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Patented Dec. 17, 1901.

C. H. HILL, A. W. PROCTOR & W. A. WATSON.

HAND PRINTING PRESS.

(Application filed Dec. 27, 1900.)

(No Model.)

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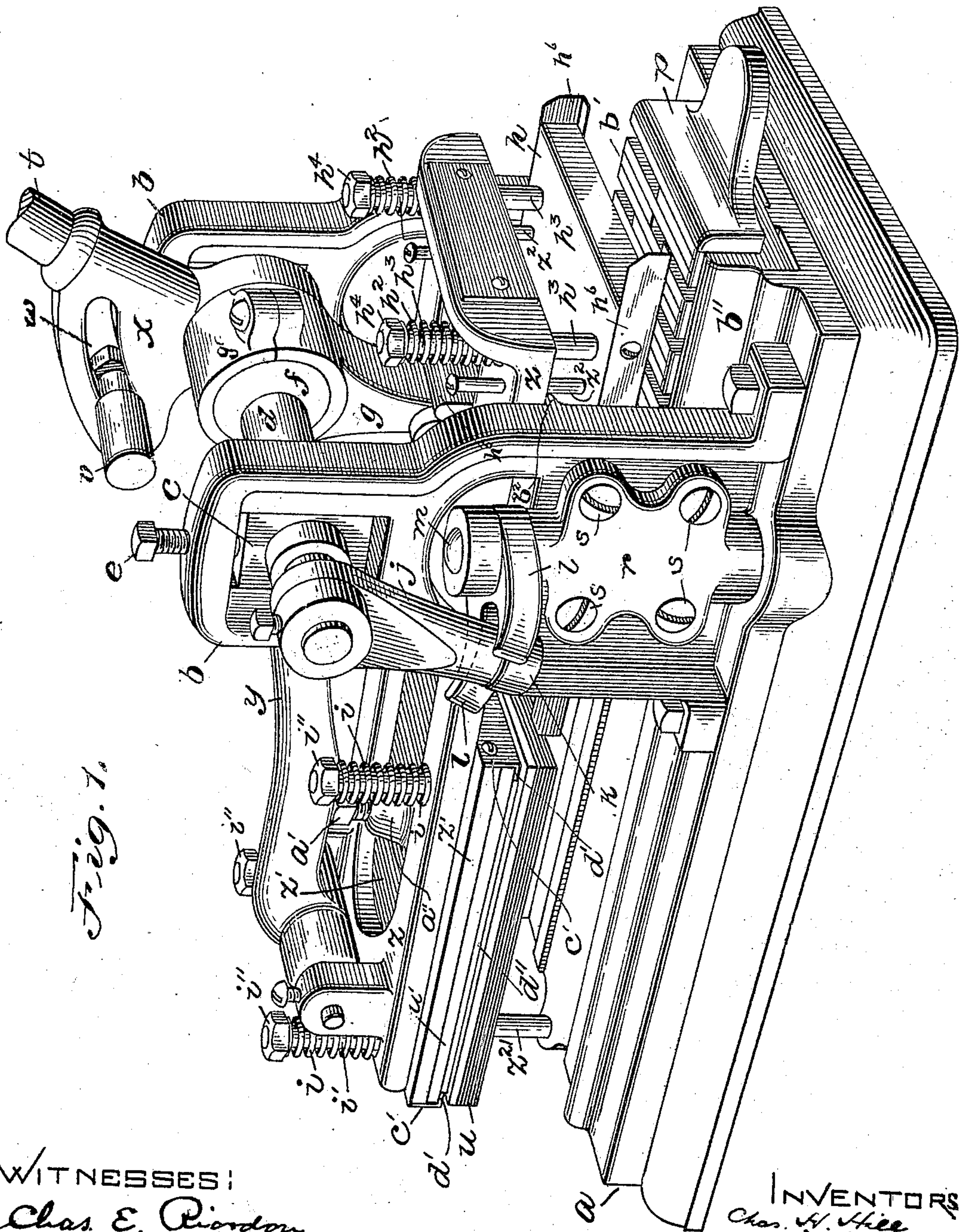


Fig. 1.

