

(No Model.)

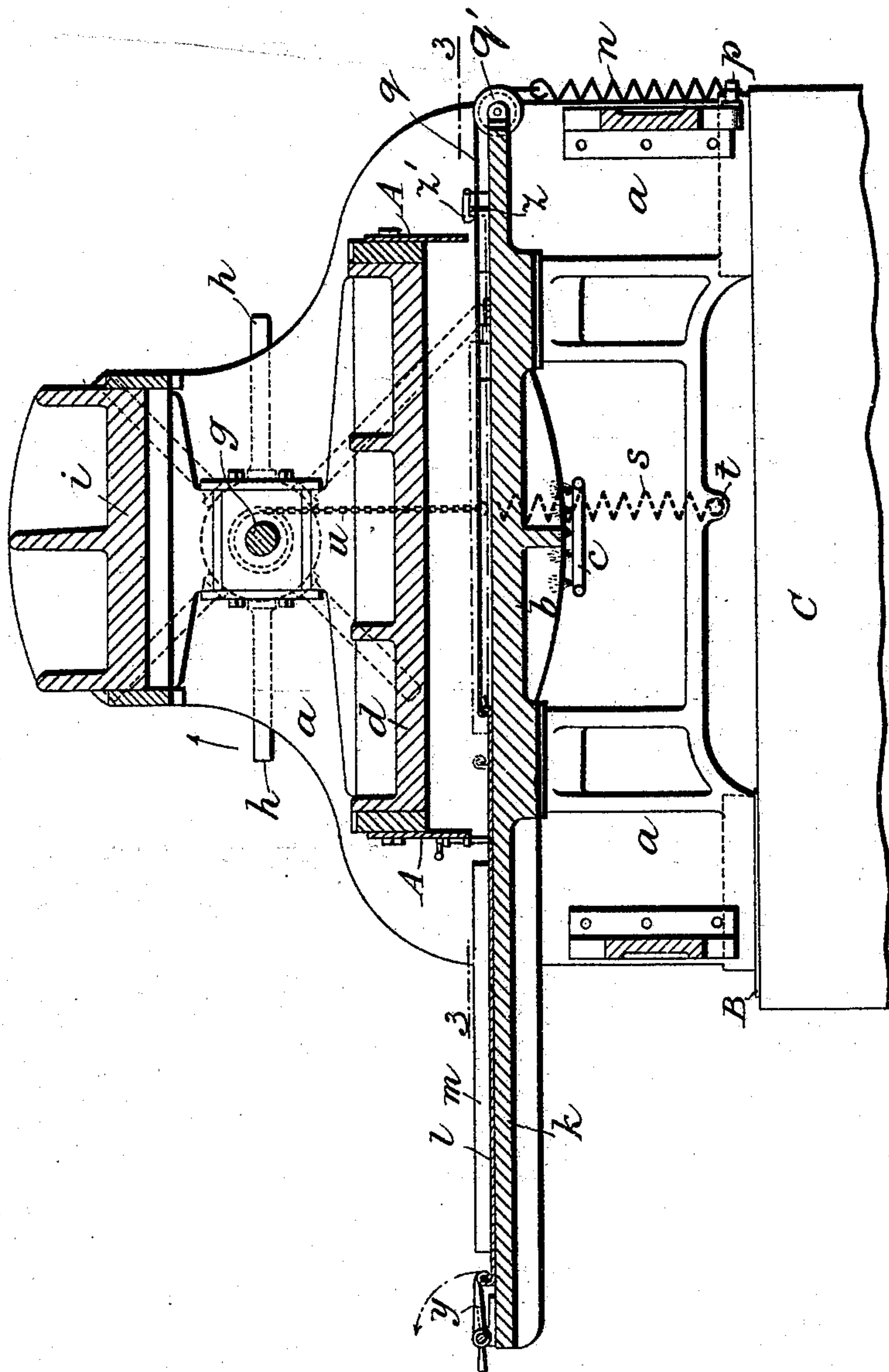
4 Sheets—Sheet 1.

G. EASTWOOD.  
PLATEN PRESS.

No. 544,887.

Patented Aug. 20, 1895.

Fig. 1.



WITNESSES:

Fred White  
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George Eastwood,  
By his Attorneys  
Arthur G. Draper & Co.

(No Model.)

