(No Model.)

J. K. BITTENBENDER.

CLAMP.

No. 339,367. Patented Apr. 6, 1886.

Fig. 1.

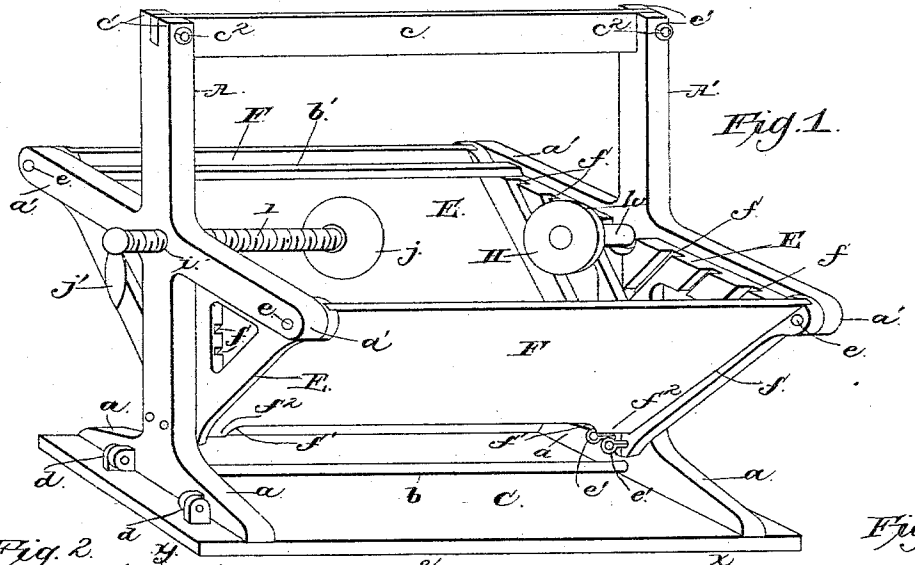


Fig. 2.

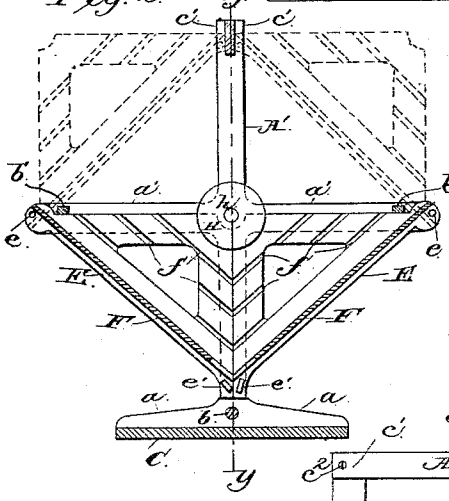


Fig. 3.

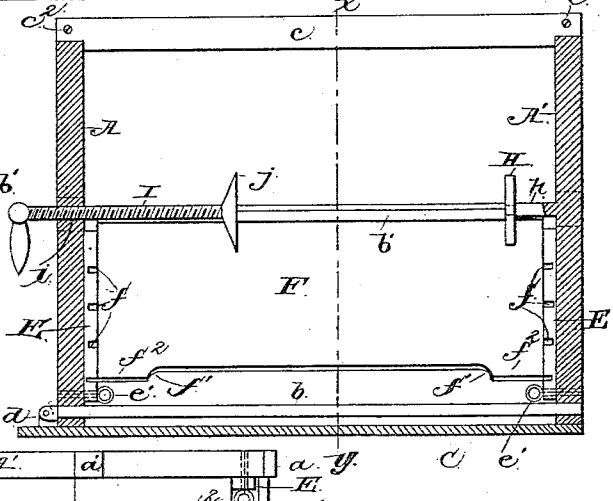
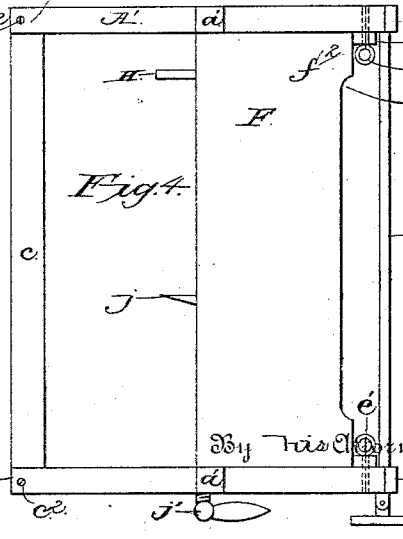


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN K. BITTENBENDER, OF BLOOMSBURG, PENNSYLVANIA.