WITNESSES:

Chas. E. Riordon

M. H. Guilford

INVENTORS

Chas. H. Hill

A. W. Proctor

W. A. Watson

By Frank Parker Davis
Attorney

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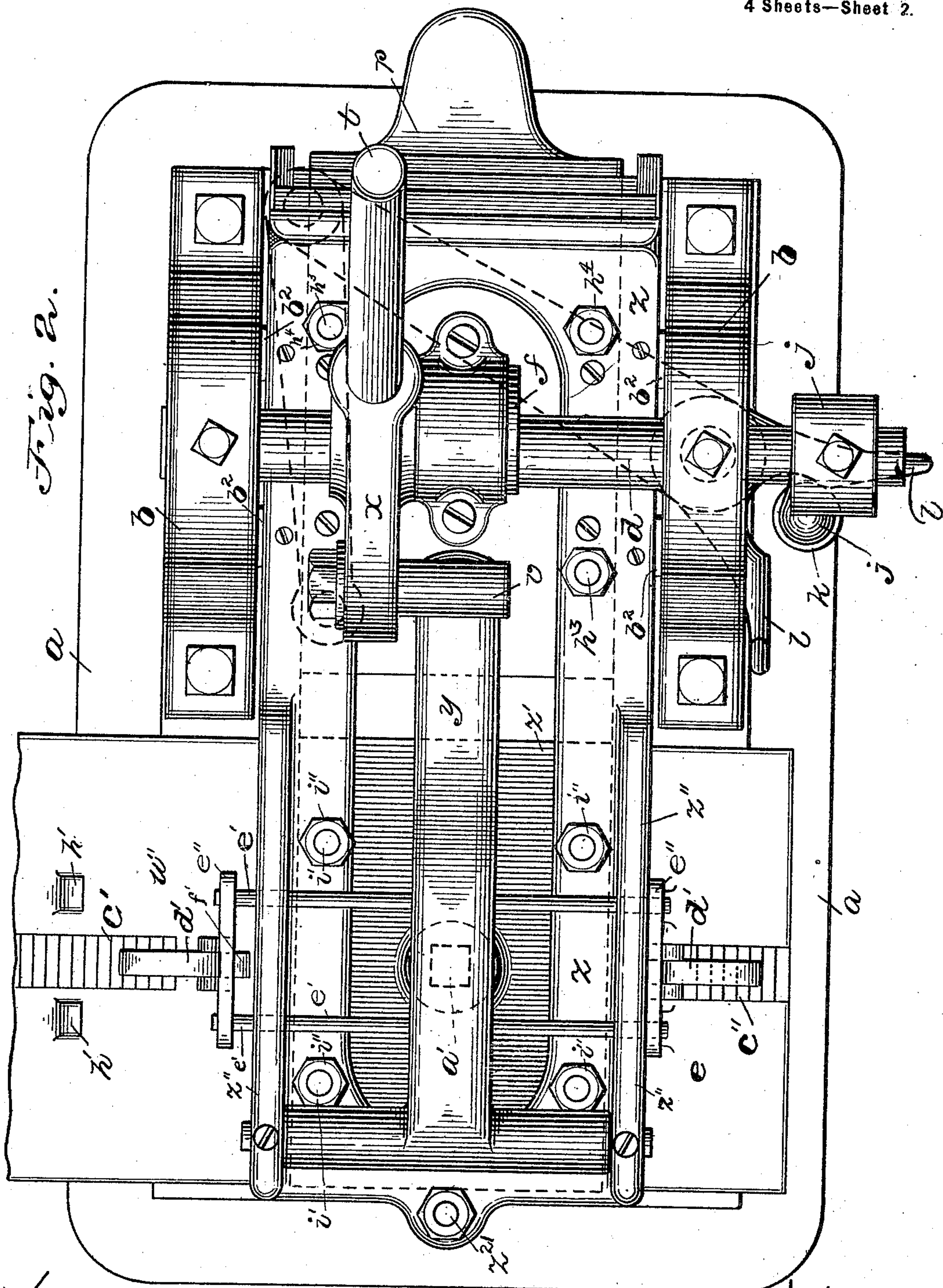
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WITNESSES:

