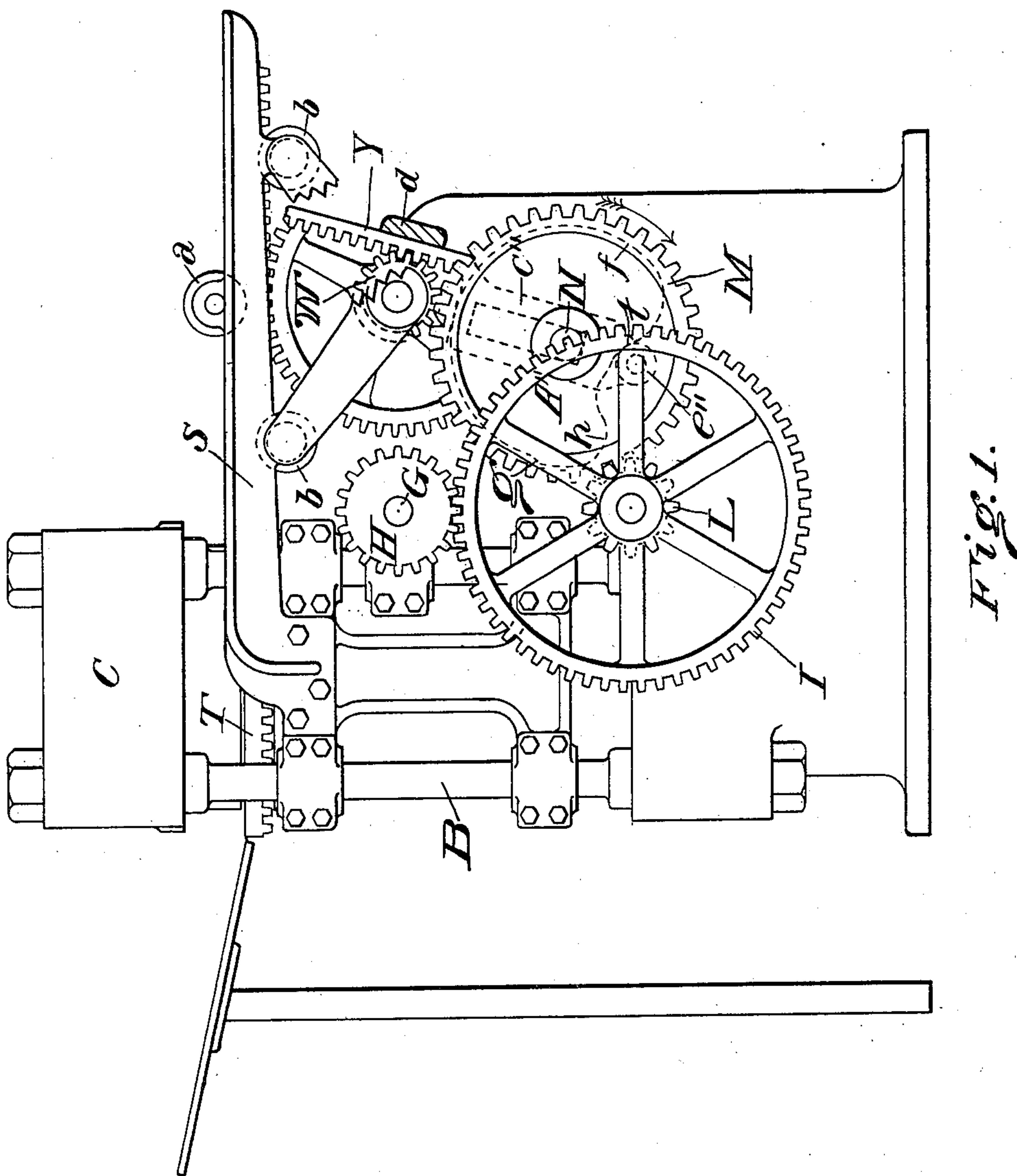
PATENTED AUG. 11, 1903.

