

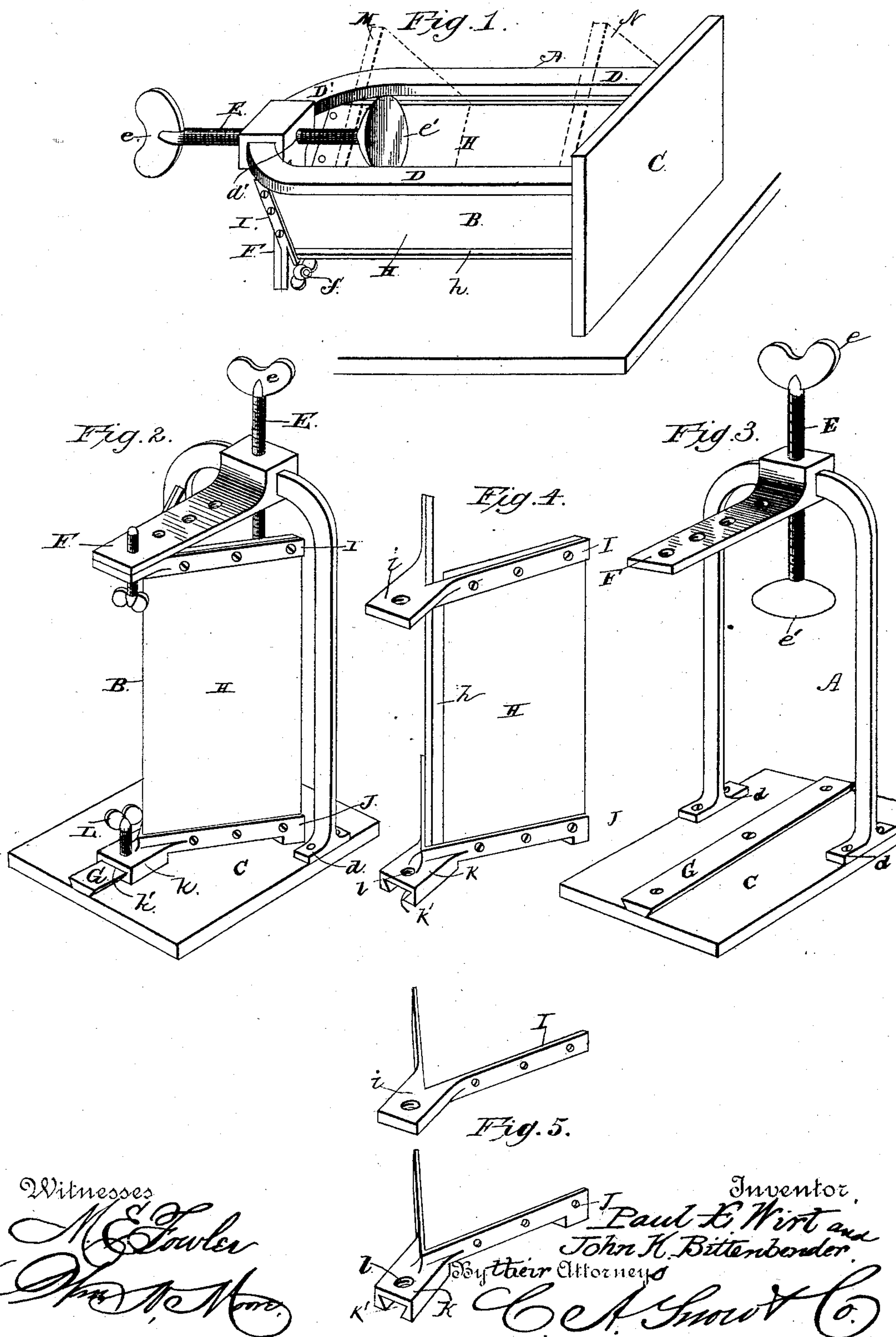
(No Model.)

P. E. WIRT & J. K. BITTENBENDER.

CLAMP OR PRESS.

No. 371,292.

Patented Oct. 11, 1887.



Witnesses
M. E. Fowler
John H. Bittenbender

Inventor,
Paul E. Wirt and
John H. Bittenbender.
By their Attorneys
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

PAUL E. WIRT AND JOHN K. BITTENBENDER, OF BLOOMSBURG, PENN-
SYLVANIA.

CLAMP OR PRESS.

SPECIFICATION forming part of Letters Patent No. 371,292, dated October 11, 1887.

Application filed July 20, 1886. Serial No. 208,578. (No model.)

To all whom it may concern:

Be it known that we, PAUL E. WIRT and JOHN K. BITTENBENDER, citizens of the United States, residing at Bloomsburg, in the county of Columbia and State of Pennsylvania, have invented new and useful Improvements in Clamps or Presses, of which the following is a specification.

Our invention relates to improvements in clamps or presses; and it consists of the peculiar combination and novel construction and arrangement of the various parts for service, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

The object of our invention is to provide an improved clamp or press which shall possess superior advantages over all others that have preceded it in points of simplicity, durability, and strength of construction, cheapness in the manufacture thereof, and in the ease and facility with which it can be operated or adjusted.

A further object of our invention is to provide improved means for guiding the regulating or squaring trough when about to apply the pressure to the work in order to compress the same; to provide means for clamping the regulating trough against movement or play after it has been adjusted to its proper position beneath the pressure device, thereby preventing the said trough from moving either vertically or laterally, and to provide an improved regulating trough or frame which can be easily and readily moved away from the work after the pressure has been applied thereto without disturbing or disarranging the work, thereby enabling the operator to have free access to the work while it is under pressure and on all sides thereof to perform the necessary manipulations thereon.