Chas. E. Riordan

M. H. Guilford

INVENTORS

Chas. H. Hill

Amos W. Proctor

Wm. Arthur Watson

By *James H. Parker Davis*
Att'y.

No. 688,854.

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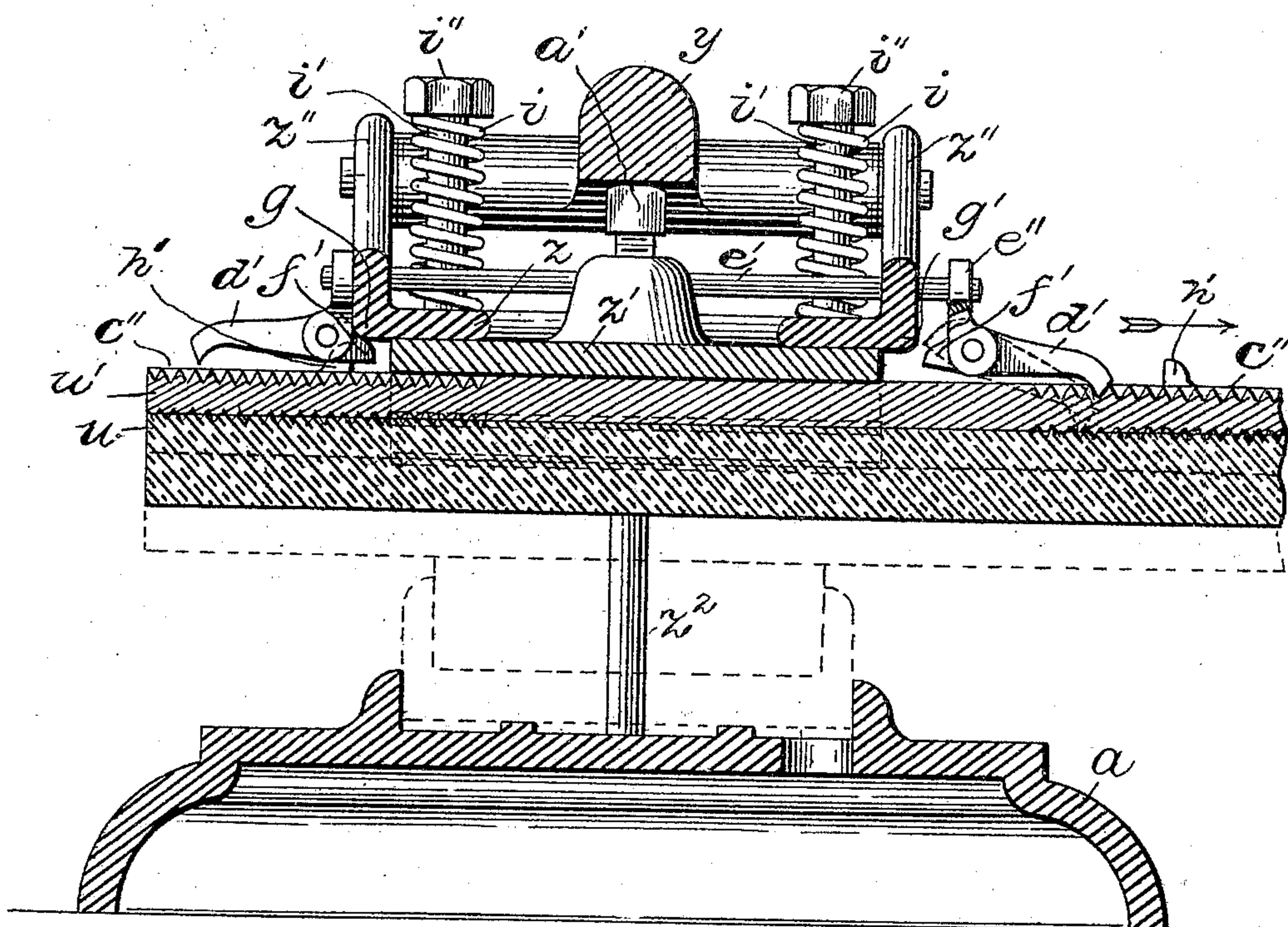
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Fig. 3.