4 Sheets—Sheet 2.

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Fig. 2.

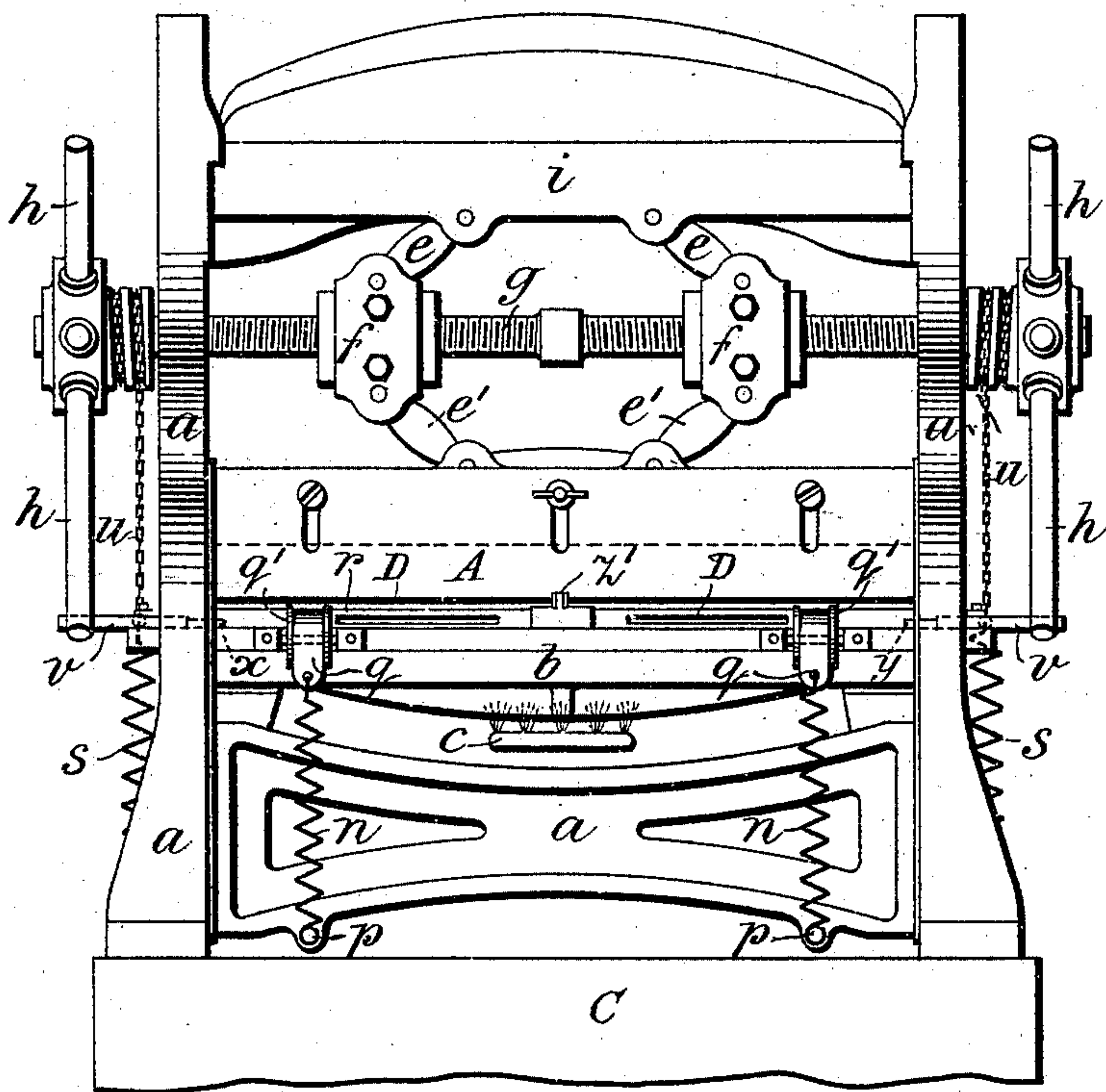
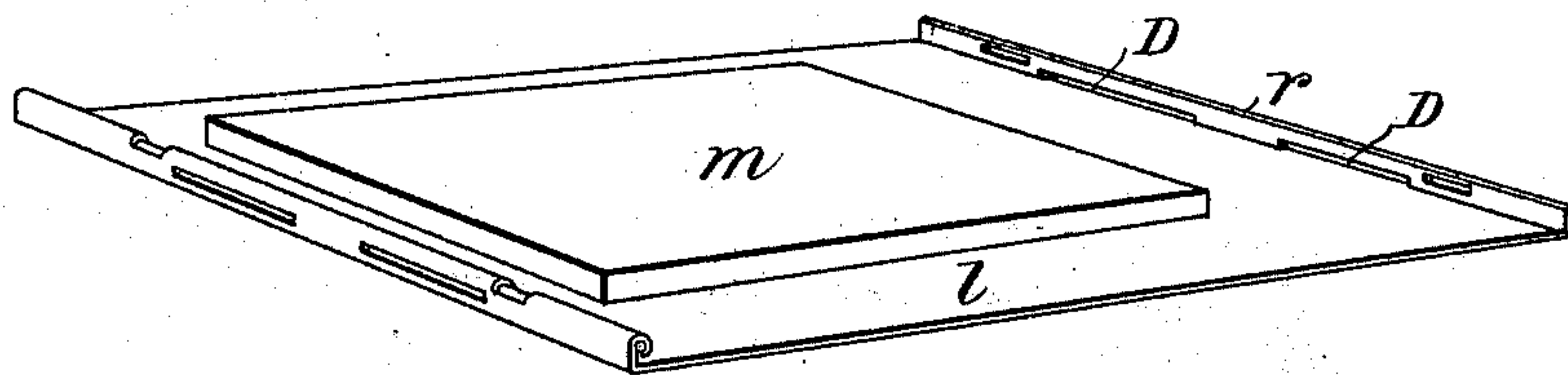


