

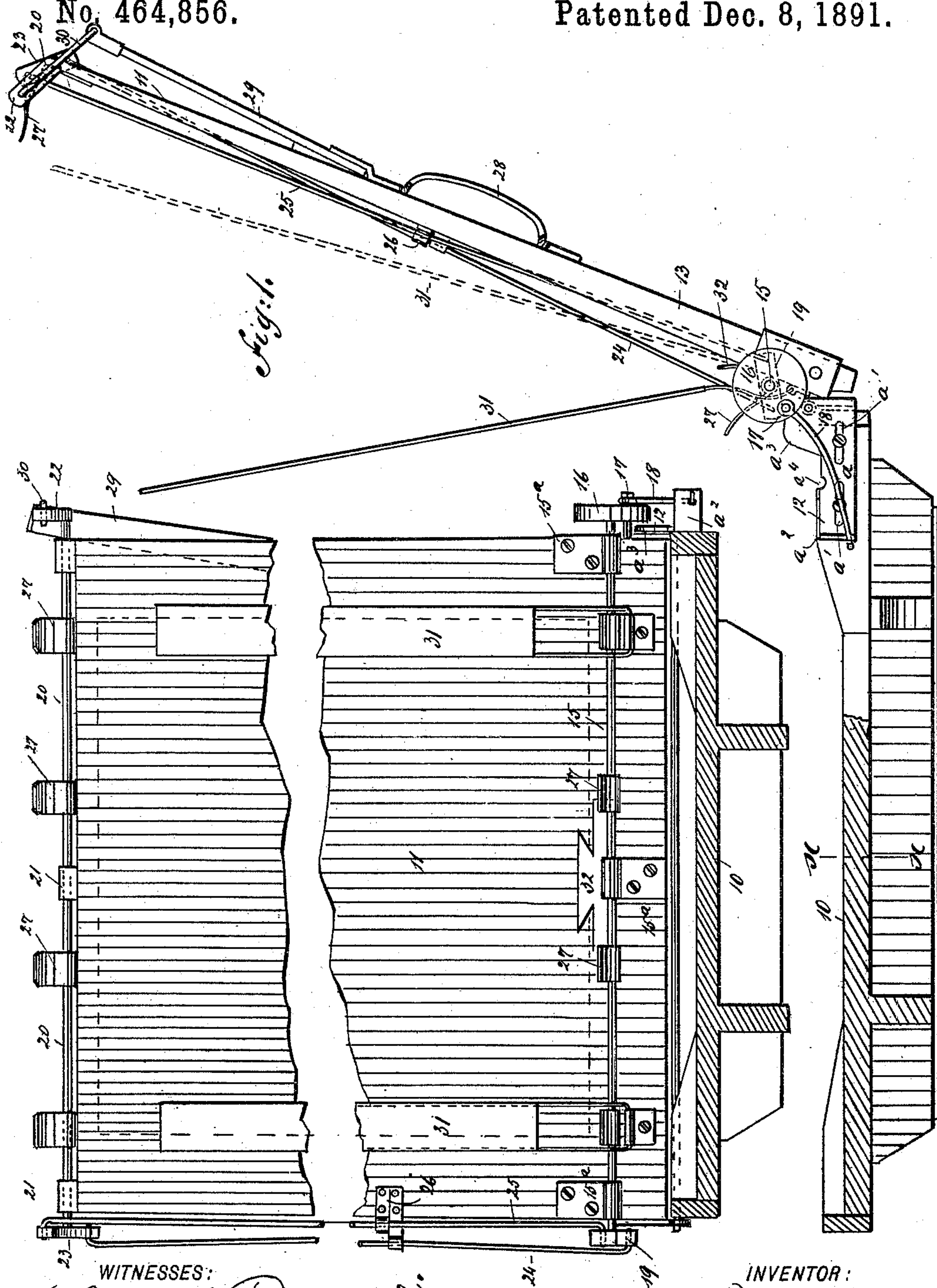
(No Model.)

2 Sheets—Sheet 1.

L. D. CLARK.
AUTOMATIC FRISKET FOR HAND PRESSES.

No. 464,856.

Patented Dec. 8, 1891.