C. SEYBOLD.  
EMBOSSING PRESS.

APPLICATION FILED MAY 26, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses  
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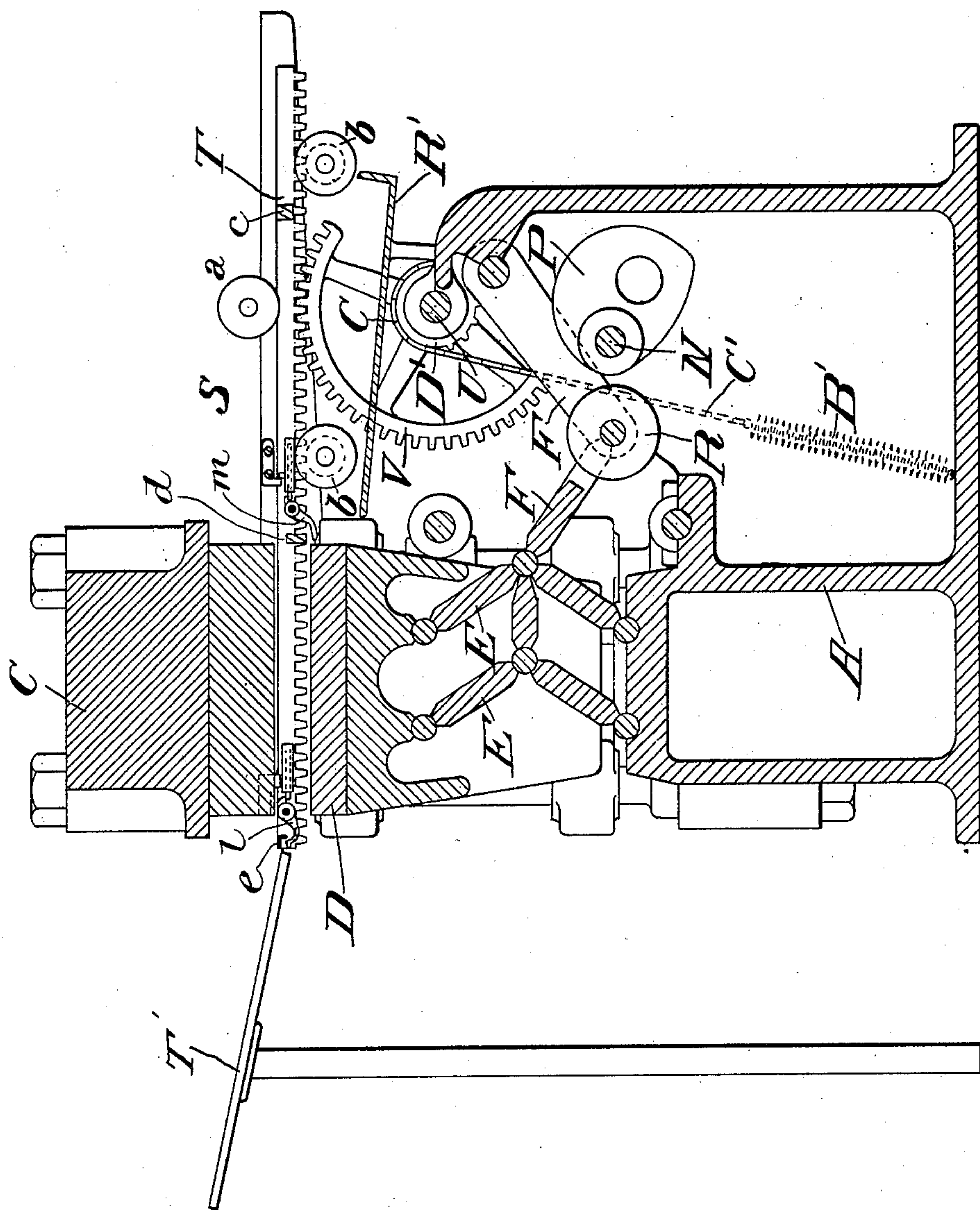


Fig. 2.