Fig. 4.



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(No Model.)

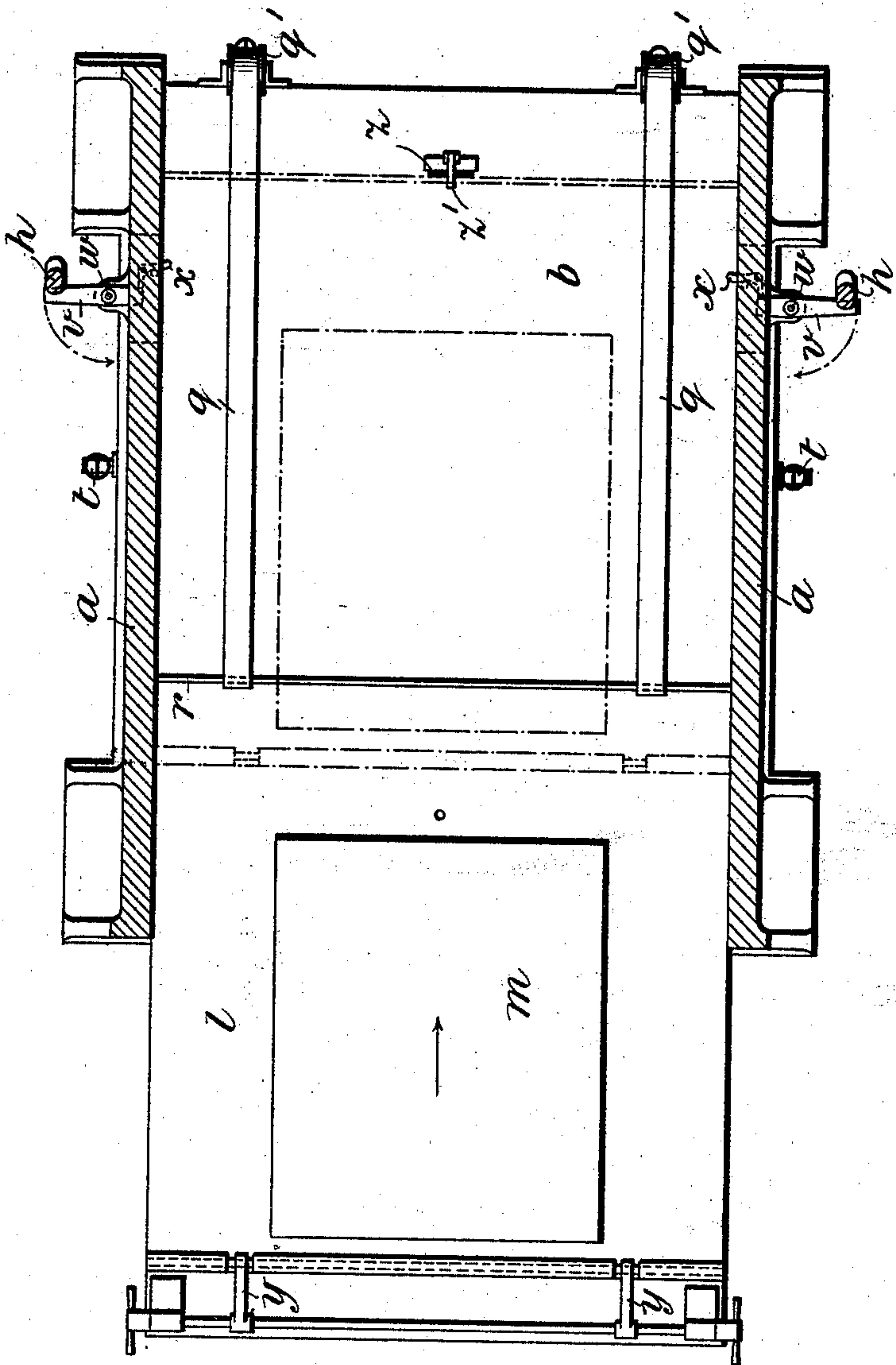
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Fig. 3.