WITNESSES:

Chas. Nix
C. Sedgwick

Fig. 2.

INVENTOR:

L. D. Clark
BY *Munn & Co*
ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

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Fig: 3.

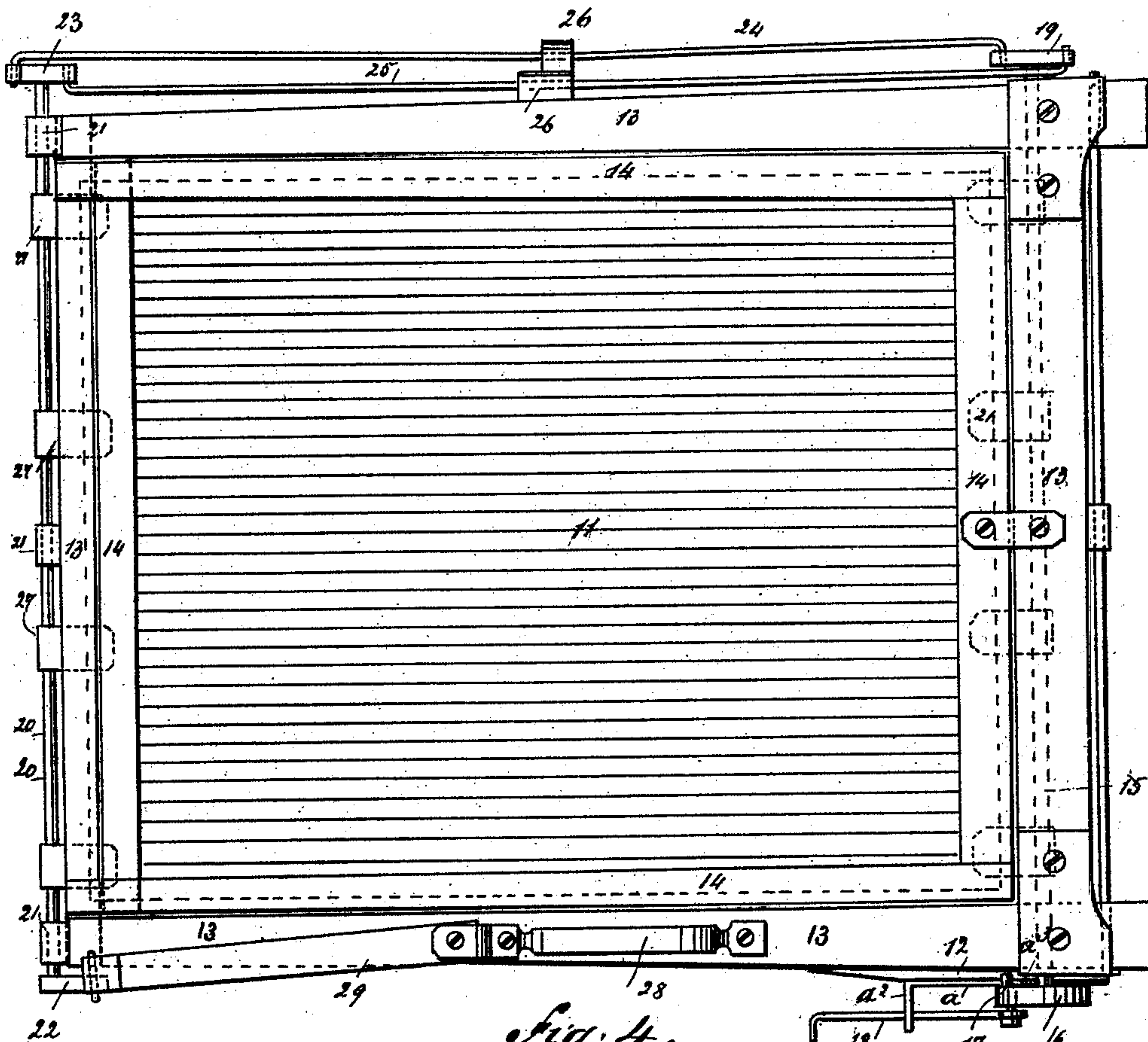


Fig: 4.