WITNESSES:

Chas E. Riordan

M S Guilford

INVENTORS

Chas. H. Hill

Amos W. Proctor

Edw. Arthur Watson

J. Frank Parker Davis
Their Atty

No. 688,854.

Patented Dec. 17, 1901.

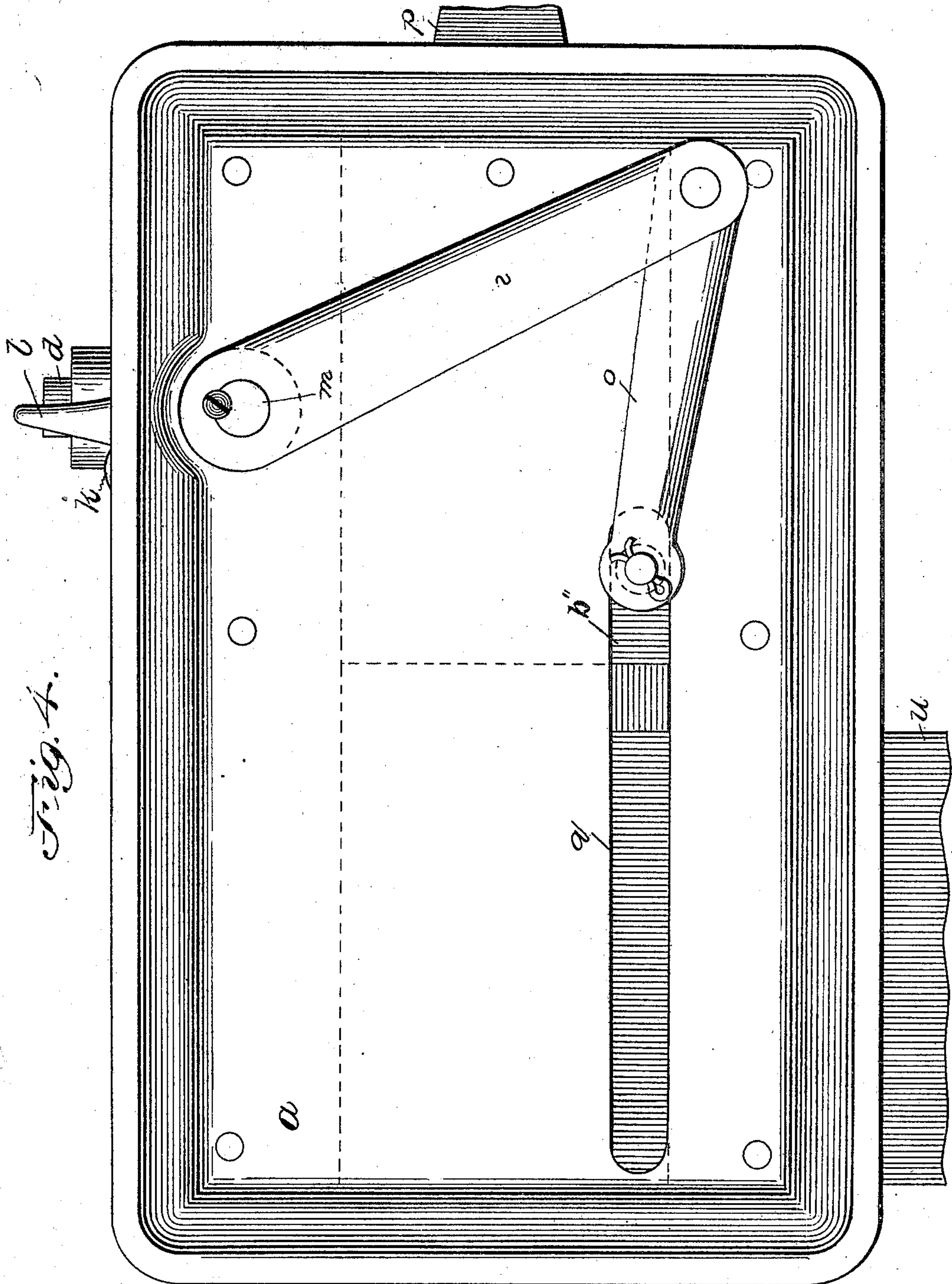
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(Application filed Dec. 27, 1900.)