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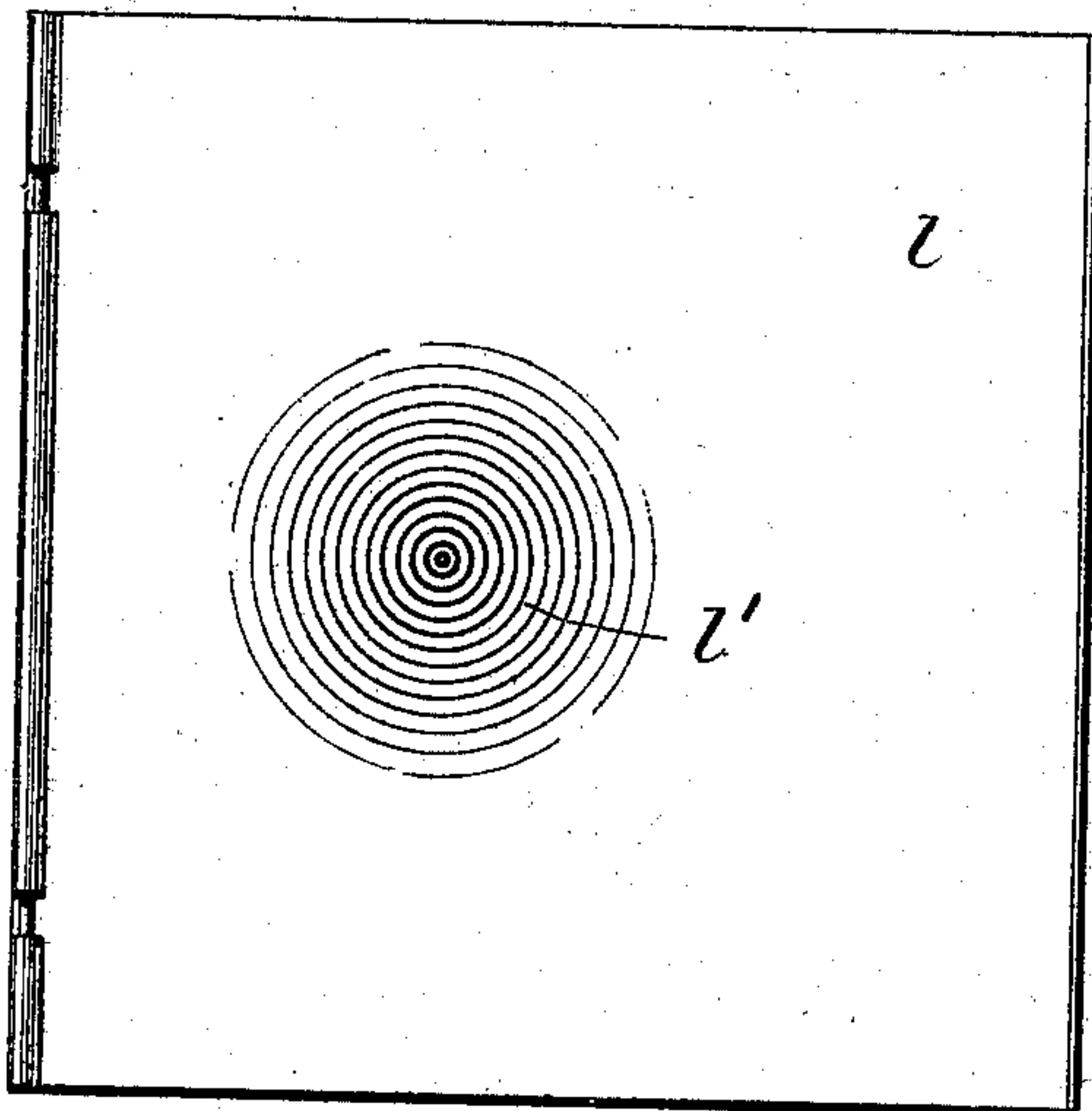
G. EASTWOOD.  
PLATEN PRESS.