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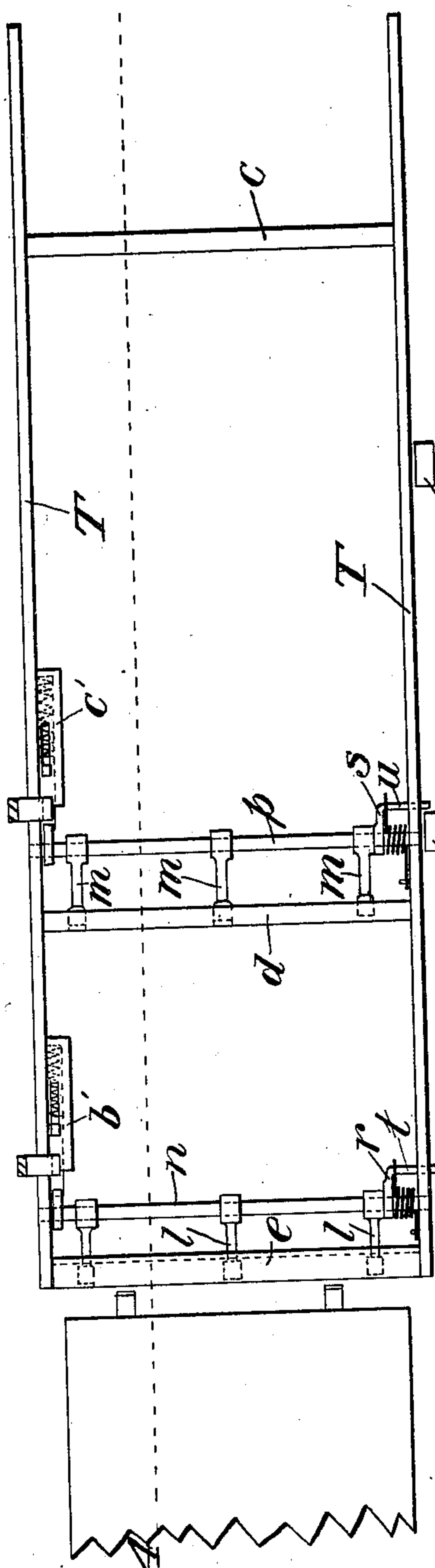


Fig. 3.

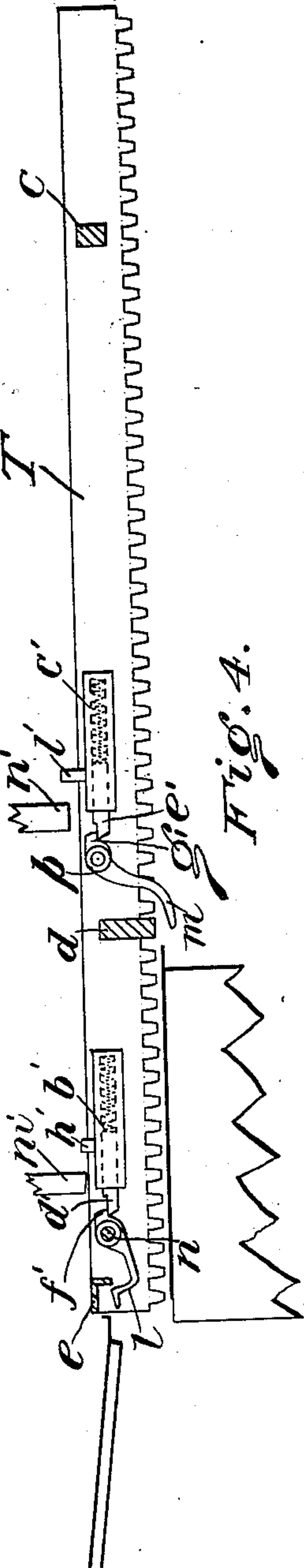


Fig. 4.

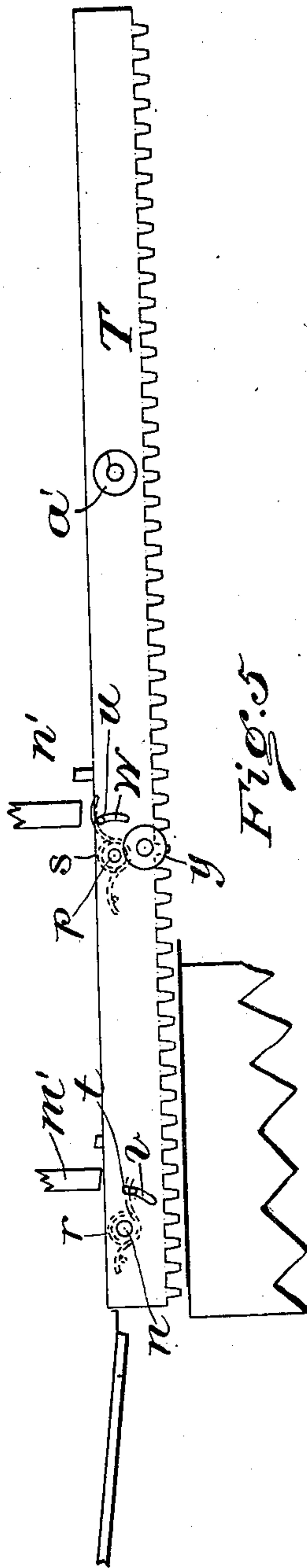


Fig. 5.