CLAMP.

SPECIFICATION forming part of Letters Patent No. 339,367, dated April 6, 1886.

Application filed February 11, 1886. Serial No. 191,604. (No model.)

To all whom it may concern:

Be it known that I, JOHN K. BITTENBENDER, a citizen of the United States, residing at Bloomsburg, in the county of Columbia and State of Pennsylvania, have invented a new and useful Improvement in Presses or Clamps, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in presses or clamps; and it consists of the peculiar and novel construction and combination of parts, substantially as hereinafter fully set forth, and specifically pointed out in the claims.

The primary object of my invention is to provide a press or clamp that is adapted for compressing and holding certain materials in desired positions while certain work is performed thereon, and which at the same time will be capable of presenting said materials in different positions, so that work may be carried or effected at different points or parts of the materials.

The invention is especially designed for use in assembling in due regularity or order the leaves or sheets of paper that are to be compressed very compactly and firmly together and bound together by paste, glue, or other suitable material in tablets, and allowed to remain in such tightly-compressed and bound condition until the paste, glue, &c., shall have become thoroughly dried and hardened.

I propose to provide means whereby the frame can be expeditiously and conveniently adjusted into a position which is most favorable to assemble and arrange the materials; to provide means which can be conveniently adjusted or thrown out of use after the materials have been properly arranged, so that they shall be out of the way of the operator while he is performing the subsequent work upon the materials; to provide improved means for compressing and holding the materials in place while performing the work thereon and while it is drying; to provide adjustable devices whereby different sizes of materials can be accommodated and operated upon, and to provide means that shall be simple, strong, light, and durable in construction, thoroughly effective for the purposes designed, easy and ready of operation and adjustment, and cheap and inexpensive of manufacture.

In the accompanying drawings, Figure 1 is a perspective view of a press or clamp constructed in accordance with my invention. Fig. 2 is a transverse vertical sectional view on the line *x x* of Fig. 3, showing the position of the squaring-boards in dotted lines when they have been adjusted out of use; and Fig. 3 is a vertical longitudinal sectional view on the line *y y* of Fig. 2. Fig. 4 is a view of the device in the position which it occupies when the materials are being assembled therein.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A and A′ designate the vertically-disposed standards, which are arranged at a proper distance apart and provided with the integral outwardly-extending feet *a* and the horizontal arms *a′*, which are also cast or formed integral with the standards, and are arranged at right angles thereto, and at the middle thereof. The feet of the standards are connected and braced together by a rod, *b*, that is suitably secured or connected thereto, the outwardly-extending horizontal arms *a′* are braced and strengthened by similarly-arranged rods or bars, *b′*, and the upper free ends of the standards by a transverse bar, *c*. The upper ends of the standards are bifurcated, to provide arms *c′*, which are perforated transversely, and between these bifurcated arms of the standards the ends of the connecting bar *c* are detachably secured by means of pins *c²*, preferably of that class known as "spring" keys or pins, which are not liable to become easily misplaced accidentally when the press or clamp is in use.

The standards having the arms, together with the connecting-rods, constitute the supporting-frame of my improved clamp or press, and this frame is normally arranged in a horizontal position upon a bed or base plate or board, C. One of the standards has its base *a* hinged or pivotally connected to the bed-plate C, as at *d*, and the frame is adapted to be turned or adjusted on its hinged or pivotal connection with the bed-plate, to cause the same to assume a vertical or upright position, which is most convenient and favorable to the operator in assembling the materials in proper form or shape within the regulating or squaring boards of the device, as will more fully presently appear.