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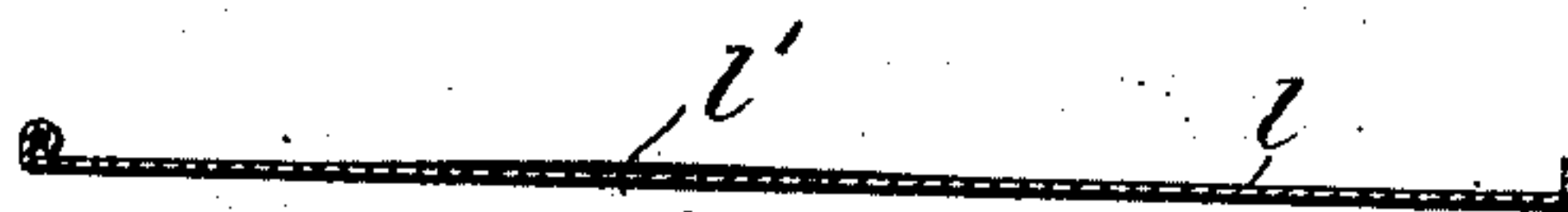
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*Fig. 5.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

GEORGE EASTWOOD, OF LONDON, ENGLAND.

## PLATEN PRESS.

SPECIFICATION forming part of Letters Patent No. 544,887, dated August 20, 1895.

Application filed March 20, 1895. Serial No. 542,438. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE EASTWOOD, of 36 and 37 Cow Cross Street, London, England, have invented certain new and useful Improvements in and Relating to Platen Presses, of which the following is a specification.

The invention has reference to platen presses and relates more particularly to platen presses employed for pressing a flog into a type-form, so as to produce a mold or matrix for stereotyping. The improvements are, however, in whole or in part applicable to platen presses used for other purposes, as, for example, platen printing-presses.

In the production of stereotype-plates for newspaper-work saving of time is of great importance, and one object of this invention is to effect a substantial saving in the time occupied in running the type-form onto the bed of the press and in then bringing down the platen so as to impress the flog and thereby produce the mold or matrix, the flog being either laid upon the form or carried by the platen.

Another object of the invention is to provide for the ready flowing away of the water from the press when a wet form is used, and thereby to save the delay which would be necessary to allow the water to evaporate on the heated type-bed.

It is known that in pressing a material between two parallel flat surfaces, whether such material be a flog in the operation of being molded into a matrix, or a sheet of paper in the process of being printed, or a substance in the operation of being compressed—such, for example, as cotton-seed—the pressure produces a slightly less effect at and near the center than at and near the exterior of the material under operation. It is a further object of this invention to overcome this defect.

The invention consists of the combination, in a platen press for producing molds or matrices for stereotyping, of a plate or tray to hold the type-form and which slides from an outside position to a position below the platen and vice versa, and of springs connected with said plate and with the press-frame or other fixed part, the said springs, when the plate is in the outside position, being in tension, whereby when the plate is not retained in the outside position the springs move it, together

with the form, into position below the platen; also, of the combination, with the platen of a platen press, of springs which are put in tension by the raising of the platen, and of one or more catches to retain the platen in its raised position and the springs in tension, whereby when the said catches are released the said springs cause the platen to descend rapidly; also, of a form-carrying sliding plate for a platen press for producing molds for stereotyping, the said plate having a flange at the back for the attachment thereto of springs for giving sliding movement to the plate, as already described, with an opening or openings in the flange to allow water to run freely from the plate, the press-bed having a slight downward inclination from front to back; also, of a plate or sheet for a platen press for placing against one face of the material or substance operated upon by the press, the said plate or sheet having a slight convexity on one face, the convexity being greatest in the center of the plate and becoming gradually less until it reaches a vanishing point toward the edges of the plate.