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# UNITED STATES PATENT OFFICE.

CHARLES SEYBOLD, OF DAYTON, OHIO.

## EMBOSSING-PRESS.

SPECIFICATION forming part of Letters Patent No. 735,830, dated August 11, 1903.

Application filed May 26, 1902; Serial No. 109,116. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES SEYBOLD, a citizen of the United States, residing at Dayton, county of Montgomery, and State of Ohio, have invented certain new and useful Improvements in Embossing-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My improvements relate to a device for automatically feeding sheets of paper to be embossed to the dies and simultaneously removing the sheet previously embossed, so that two sheets are fed simultaneously, the one into and the other out of the machine, the embossed sheet being merely carried out and dropped, while the fresh sheet is carried in, held in exact position while being embossed, then pulled off the dies, when it is picked up and carried out of the machine as a fresh sheet is delivered thereto.

The essential features of my improvements consist of a traveling carriage with a double set of nippers, the one set of nippers grasping a new sheet as the other set grasp the sheet already embossed, the traveling carriage and nippers being automatically actuated to travel in with one sheet and out with the other, then to hold the sheet to be embossed in exact position while acted upon, and to pull it from the dies after the embossing.

I have illustrated my improvements as applied to a well-known form of embossing-press in which the platen is raised by a double set of toggle-levers; but it will of course be understood that my feeding devices, with their actuating mechanism, can be applied to any of the well-known constructions of embossing-presses.

In the drawings, Figure 1 is a side elevation of the embossing-press with my improvements attached. Fig. 2 is a central vertical section of same. Fig. 3 is a top plan view of the traveling carriage. Fig. 4 is a sectional side elevation taken on the lines 4-4 of Fig. 3. Fig. 5 is a side elevation of the traveling carriage.

A is a substantial and massive base for carrying the working parts of the press, upon which are mounted the four uprights B, which

carry the solid and massive heated plate C of the press.

D is the platen, which is raised and lowered by the double set of toggle-levers E E and F F.

G is the driving-shaft of the press, carrying the pinion H, which meshes with the intermediate gear I, carrying the pinion L. This pinion meshes with the gear M on the shaft N, which shaft carries the cam P, and as the shaft M is rotated this cam contacts with the roller R, mounted on the knuckle of the toggle-levers F F, and in this way the platen D is raised for the embossing by the straightening out of the double sets of toggles.

This brief description will probably be all that is necessary to make clear the operation of the press proper.

For the purpose of automatically feeding the sheets to be embossed to the press, holding the sheet in position, and then removing it from the press at the same time that a new sheet is fed thereto I provide as follows: Securely bolted to the side frame of the machine and extending back rearwardly on each side are the brackets or arms S. Mounted on these brackets, one above and two below, are the flanged guide and supporting rollers *a b b*, the upper rollers *a* having a spring mounted between the journal-bearing and the spindle of the roll, so that they are spring-pressed downward. Guided and supported by these rollers are rack-bars T T, which rack-bars, with the cross-bars *c d e*, form a truck or carriage arranged to travel to and from the embossing-press, as hereinafter described. The lower set of guide-rollers *b b* are provided with teeth or pins to mesh with the teeth of the rack-bars to guide them more effectually, while the flanges of the three rollers *a b b* on each side, embracing the top and bottom of the rack-bars, keep the traveling carriage in perfect alinement. Mounted on the shaft U, journaled in the frame of the machine, are the sector-gears V V, which sectors mesh with the rack-bars T T, and with the oscillation of the sectors the traveling carriage is given its reciprocating motion. The shaft U also carries the pinion W, which meshes with rack-bar Y, provided with the yoke *c''*, which embraces a square block on the shaft M, and is also provided with the