(No Model.)

4 Sheets—Sheet 4.



WITNESSES:

Chas. E. Dordon
M. H. Guilford

INVENTORS:

Chas. H. Hill
Amos W. Proctor
Wm. Arthur Watson
J. Frank Campbell
New York City

UNITED STATES PATENT OFFICE.

CHARLES H. HILL AND AMOS W. PROCTOR, OF BILLERICA, AND WILLIAM ARTHUR WATSON, OF MEDFORD, MASSACHUSETTS, ASSIGNORS TO MODEL MENU MAKER COMPANY, A CORPORATION OF MAINE.

HAND PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 688,854, dated December 17, 1901.

Application filed December 27, 1900. Serial No. 41,206. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. HILL and AMOS W. PROCTOR, of Billerica, and WILLIAM ARTHUR WATSON, of Medford, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Hand Printing-Presses, of which the following is a description sufficiently full, clear, and exact to enable those skilled in the art to which it appertains or with which it is most nearly connected to make and use the same.

Our present invention relates more especially to a hand printing-press in which an inking-pad is used instead of rollers and which is designed for printing menu-cards or bills of fare for hotels and restaurants, though it will appear obvious that it may be employed for other purposes. A machine of this type is shown in Patent No. 623,930, granted April 25, 1899, and the present invention is primarily intended as an improvement upon that machine.

One object of the invention is to provide improved means for reciprocating the type-bed in positioning it alternately under the platen and inking-pad, which means shall be confined in location to one side of the machine and the under side of the base of the latter, thereby simplifying the construction to a considerable extent.

Another object of the invention is to provide for changing the position of the inking-pad, so as to avoid having the same places on the pad repeatedly encounter the same type to the detriment of uniform distribution of the ink held by the pad.

With these and other incidental objects in view the invention consists in certain novel features of construction and combinations of parts, the essential elements of which are recited in the appended claims and preferred forms of embodiment of which are specifically described hereinafter and illustrated in the accompanying drawings, whereof—

Figure 1 represents a complete machine in perspective, an operating-handle being shown as broken off to economize space on the drawing. Fig. 2 represents the machine in top plan view with a broken-line illustration of

type-bed-reciprocating means and showing an automatic inking-pad-shifting equipment not appearing in Fig. 1. Fig. 3 is a cross-sectional view of the machine with this equipment. Fig. 4 is a bottom plan view of the machine.