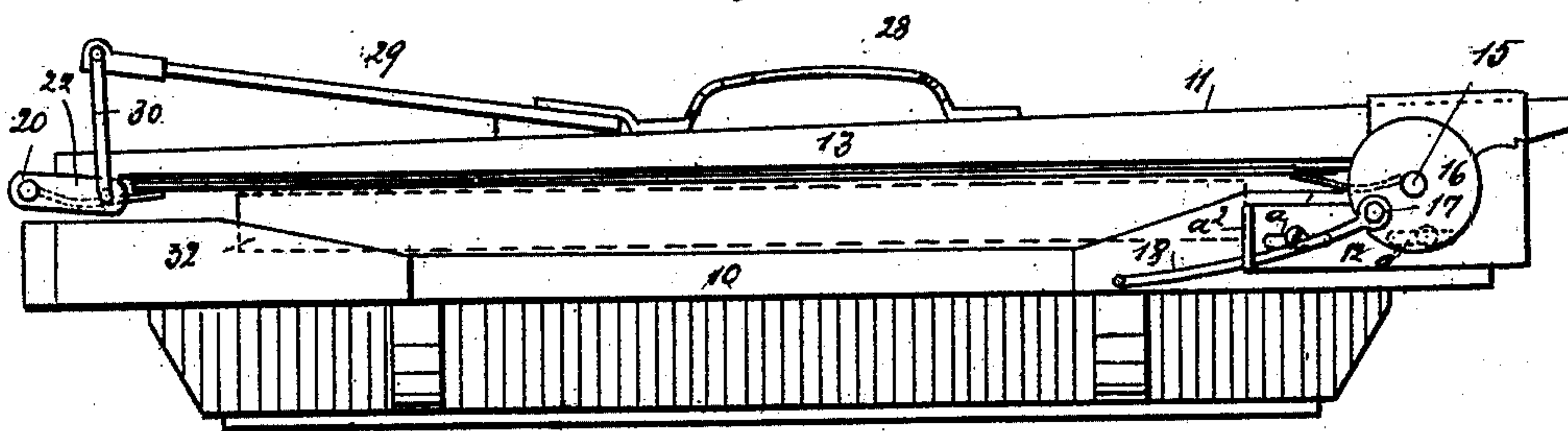
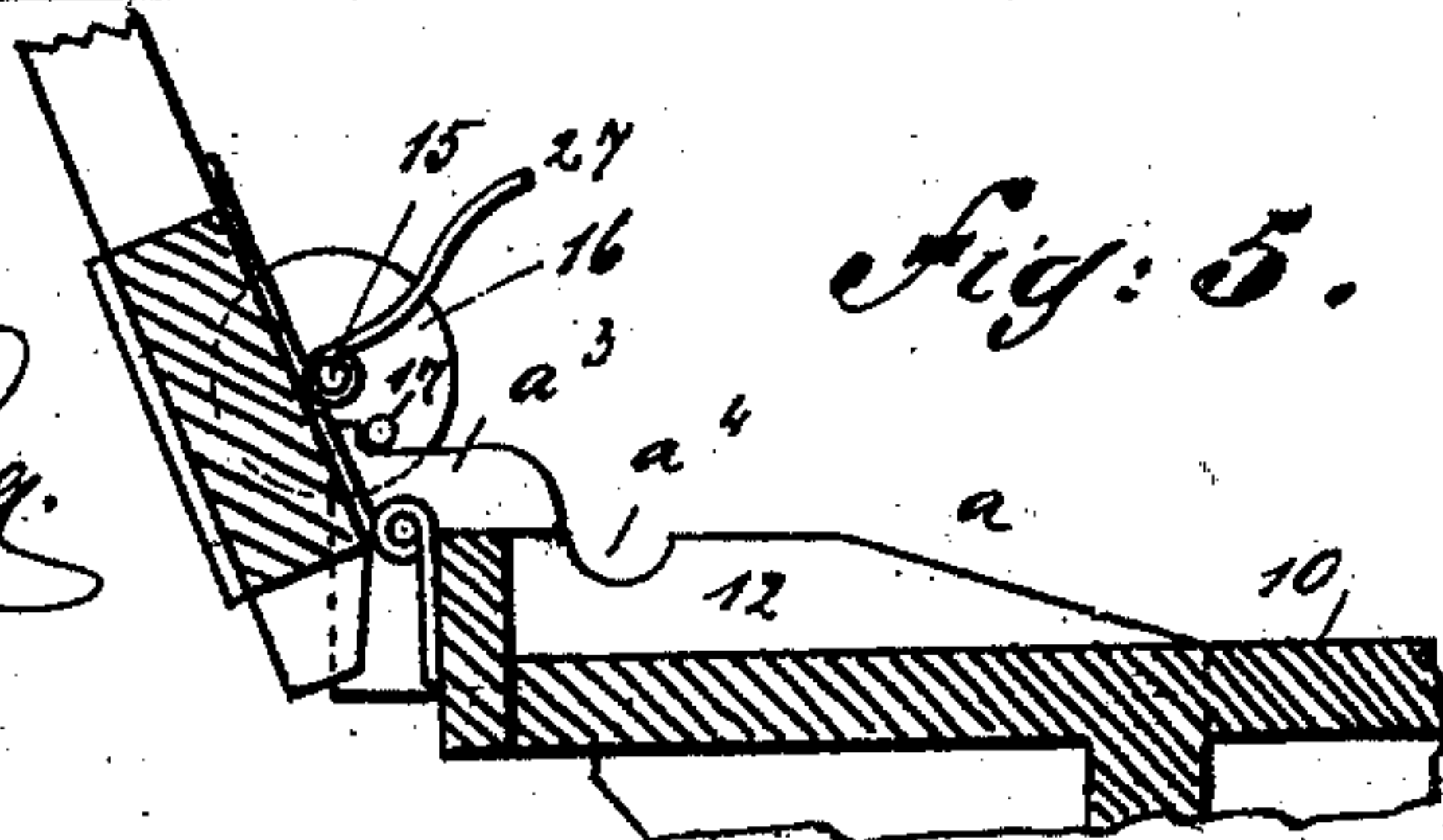