guide-block *d* in order to steady the movement of this rack-bar. The lower end of the yoke *c''* of the rack-bar Y carries the roller *e''*, which engages the cam A', mounted on the inner face of the gear M. As this cam A' is rotated in the direction of the arrow in the position shown in Fig. 1 the movement of the cam will draw down the rack-bar Y, rotate the sectors V, and carry the traveling carriage out from under the dies of the embossing-press. From the point *f* to the point *g* on the cam A' the operating-surface of the cam is a true circle, so that while the cam is moving between these points the traveling carriage will remain stationary without the press. The surface of the actuating-cam is raised slightly between *g* and *h*, so that when the roller *e''* reaches the point *g* on the cam-surface the rack-bar Y will be drawn down a slight distance farther to shift the carriage slightly outward, and when the roller *e* reaches the point *h* on the cam-surface the traveling carriage will be in a position to be drawn back under the dies of the embossing-press. This back movement is accomplished by the coiled springs B', which are secured at one end to the base of the machine and are attached at the other end to the chains C', secured to the sprockets D', mounted on the shaft U. As the shaft U was rotated to carry the traveling carriage from without the press this chain C' has wound up on the sprocket D' and extended the coiled spring B', so that as soon as the roller *e* reaches the inclined surface of the cam the coiled springs B' re-rotate the shaft U in the opposite direction to carry the rack-bars T T back to their original position.

It will be noticed that the mechanism for actuating the traveling carriage is arranged so that the positive movement of the connecting-gears carries the carriage out from under the press, while it is returned by the action of the coiled springs, so that if the coiled springs should break or fail to work no damage could result, whereas if the movements were reversed and the coiled springs were relied upon to draw the carriage out from under the press any failure of these springs to work properly would result in a destruction of the mechanism. Another advantage of using the springs to return the carriage to the press is that these springs take up the lost motion and wear of the parts, so that by maintaining the springs under proper tension we have proper compensation for all wear.

The bars *e d* of the traveling carriage form the upper nipper-bars for the nippers *l l m m*. These nippers *l m* are mounted on the oscillating rods *n p*, which are journaled in the rack-bars T T, and the nippers are normally held closed by the coiled springs *r s*, mounted on the oscillating rods *n p*, with one end of these coiled springs bearing against a lug on the rack-bar and the other end against pins *t u*, secured on the oscillating rods *n p*, the ends of which

pins pass through slots *v w* in the rack-bar. The ends of these pins come in contact with their respective rollers *y a'*, which are mounted in a fixed position on the bracket-arms S, and raise up the pins to oscillate the rods *n p* and open up the nippers *l m*. As soon as the nippers are opened they are held open by the locking devices *b' c'*, secured to the inner face of the other rack-bar T. These locking devices consist of the beveled spring-pressed latches *d' e'*, which engage under the knuckles *f' g'*, secured to the oscillating rods *n p* at the proper point. These latches *d' e'* carry the pins *h' l'*, which at the proper point engage with lugs *m' n'*, secured to the frame, and the latches are released to allow the nippers to close under the action of their respective coiled springs *r s*.

The operation of the device is as follows: With the traveling carriage in the position shown in Fig. 1 and both sets of nippers *l m* open the carriage has not reached the completion of its instroke, the pins *h' l'* being just in contact with the lugs *m' m'*. The completion of the instroke under the action of the coiled springs B' will release the latches and allow the nippers to close against their respective nipper-bars, while the closing position of the nippers is such as to grasp for the set *l* a new sheet of paper fed to them from the table T', and the other set *m* will grasp the sheet that has just been embossed and which lies on the platen. In this position the roller *e* on the actuating-rack Y engages the cam A' at the point *t'*, and the movement of the cam will oscillate the shaft U to carry the traveling carriage with the two sets of nippers grasping their respective sheets of paper, the one sheet into the press and the embossed sheet out therefrom. As soon as the roller *e* reaches the point *f* on the cam A' during a half-rotation of the cam the traveling carriage will be held in fixed position, and this position is the exact position required for the embossing-dies. The roller *a'* is mounted in such position that just before the traveling carriage reaches the position for the proper embossing of the sheet held by the nippers *l* the pin *u* on the other set of nippers will contact with this roller to open the set of nippers *m* and allow the embossing-sheet to fall on the table R'. The roller *y*, however, is so located that the pin *t* has not quite reached this roller, while the roller *e* of the actuating-rack is running on the true circle of the cam. When the sheet held by the nippers *l* has been embossed, the roller *e* has reached the point *g* of the cam, and as it rides from the point *g* to *h* the traveling carriage is thrown outwardly a slight distance sufficient to pull the embossing-sheet from the dies, and then these nippers open by contact of the pin *t* with the roller *y* and the embossing-sheet is dropped, with its edge extended slightly beyond the platen, so that at the proper time it can be grasped by the other set of nippers *m* to be drawn from