In the drawings the reference-letter *a* designates the base of the machine, which is in the form of a hollow casting of generally rectangular outline and upon the top of which there is formed a longitudinal slideway extending from end to end and designed to accommodate a type-bed holder or carriage *b'*. Standards *b* are erected upon the forward part of the base *a* at the opposite sides of the slideway, and a horizontal supporting-frame *z* is secured to lugs *b²* on said standards, said frame extending the length of the machine and being supported at the rear by a post *z¹*, rising from the base and screw-threaded at the upper end to receive a nut above the frame. An inking-pad-supporting plate *z'* is yieldingly held up against the under side of the frame *z*, at the rear portion thereof, by a set of spiral springs *i*, which surround rods *i'*, fastened in said plate and extending slidably through the frame and equipped with nuts *i''* to confine and adjust the springs. Said plate has a boss *a''* formed upon its upper side and projecting through the open center of the frame, said boss receiving a screw-threaded stud *a'*, which provides an adjustable abutment for a pad-depressing lever *y*, bearing upon said stud intermediate of its length and pivoted at its rear end by means of trunnions, which journal in bearings on the frame *z*. A platen *h* is yieldingly held up under the forward part of the said frame by means of a set of spiral springs *h²*, surrounding rods *h³*, secured to the platen and extending slidably through the frame and having adjusting-nuts *h⁴* on their upper ends. Guide-rods *z²* are also secured to the platen and extend slidably through the frame, said rods having heads to limit the downward movement of the platen. The latter carries a socket *h⁵*, projecting through the open center of the frame *z* and forming part of a knuckle-joint, the other member of which is formed at the lower end of an arm *g* of an eccentric-strap *g'*, em-

bracing an eccentric f on a shaft d , which journals in boxes c , occupying openings in the upper parts of the standards b , and adjustable thereon by means of set-screws e . A segmental head x is fastened to said shaft alongside the eccentric and is socketed at one end to receive a handle t in the shape of a long rod, which constitutes the manipulating means in the working of the machine. The head x has an arc-shaped slot w , through which extends the reduced end of a pin or stud v , designed to act upon the forward end of the lever y when the operating-rod t is moved backward, said pin or stud being adjustably secured to the head by a nut on the opposite side of the latter. The eccentric f is so set that forward movement of the operating-rod produces depression of the platen h .

On one end of the shaft d , outside the frame-work of the machine, there is secured an arm j , which projects downwardly and has a roller k in its lower end, and in the standard b at this side of the machine there is journaled a vertical shaft m , which carries at its upper end a forked head l , between whose tines the roller k works to rock this vertical shaft when the handle t is moved back and forth. The bearing for the shaft m is here shown with a cap-plate r , secured to the standard by screws s . To the lower end of said shaft, on the under side of the base a , there is fastened an arm n , and the latter is connected by a link o with the type-bed carriage b'' , which has a stud on its under side depending through a slot q in the base a , as shown in Fig. 4. It will be seen that this arrangement provides for the reciprocation of the said carriage to alternate its positions below the platen and the inking-pad, the parts being so timed as to bring about the positioning of said carriage below the inking-pad just as the pin or stud v bears down upon the lever y and below the platen just as the eccentric f commences to depress the latter.

Two forms of inking-pads are here shown, each being supported from the plate z' by means of flanged strips c' , secured to the latter, their flanges d' occupying grooves in the pad-base. The pad shown in Fig. 1 is designed for removal and replacement after being turned quarter-way around, and therefore is made square, with grooves d'' in all four sides of its base portion u' for the flanges d' to engage.

The reference-letter u designates the pad proper, and it will be seen that by shifting the position of the pad periodically in the manner just described the ink carried by the pad will be more fully distributed than if the pad remained permanently in one position.

In Figs. 2 and 3 automatic means for shifting the inking-pad are illustrated, the pad in this case being of elongated rectangular form and designed to be moved step by step cross-wise of the machine, guided by the flanged strips on the plate z' . The pad-base u'' is formed on its upper side with two alining saw-

tooth racks c'' , one extending from each end of the pad-base toward the center thereof, and said base is provided on opposite sides of each rack with stop-lugs n' . In adapting the machine for the automatic pad-shifting equipment the frame z is formed at the rear part with upstanding side flanges z'' , through which a pair of rods e' slidably extend, said rods being connected at the ends beyond said flanges by cross-pieces e'' , formed with pendent ears, between which are pivoted dogs or pawls d' . These dogs or pawls extend outwardly and are formed at their outer ends to engage the teeth of the racks c'' , respectively, and at their inner ends are formed with heels f' to take under portions g' of the frame z for a purpose presently explained.