In the accompanying drawings, Figure 1 is a longitudinal section of a platen press constructed according to this invention and adapted for the production of molds or matrices for stereotyping. Fig. 2 is a back elevation of the press. Fig. 3 is a horizontal section of the press on the line 3 3 of Fig. 1. Fig. 4 is a perspective view of the plate or tray with a type-form thereon. Fig. 5 is a plan, and Fig. 6 a central longitudinal section, of the plate, showing the slight convexity on one face, this convexity not being shown in the other figures.

Referring first to Figs 1 to 4, *a a* represent the frame of the press.

*b* is the bed upon which the plate and type-form rest during the pressing operation.

*c* is a range of gas-burners for heating the bed *b*.

*d* is the platen, which can be raised and lowered as required. It is shown as provided with toggle-levers *e e e' e'*, the ends of which are rounded, one end working in sockets in bosses *f f*, which are screw-threaded internally and engage with a right and left handed screw *g*, fitted with hand-lever arms *h h* for turning it. The upper ends of the upper tog-



gle-levers *e e* work in sockets in the press-head *i* and the lower ends of the lower levers *e' e'* work in sockets on the platen *d*.

*k* is a feed-table.

5 *l* is the plate or tray, hereinbefore described, upon which the type-form is placed.

*m* represents the form.

The plate and form are seen in Fig. 1 in their outside position—that is to say, upon the table *k*. The same figure shows, in dotted lines, their position when below the platen.

10 *n n* are strong springs, one end of which is attached to the press-frame at *p p* and the other end to the bands *q q*, by which they are connected to a flange *r* at the back of the plate *l*.

*q' q'* are rollers over which the bands pass.

20 *s s* are other strong springs, one end of which is attached to the press-frame at *t* and the other end to the lower ends of chains *u u*, whose upper ends are attached to the shaft of the screw *g*. The drawings show the platen *d* in the raised position, the raising being effected by turning the shaft *g* by means of the hand-levers *h h*. The platen is held in the raised position by means of the stops *v v*, which come against one of the lever-arms *h h* at each end of the shaft *g*. These stops are centered at *w w* and are themselves held by 30 L-pieces *x*, one arm of each of which projects beyond the longitudinal line of the tray *l*.

The operation is as follows: The platen *d* is raised by means of the lever-arms *h h*, and while this is being effected the chains *u u* 35 wind round the shaft *g* and put the springs *s s* in tension. The stops *v v* (of which there may be two, as shown, or only one) then hold the platen in the raised position. The plate *l* is drawn out from below the platen onto the feed-table *k*, (into the position seen in full lines in Fig. 1,) the springs *n n*, attached to the plate, being thus put into tension, and the plate is then held on the feed-table by one or 45 more catches *y y*, which engage with a flange on the front of the plate. The type-form *m*, from which the matrix is to be obtained, is then secured on the plate, or the form may be made up on the plate, in which case the springs *n n* should be temporarily disconnected therefrom. When the plate, with the 50 form, is ready and a flong, with or without a blanket, has been placed thereon, the catches *y y* can be released. The plate, with the form, is immediately drawn toward the platen by the springs *n n*, which give the form sufficient impulse to cause it to slide on the inclined and well-oiled bed *b* into position under the platen, (the position seen in dotted lines in Fig. 1.) It strikes against a buffer 60 *z* and is caught and steadied by the catch *z'*. The plate in running backward under the platen strikes the pieces *x* and thereby instantaneously releases the stops *v v*, that hold up the platen. The platen then under the 65 action of its springs *s s*, descends rapidly and presses the flong upon the form, and a final or finishing pressure can then be given by

means of one or more of the lever-arms *h h*. A A are doors at the front and back of the platen for the purpose of inclosing the space 70 between the platen and the bed *b*, and thereby preventing the escape of heat.