the machine. Immediately after this slight outward pull of the nippers the roller *e* reaches the inclined surface of the cam and the coiled springs carry back both sets of nippers to their original position ready to grasp their respective sheets.

It will be noticed that the nippers *l*, with the fixed nipper-bar *e*, are located considerably higher than the nippers *m*, with their nipper-bar *d*, so that there is no interference of the two sets of nippers, and, moreover, the nipper-bar *e* is located at the proper position to hold the sheet to be embossed in a plane very close to the embossing plane of the press.

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

1. In an embossing-press, a movable frame mounted opposite the feed side of the press, two sets of nippers in fixed position thereon, the one in advance of the other, the one set located to grasp a fresh sheet, while the other is located to grasp the sheet just embossed, and means for actuating the frame to feed one sheet to the press with the delivery of the other therefrom.

2. In an embossing-press, a movable frame mounted opposite the feed side of the press, two sets of nippers in fixed position thereon, the one in advance of the other, the one set located to grasp a fresh sheet, while the other is located to grasp the sheet just embossed, and means for actuating the frame intermittently to feed two sheets of paper, one into, the other out of the press, to hold the fresh sheet while being embossed and to pull it from the dies, substantially as described.

3. In an embossing-press, a movable frame mounted opposite the feed side of the press, two sets of nippers in fixed position thereon, the one in advance of the other, the one set located to grasp a fresh sheet, while the other is located to grasp the sheet just embossed, mechanism for actuating the frame intermittently to feed two sheets of paper, one into, the other out of the press, to hold the fresh sheet while being embossed, and to pull it from the dies, means for opening the nippers, and a spring to return the frame to its original position, substantially as described.

4. In an embossing-press, a reciprocating frame mounted opposite the feed side of the press, with a set of nippers in fixed position thereon, a cam, with connecting mechanism for actuating said frame in the manner set forth, whereby an intermittent stroke is im-

parted to said frame, to feed a sheet of paper to the press, to hold it while being embossed and to pull it from the dies, substantially as described.

5. In an embossing-press, a reciprocating frame mounted opposite the feed side of the press, with a set of nippers in fixed position thereon, a cam with connecting mechanism for actuating said frame in the manner set forth, whereby an intermittent stroke is imparted to said frame to feed a sheet of paper to the press, to hold it while being embossed and to pull it from the dies, means for opening the nippers, and a spring to return the frame to its original position, substantially as described.

6. In an embossing-press, a traveling carriage, with nippers mounted thereon, racks on said carriage, a driving-gear with cam, a rack-bar, with roller contacting with said cam, pinion engaging said rack-bar, shaft upon which the pinion is mounted, said shaft carrying sectors to engage the racks of said traveling carriage, and springs acting on said carriage to return same to its original position, substantially as described.

7. In an embossing-press, a traveling carriage, with nippers mounted thereon, racks on said carriage, a driving-gear with cam, a rack-bar, with roller contacting with said cam, pinion engaging said rack-bar, shaft upon which the pinion is mounted, said shaft carrying sectors to engage the racks of said traveling carriage, disks on said shaft, with chain belts to wind thereon, and coiled springs connecting said chains with the frame of the machine, whereby said traveling carriage is reciprocated as desired, substantially as described.

8. In an embossing-press, a traveling carriage, with mechanism for actuating same intermittently, two fixed bars, the one in advance of the other, and two oscillating rods, the latter carrying fingers to cooperate with said fixed bars to form nippers, springs to hold said nippers closed, and latches to hold them open, with lugs on the press-frame to contact with said oscillating rods, and said latches, whereby the nippers may be closed and opened at the position desired, substantially as described.

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