In operation one of the dogs acts to shift the pad step by step in one direction, and then the other dog acts to shift the pad step by step in the opposite direction. In Fig. 3 the dog at the right-hand side is operating to shift the pad step by step in the direction of the arrow, the pad being shown in its uppermost position. Upon the lowering of the pad the rack drops away from the dog, with the result that the latter, turning on its pivot by its own weight, passes over the top of one tooth of the rack and against the next tooth, as indicated by broken lines in Fig. 3. Then upon the rise of the pad it will be shifted by reason of the engagement between the dog and the rack-tooth over which the latter has passed. While this takes place the other dog is inoperative, being held stationary out of engagement with its rack by reason of its heel f' taking under the frame z . When, however, the movement of the pad brings its lugs h' at this side up against the plate z' , preventing further shifting of the pad to the right, the continued co-action of the right-hand dog with its rack will cause said dog to be shifted and its heel run under the frame z , which of course involves a shifting of the rods e' and of the other dog, and this results in the heel of the latter being carried from under the frame z , so that the dog drops into engagement with the rack. Continued raising and lowering of the pad will now cause shifting thereof step by step to the left until the stop-lugs h' at the opposite side come up against the plate z' .

With the above-described automatic shifting means it will be seen that the pad is moved to a new position for each inking of the type.

The type-form is indicated at b' in Fig. 1, said form being set up in a bed p , which occupies the carriage b'' and is readily removable therefrom. The platen k is equipped with flanged guides h^6 for holding the blank cards to be printed.

It is believed that the operation of the machine as a whole has been made apparent, so that no further description need be given in this connection.

It will be seen that the objects primarily stated are thoroughly fulfilled by a construc-

tion such as here shown and described; but it is to be understood that the invention is capable of embodiment in other forms.

Having thus described our invention, what we claim as new is as follows:

1. In a machine of the character described the combination of a hollow base having a longitudinal slideway on top, a type-bed carriage arranged to reciprocate in said slide-way, reciprocating means located beneath the base and connected with said carriage, a depressible platen, an operating rock-shaft with means for acting upon said platen to depress the same, and operating connections between the rock-shaft and the reciprocating means below the base, substantially as described.

2. In a machine of the character described the combination of a hollow base having a longitudinal slideway on top, a type-bed carriage arranged to reciprocate in said slide-way, reciprocating means located beneath the base and connected with said carriage, a depressible platen, an operating rock-shaft with means for acting upon said platen to depress the same, and operating connections between one end of the rock-shaft and the reciprocating means below the base, substantially as described.

3. In a machine of the character described the combination of a hollow base having a longitudinal slideway on top, a type-bed carriage arranged to reciprocate in said slide-way, an upright shaft at one side of the machine, an arm fastened to the lower end of said shaft beneath the base, a link connecting said arm with the said carriage, a depressible platen, a rock-shaft over the same and having means for acting upon it to depress the platen, and operating connections between said rock-shaft and the upright shaft, substantially as and for the purpose described.

4. In a machine of the character described the combination of a hollow base having a longitudinal slideway on top, a type-bed carriage arranged to reciprocate in said slide-way, an upright shaft having an arm below the base and a forked head at its upper end, a link connecting the said arm with the carriage, a depressible platen, a rock-shaft over the same and having manipulating means, and an arm on the rock-shaft engaging the forked head on the upright shaft, substantially as and for the purpose described.

5. In a machine of the character described the combination of a supporting structure comprising a base, standards erected thereon and an intermediate frame-piece; a platen yieldingly supported below the latter; a reciprocatory type-carriage on the base; means below the latter for reciprocating said carriage; a rock-shaft journaled in the standards; means for depressing the platen by turning said shaft; and operating connections between the rock-shaft and the carriage-reciprocating means under the base, said connections being located on the outer side of one

of the standards, substantially as described.