Fig: 5.

WITNESSES:
Chas. Nida
C. Bedgwick



INVENTOR:
L. D. Clark
BY *Munn & Co*
ATTORNEYS

UNITED STATES PATENT OFFICE.

LORENZO D. CLARK, OF FORT JONES, CALIFORNIA.

AUTOMATIC FRISKET FOR HAND-PRESSES.

SPECIFICATION forming part of Letters Patent No. 464,856, dated December 8, 1891.

Application filed December 13, 1890. Serial No. 374,542. (No model.)

To all whom it may concern:

Be it known that I, LORENZO D. CLARK, of Fort Jones, in the county of Siskiyou and State of California, have invented a new and Improved Automatic Frisket for Hand-Presses, of which the following is a full, clear, and exact description.

My invention relates to an automatic frisket for hand-presses, and has for its object to provide a device capable of being more expeditiously and conveniently handled than the friskets ordinarily used and which will maintain a perfect register and consequently secure accurate work.

A further object of the invention is to so construct the device that it will be exceedingly simple and capable of manipulation by a boy with equal facility and with as good results as at the hands of a skilled pressman as far as relates to the operation of this improvement.

The invention consists in the novel construction and combination of these several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the device, the tympan being elevated from the bed and the bed partly in section; and Fig. 2 is a section taken through the bed on the line xx of Fig. 1 and an elevation of the tympan with the improvements attached. Fig. 3 is a plan view of the device, the tympan being folded down upon the bed to print the sheet carried thereby. Fig. 4 is a side elevation of the device when in the position shown in Fig. 3, and Fig. 5 is a partial vertical section through the device when in the open position shown in Fig. 1.

The bed 10 may be of any approved or of the ordinary construction, and the tympan 11 is hinged at its lower end to one end of the bed in the manner usually adopted in the construction of hand-presses.