E designates end pieces or frames that are

suitably supported on the frame and connected together by the squaring or regulating boards F, which are supported therein. These end pieces are preferably quadrant or triangular in shape, and they are so disposed with relation to the standards and the arms that two of the edges of the end pieces are arranged in the plane of the arms and the lower half of the standards. (See Figs. 2 and 3.) The angle or corner of the quadrant-shaped end piece nearest the outer end of the arm *a'* is pivotally connected thereto, as at *e*, and the lowermost angle or corner of the end piece is connected to the lower end of the standard by means of a spring-key, *e'*, that passes through proper openings in the end piece and the standard, whereby they are readily detachable for the purpose of easily adjusting the end pieces and regulating-boards carried thereby. One of the quadrant-shaped end pieces is provided for each of the horizontal arms *a'*, and they are located on the inner side of the same within the frame; and when the end pieces and the regulating-boards are properly arranged and held within the frame for the purpose of assembling the work in due regularity the said boards are disposed at a right angle to each other, or substantially so. The inner faces of the quadrant-shaped end boards or pieces, E, are provided with a series of grooves, *f*, that are arranged thereon in inclined positions and parallel with each other, and the grooves decrease in length as they approach the upper inner angle of the quadrant-shaped end pieces, whereby different widths of squaring or regulating boards are accommodated and different sizes of material are arranged in and between the boards, so that it can be acted on by the pressure-screw to compress the material and bind it firmly and compactly together.

The lower edges of the removable regulating or squaring boards are provided with cut-out portions *f* between the ends, so as to leave extended lugs or ends *f'*, the cut-out portions *f* preventing the corners of the paper from turning and allowing dirt to escape, and the ends of said squaring-boards are fitted in the grooves *f* of two oppositely-disposed end pieces, and the boards are moved and adjusted in the grooves until their lower extended lugs, *f'*, meet and abut together so as to leave a space between the cut-out portions *f*, and they are held thereby in this relative position. If the longest groove of the end pieces have a regulating-board fitted therein, the largest-size work or material to which the press is adapted can be arranged and compressed in the device; and if materials of smaller size are to be arranged and clamped in the press a smaller regulating-board of the proper width is adjusted in the aligned grooves of two adjacent end pieces until they meet or abut together at their extended ends *f'*, the larger board being removed from or allowed to remain in the press, as may be found most desirable or convenient.

The end pieces, E, are preferably cast in one piece and made skeleton shaped for lightness and portability, and in lieu of having the grooves *f* they may have cast projections or studs that are so arranged and disposed as to receive and support the regulating or squaring boards in their proper relative positions, as hereinbefore described. One of the upright standards, preferably the standard A', has an inwardly-projecting shaft or arm *h*, cast therewith at or near its middle, and on the free outer end of this shaft is loosely and rotatively mounted a disk or plate, H, against which the material that is arranged in the press bears when acted on by the binding-screw I, which is mounted in a threaded socket, *i*, in or near the middle of the opposite standard, A, of the frame. The inner end of the binding-screw is provided with a disk, *j*, that is rotatively secured thereto, and the opposite end has a suitable handle, *j'*, by means of which the screw can be rotated by the hands of the operator to clamp and compress the material that has been previously arranged in the press between the disks H and *j*, as will be understood.

I will now proceed to describe the operation of my invention as it is used in assembling, compressing, and clamping the leaves of paper that form a tablet; but it will be understood that I do not confine myself to such use of the hereinbefore-described press or clamp, as it can be advantageously employed in any art where it is desirable to assemble and arrange the materials and then adjust them to the most convenient positions that are favorable to the operator to work upon them. The frame is adjusted to its horizontal position, as shown in Fig. 1, and two of the removable squaring or regulating boards are fitted or adjusted in the grooves of the end pieces, the said boards being of proper width to accommodate the paper that is to be compressed. The frame is now turned or adjusted by hand to assume its proper upright or vertical position, as shown in Fig. 4, in which position the frame is most convenient to the operator in laying the sheets of paper in the press, with two of the side edges of the paper in contact with the regulating-boards. The sheets of paper are assembled and arranged properly by the operator, while the frame is in its upright position, until the edges of the sheets are even or in the same plane, and the frame and its contents are turned to assume a horizontal position. (Shown in Fig. 1.) While the operation of laying the sheets of paper is being performed the attendant inserts between the leaves at proper distances apart a number of pieces of paste or other board, which form the backs of the tablets when they are separated, and after all the sheets of paper and pieces of pasteboard have been laid in the press to nearly its capacity a block of wood is interposed between the pressure-screw I and the material, after which the frame is adjusted as described. The operator now rotates the pressure or binding screw I, so that it firmly com-