6. In a machine of the character described the combination of a supporting-frame, a vertically-movable platen, a rock-shaft equipped with manipulating means, means for depressing the platen by turning said shaft, a horizontally-movable type-carriage, an upright shaft, operating connections between the same and the type-carriage, a forked head on the said upright shaft, and an arm on the rock-shaft engaging said forked head, substantially as described.

7. In a machine of the character described the combination of a supporting structure comprising a base, standards erected thereon and an intermediate frame-piece; a platen and an inking-pad yieldingly supported below the latter; a reciprocatory type-carriage on the base; means below the latter for reciprocating said carriage; a rock-shaft journaled in the standards; means for depressing the platen by turning said shaft; means for depressing the inking-pad by turning said shaft in the opposite direction; and operating connections between the rock-shaft and the carriage-reciprocating means under the base, said connections being located on the outer side of one of the standards, substantially as described.

8. In a machine of the character described the combination with a supporting-plate and means for raising and lowering the same; of an inking-pad supported by said plate and means for automatically shifting said pad by the raising and lowering movement of the plate, substantially as described.

9. In a machine of the character described the combination with a supporting-plate and means for raising and lowering the same; of an inking-pad supported by said plate and having racks; and pivoted dogs on the frame of the machine arranged to engage the said racks respectively, whereby the pad is shifted step by step under movements of the plate.

10. In a machine of the character described the combination of a supporting structure, a depressible platen yieldingly mounted beneath a part of said supporting structure; an inking-pad supported by said plate and having racks in its upper side and stop-lugs to abut the supporting-plate; a support mounted on the frame of the machine so as to move transversely thereof; and dogs pivoted to said support for engagement with the racks respectively and having heels to take under the part of the framework which overlies the pad-supporting plate.

11. In a machine of the character described a shiftable inking-pad provided with racks, a movable rod supported by the frame of the machine, and a dog on each end of the rod to engage the racks respectively and shift the pad alternately step by step in opposite directions.

12. In a machine of the character described a shiftable inking-pad provided with racks, a movable rod supported by the machine-frame,

and a dog on each end of the rod to engage the racks respectively and shift the pad alternately in opposite directions, combined with means substantially as described for intermittently throwing the dogs out of and bringing them into engagement with the teeth of the rack-bar, substantially as described.

13. In a machine of the character described the combination of a hollow base having a longitudinal slideway on top, a type-bed carriage arranged to reciprocate in said slideway, an upright shaft at one side of the machine, an arm fastened to the lower end of said shaft beneath the base, a rock-shaft with manipulating means, and operating connections between said rock-shaft and the upright shaft, substantially as and for the purpose described.

14. In a machine of the character described the combination of a hollow base having a longitudinal slideway on top, a type-bed carriage arranged to reciprocate in said slideway, an upright shaft having an arm below the base and a forked head at its upper end, a link connecting said arm with the carriage, a rock-shaft having manipulating means, and

an arm on the rock-shaft engaging the forked head on the upright shaft, substantially as described.

15. In a machine of the character described the combination of a supporting-frame, a rock-shaft equipped with manipulating means, a horizontally-movable type-carriage, an upright shaft, operating connections between the same and the type-carriage, a forked head on the said upright shaft, and an arm on the rock-shaft engaging the forked head, substantially as described.

In testimony whereof we, CHARLES H. HILL and AMOS W. PROCTOR, have signed our names to this specification, in the presence of two subscribing witnesses, this 22d day of December, A. D. 1900, and I, WILLIAM ARTHUR WATSON, have signed my name this 17th day of December, 1900.

CHARLES H. HILL.
AMOS W. PROCTOR.
WILLIAM ARTHUR WATSON.

Witnesses:

FRANK PARKER DAVIS,
JOHN MURRAY MARSHALL.