Upon one side of the bed, at the end adjacent to the tympan, a shoe 12 is adjustably secured, which shoe, as shown in Fig. 1, consists of a body portion a , engaging longitudi-

nally with the bed, provided with slots a' , through which screws or their equivalents are passed, an ear a^2 , extending horizontally and at a right angle from one end of the body, and an extension or offset a^3 , projecting vertically from the upper surface of the body at the opposite end. The upper end of the extension or offset is a cam-surface, being beveled from the tympan in direction of the bed, and in the upper edge of the shoe-body, between its ends, a cavity a^4 is produced to admit of the perfect closing of the tympan with the shafts and bearings attached, as herein-after described.

The tympan 11 preferably consists of a main frame 13, as shown in Fig. 3, covered with canvas or fabric of any description, and an auxiliary frame 14, fitted within the main frame at the back and removably secured thereto in any approved manner to admit of the use of a blanket or other packing ordinarily used in press-work. Near the lower or hinged end of the tympan a shaft 15 is transversely journaled, three bearings 15^a being usually employed, one near each end and the other at or near the center, which bearings are secured to the tympan and may be so constructed as to admit of adjustment to any size of form.

Upon the end of the shaft projecting over the offset of the bed-shoe a disk 16 is rigidly attached, provided with a wrist-pin 17, projecting from both faces of the disk, the inner section of the pin being adapted to ride upon the cam-surface of the bed-shoe offset a^3 . The outer section of the wrist-pin 17 is connected by a link 18 with the bed by means of the ear a^2 of the bed-shoe. One end of the link is pivoted to the pin, and the body of the link is so curved that its other end is enabled to pass through an opening in the lower portion of the ear a^2 and slide freely therein. The link thus has a sliding connection with the bed through the medium of the said shoe. The extremity of the sliding end of the link is enlarged or bent at an angle to the body to prevent it from slipping through the opening in the ear, as shown in Fig. 3, drawing the wrist-pin 17 back to its original position when the tympan comes to a rest upon its upward movement.

Upon the end of the shaft 15 opposite that

having the disk attached a head-block 19 is secured; which head-block extends about an equal distance beyond the sides of the shaft, the head-block being perforated at either end
5 to take crank-pins or ends of connecting-rods, either of which may be used in construction.

At the upper end of the tympan a transverse shaft 20 is journaled in suitable bearings 21, the said shaft being parallel with the lower
10 shaft 15. The upper shaft is provided with a crank-arm 22 at one end and a head-block 23 at its opposite end, corresponding in shape and location to the head-block of the lower shaft. The extremities of the two head-blocks
15 19 and 23 are connected by rods 24 and 25, which cross one another at their centers and at said central portions move in guide-sleeves 26, secured to one side of the tympan, as shown in Fig. 2.

Each shaft 15 and 20 is provided with grippers 27, secured thereon, which grippers are adapted to normally engage with the inner face of the tympan or with the paper to be printed, holding the same in engagement
25 with the tympan, and in printing a form smaller than the full size of tympan an extra frame-piece or rest is attached in the same relative position to the gripper-shaft as the inner frame of the tympan occupies in printing a full form.
30

Upon the back of the tympan, at one side, a handle 28 is attached, the upper end of the said handle being preferably shaped to form a socket to receive the lower end of a spring
35 29. The upper end of the spring is free and is pivotally connected by a link 30 with the crank-arm of the upper transverse shaft 20, and the tension of the spring is in a direction opposite to or away from the face of the tympan, so that tension is exerted at all times
40 upon the crank-arm of the upper transverse shaft. When the grippers are closed upon the paper, the crank-arm extends vertically downward, and the grippers, by reason of the connection between the two shafts, are held
45 by the spring in their closed position. When, however, the grippers are manipulated to release the paper and the crank-arm is carried upward over the center of its radius, the spring
50 acts to hold the said grippers open after the same have been brought to that position by the link working in the eye of the shoe.

In order that the paper to be printed upon may not become smutted or soiled, two guard-strips 31, of any light material, are attached to
55 the tympan at their lower ends below the lower shaft 15, and said guards are so located that when the tympan is closed down upon the bed one guard will be at each side of the
60 form. When the tympan is opened to remove the sheet, the guards stand out at an angle, as shown in Fig. 1, and in no wise interfere with the manipulation of the printed sheet or the sheet to be substituted therefor. If in
65 practice it be found desirable, a check-plate 32 may be placed at the central bottom portion of the tympan to limit the downward

movement of the sheets until said sheets are engaged by the grippers.