presses the material together. The end pieces, E, together with the squaring-boards, which are carried thereby, are adjusted or turned out of position against the materials into the dotted-line position in Fig. 2, the spring-pins *e'*, that connect the lower angles of the end pieces to the standard, which are then turned on their pivots *e*, carrying with them the regulating or squaring boards. All sides of the work or material are now exposed, so that the operator can readily apply the glue, paste, cement, or other adhesive material to the edges of the paper to bind them together, and the paper or material can be turned around on its axis or the frame, and the paper adjusted to a vertical position to bring other concealed parts into view. The cross-bar *c* can be turned out of the way of the movable end pieces and the board by removing one or both of the spring-keys and swinging the same on one of the keys as a pivot, or removing it entirely from the standards. After the cement, &c., has been applied to the paper or other material, and while the cement is moist, the material is allowed to remain in the press until the binding substance has dried and become hardened, after which it is removed and the tablets cut or separated apart.

I do not desire to limit myself to any particular form of fastening device for connecting the pivoted end pieces to the standards, nor to the precise details of construction and form and proportion of parts herein shown and described, as an embodiment of my invention, as I am aware that many changes therein can be made without departing from the spirit or sacrificing the advantages of my invention.

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

1. A clamp or press comprising a frame normally held in a horizontal and adapted to be turned to an upright position, removable and adjustable squaring boards held in the frame at an angle to each other, and a clamping-screw and disk carried by the frame, substantially as described.

2. A press or clamp comprising a horizontally-disposed frame pivoted or hinged at one end to adapt it to be turned or adjusted to an upright position, the adjustable regulating-boards arranged in the frame at substantially right angles to each other, and a binding-screw and disk carried by the frame, substantially as described.

3. A press or clamp comprising a frame, pivoted end pieces carrying regulating-boards arranged at an angle to each other, a binding-screw, and a disk, substantially as described.

4. A press or clamp comprising a frame, a binding-screw, and a disk, and regulating-boards pivotally mounted therein, and arranged at substantially right angles to each other, and adapted to be swung on their pivots out of position in opposite directions, substantially as described.

5. A press or clamp comprising a frame, end pieces pivotally connected thereto at one end and detachably at another end, squaring or regulating boards supported in and connecting the end pieces, a binding-screw, and a disk, substantially as described.

6. A press or clamp comprising a frame, grooved end pieces connected thereto, interchangeable boards fitted in the grooves, a disk, and a binding-screw carried by the frame, substantially as described.

7. A press or clamp comprising a frame, the grooved adjustable end pieces having squaring or regulating boards arranged at an angle to and adjustable toward and away from each other, and a pressure-screw, substantially as described.

8. In a press or clamp, a frame comprising the upright standards having the right-angled arms, and rods connecting the standards and arms, in combination with the pivoted end pieces permanently attached to the arms and detachably connected to the standards, the removable and adjustable regulating-boards supported in the end pieces, a disk, and a pressure-screw mounted in one of the standards, substantially as described.

9. In a press or clamp, a frame hinged at one end to adapt it to assume an upright position, and comprising the upright standards having the right-angled arms and the connecting-rods, in combination with the pivoted end pieces, E, detachably connected at one end to the standards, the squaring or regulating boards mounted in and carried by the end pieces, a rotatable disk, H, mounted on one of the standards, and a pressure-screw working in a socket in the opposite standard, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN K. BITTENBENDER.

Witnesses:
C. C. PEACOCK,
GEO. S. ROBBINS.