In order to allow the water to flow away when a wet form is used, the press is constructed so that the type-bed has a slight 75 downward inclination from front to back, or means are provided whereby the front of the press can, when desired, be slightly raised to give any required inclination to the bed. In Fig. 1 a plate B is shown inserted between 80 the press-frame at front and the foundation-plate C for the purpose of giving this inclination. D D are openings in the flange *r* of the plate *l* in order to let the water run freely 85 from the plate instead of its being left to evaporate on the heated type-bed.

Referring now to Figs. 5 and 6, *l* is the plate or sheet. The flanges at the front and back are not required except when the plate is intended to be used in a platen press working, 90 as hereinbefore described, for producing molds for stereotyping. *l'* is a slight convexity on one face of the plate, the convexity (which is exaggerated in Fig. 6) being greatest in the center of the plate and becoming 95 gradually less until it reaches a vanishing point toward the edges. This convexity is preferably produced by the electroplating process. The plate or sheet is placed, convex side uppermost, below the type-form in a 100 stereotype-matrix platen press or in a platen printing-press, with the result that when the platen comes down upon the form, the type at and near the middle being slightly held up by the convexity or thickening of the plate, 105 the impression obtained is perfect, while in the case of presses used for other purposes the plate is placed below or above the substance to be pressed, with the result that the pressure effected by the platen is equal over 110 the entire surface of such substance. Attempts have previously been made to obtain the same result—that is to say, equal pressure over all the pressing-surface—in the case of printing-presses by forming the platen with 115 a slight convexity at the middle; but this does not meet the difficulty unless the press is always used to print from forms of one given size, for which the convexity is appropriate; but by having a set of plates of various sizes with convexities, as described, a 120 plate can always be selected appropriate to the size of the form to be used, and, further, as the plates do not form an integral part of the press they can be used in presses already constructed with flat platens. 125

What I claim, and desire to secure by Letters Patent, is—

1. In a platen press for producing molds or matrices for stereotyping the combination 130 with the type bed *b*, the platen *d*, and the feed table *k* of the form-holding plate *l* having a back flange and a front flange, connectors *q q* engaging at one end with said back flange



and attached at the other end to springs *n n*, the said springs *n n* connected with a fixed part and catches *y y* engaging with said front flanges, substantially as and for the purpose set forth.

2. In a platen press, the combination with the platen, of toggle levers for raising and lowering the platen a right and left handed screw shaft for working said levers, hand levers on said shaft, chains attached at one end to said shaft so as to wind thereon and unwind therefrom as the shaft rotates in the one and the other direction respectively, springs attached at one end to said chains and at the other end to fixed parts and put in tension by the winding of the chains and the consequent rise of the platen, and a catch to retain the platen in the raised position and the springs in tension whereby when the said catch is released the springs cause the platen to descend rapidly, substantially as and for the purpose set forth.

3. In a platen press the combination with the platen of springs which are put in tension by the raising of the platen, a catch to retain the platen in its raised position and the springs in tension, and a sliding form carrier which releases the said catch when sliding with the form into position below the platen whereby when the form reaches the said position the springs cause the platen to descend rapidly, substantially as and for the purpose set forth.

4. A form-carrying sliding plate for a platen press for producing molds for stereotyping, said plate having in the operative position a slight downward inclination from front to back, a flange at the lower back end of said

plate, fastening provisions on said flange for the connection therewith of means for sliding said plate, and an opening through said flange for the passage of water from said plate, substantially as and for the purpose set forth.

5. A plate for a platen press having on one face a slight substantially circular convexity in the middle, said convexity being greatest in the center of the plate and gradually diminishing until it reaches a vanishing point toward the edges of the plate, substantially as and for the purpose set forth.

6. In a platen press, the combination with a rising and falling platen and means for moving it, of a carrier movable into and out of position opposite the platen, and means preventing movement of the platen toward the carrier when the latter is out of position, substantially as and for the purpose set forth.

7. In a platen press, the combination with a rising and falling platen and means for moving it, of a carrier movable into and out of position opposite the platen, and means holding the platen against movement toward the carrier when the latter is out of position, and automatically released and permitting movement of the platen toward the carrier when the latter is moved into position, substantially as and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

GEORGE EASTWOOD.

Witnesses:

THOMAS L. WHITEHEAD,  
T. F. BARNES.