In operation, when the tympan is carried 70 to a vertical position, which may be done by means of the handle 28 or a connection between suitable operative parts of the press and the tympan, the link 18, by its engagement with the shoe, brings the disk to position on the upward movement of the tympan,
75 and the disk 16 revolves the shafts 15 and 20 sufficiently to throw the gripper from engagement with the sheet printed, the spring 29 holding the grippers in this position, as heretofore described. When the printed sheet is
80 removed and another substituted, the tympan is carried downward in direction of the bed, and at the first movement the pin 17, riding upon the cam-surface of the bed-shoe, revolves
85 the disk 16, and through it the shafts 15 and 20, sufficiently to carry the crank-arm 22 of the upper shaft downward past its center, whereupon the spring 29 immediately acts to
90 press the grippers against the sheet. This action takes place almost immediately upon the slightest downward movement of the tympan.

I desire it to be understood that, although specific construction has been shown and described, I do not confine myself thereto, as
95 equivalent construction may be substituted; that for the shoe device here shown for a press working a full form I may substitute one of suitable length and form to place the
100 cam-surface of the same in engagement with the wrist-pin, and that I may use gripper bars or rests in such case in order to secure the same result in working a form smaller than the press upon which said attachment may be
105 placed as is secured in working a full form; that for side guards or shields attached to the lower end of the tympan-frame the same may be secured to the sides of the frame and operated automatically, and that for the spring
110 herein described a spiral spring may be substituted, and springs of either construction may be so located as to adapt them to use on hand-presses of any form of construction to which this improvement may be attached, or
115 when necessary for the purposes set forth herein a positive movement in both directions may be substituted, the automatic operation of the same to be secured upon the general plan herein set forth and described, and illustrated by the accompanying drawings.
120

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

1. The combination, with a bed, of a tympan 125 hinged thereto and provided at its hinged and distal ends with parallel gripper-carrying shafts, connections between said shafts, and an actuating mechanism connecting the lower or inner gripper-shaft with the bed for automatically operating both gripper-shafts by the
130 single actuating mechanism by the movement of the tympan, substantially as set forth.

2. The combination, with a bed, of the tym-

pan hinged thereto, parallel rocking gripper-carrying shafts mounted on the distal and hinged ends of the tympan and connected together, a spring acting to close the grippers, and a crank and sliding-link connection between the lower gripper-shaft and the bed for opening the grippers against the action of the spring, substantially as set forth.

3. In a device of the character described, the combination, with a bed and a shoe attached to the bed and provided with a cam-surface, of a tympan hinged to the bed, an upper and a lower shaft journaled on the tympan, rods connecting the said shafts, a crank-disk secured to the lower shaft and provided with a wrist-pin adapted to engage the cam-surface of the shoe, a link attached to the wrist-pin and held to slide in the shoe, grippers attached to the shafts, a crank-arm secured to the upper tympan-shaft, and a spring attached to the tympan and connected with the said crank-arm, substantially as and for the purpose set forth.

4. In a device of the character described, the combination, with a bed, an adjustable shoe provided with a cam-surface and attached to the bed, and a tympan hinged to the bed,

of an upper and lower shaft journaled upon the inner face of the tympan, grippers attached to each shaft, head-blocks attached to corresponding ends of the shafts, connecting-rods uniting the said head-blocks, a disk attached to one end of the lower shaft, a wrist-pin carried by the disk and engaging with the cam-surface of the shoe, a link attached to the wrist-pin and having movement at one end in the shoe, a crank-arm attached to the upper shaft, and a spring secured at one end to the tympan, the free end of which spring is connected with the crank-arm, as and for the purpose set forth.

5. The combination, with the bed and the hinged tympan, of a rocking gripper-shaft mounted on the tympan parallel with its axis and provided with a crank and wrist-pin, a cam on the bed in the path of the wrist-pin, and a link pivotally connected at one end with the wrist-pin and having a sliding connection at its free end with the bed, substantially as set forth.

LORENZO D. CLARK.

Witnesses:

A. B. CARLOCK,
MARTIN C. BEEM.