A further object of our invention is to provide an improved clamp or press which can be easily and readily turned or inverted from a vertical position in which the pressure is applied to a horizontal position, in order to adjust the apparatus into a more convenient position to the operator in arranging and adjusting the work in the trough into proper position preparatory to applying the pressure thereto.

Our improved press or clamp is especially

adapted for use in arranging the leaves of paper which are to be compressed together to form tablets; but we would have it understood that the device can be used in any relation where it is desirable to first arrange the work properly and then subject it to pressure, in which condition it is to remain while the subsequent operations, if any, are performed thereon.

In the accompanying drawings, which illustrates a clamp or press embodying our invention, Figure 1 is a perspective view of the device in a horizontal position in order to more readily and conveniently arrange the work therein. Fig. 2 is a like view of the device in the position it assumes when the work is subjected to pressure. Fig. 3 is a detached perspective view of the carrying-frame for the pressure devices and the regulating-trough. Fig. 4 is a detail perspective view of the regulating trough, and Fig. 5 shows detached perspective views of the brace-straps for the trough.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the carrying-frame, and B the regulating or squaring trough, the peculiar features of construction and arrangement of which we will now proceed to describe in detail.

The carrying-frame A comprises a base, C, which is of any preferred form, preferably square or rectangular, the uprights D, which are provided at their lower ends with the enlarged perforated feet *d*, through which are passed screws to firmly secure the uprights to the base C, and which are connected at their upper ends by the bow or segment shaped piece D', which is formed in a single piece or casting with the uprights and provided at its middle with an enlarged portion, through which is formed an interiorly-threaded opening, *d'*, which forms a bearing for the pressure-screw E, that is free to move longitudinally through the bearing when the screw is rotated in either direction to apply pressure to and release it from the work that is carried in the regulating-trough, as will be more fully hereinafter explained. The pressure-screw E is thus supported in and carried by the uprights, and it is arranged at right angles to

the base C, so that when it is rotated by the hand of the operator it will be moved toward or withdrawn from the work to compress and release the same, as will be presently described.

5 The upper end of this pressure-screw is provided with a thumb-piece or handle, *e*, so that it can be conveniently grasped and turned by the hand of the operator, and the lower end of the said pressure-screw has a follower or
10 disk, *e'*, loosely journaled thereon, said disk remaining loose on the screw, so that it will not partake of the rotary motion of the screw, and having an enlarged flat bearing-face to prevent injury to the work to be clamped and
15 compressed thereby.

F designates an arm or bar which is rigidly affixed to or formed integral with the enlarged portion of the bow or segment shaped piece
20 D' of the uprights D. This arm or bar is arranged to project outwardly from the uprights and at right angles thereto, and when the apparatus is turned to a vertical position this arm lies in or occupies a horizontal position. The arm is arranged on one side of the up-
25 rights and the pressure-screw mounted therein, and the arm has a series of transverse openings or apertures which are interiorly threaded, for a purpose hereinafter described, a small binding or clamping screw, *f*, of any approved
30 form, working in one of the said openings.

G designates a guide-strip, which is preferably formed of metal. This guide-strip is inclined or beveled on its side edges, so that it is caused to assume a dovetailed shape in cross-
35 section, or the sides of this strip can be arranged at right or any other angle to the flat upper side thereof to form a strip that is rectangular, square, or of any other desired form in cross-section, the function of this strip be-
40 ing to prevent the regulating-trough from having any lateral or vertical movement, and thus prevent the displacement thereof. The guide is rigidly affixed to the base of the carrying-
45 frame by means of screws or other suitable fastening devices, and it is arranged transversely of the uprights immediately beneath the binding-screw or in line therewith and extends nearly from one corner of the base to the other, as shown.

50 The regulating-trough B comprises two boards, H, which are arranged at right angles to each other to form a trough which is substantially V shape in cross-section, and the brace-straps I J, which are affixed very se-
55 curely to the boards H by screws, &c., the brace-straps being fitted against the outer sides and at the ends of the boards, as shown in the detail view, Fig. 4.

60 The right-angled boards H, that form the sides of the trough, are arranged out of contact with each other at their contiguous edges, so as to form an intermediate space or slot, *h*, through which the dirt or other foreign mat-
65 ter and material is free to escape when the work is being assembled and arranged in the trough, and the ends of the trough or frame are left open, so that it can be easily and read-

ily withdrawn from the work without disturb-
ing or disarranging the same after it has been subjected to pressure. The trough is thus
70 formed of two inclined or converging sides and with open ends, and it is thus rendered very light and simple in its construction. The brace straps I J are each formed of a single
75 piece of metal in any suitable manner, either cast or formed of bar metal, as may be preferred, the strap I being composed of two right-angled pieces which are arranged at a suit-
80 able angle which corresponds with the shape of the trough, and provided at its apex with an extended short arm, *i*, which is provided with a transverse opening, through which
85 passes the binding-screw *f* to connect the upper end of the trough to the uprights of the carrying-frame, as shown.

The brace-strap J is provided with a similar extended arm, *k*, which is arranged at the apex of the inclined side pieces of straps and in line with the strap, and on one of its faces
90 this arm *k* is provided with a longitudinal recess, *k'*, in which the guide-strip is fitted, so that the regulating-trough is guided immediately beneath the pressure-screw. This ex-
95 tended arm *k* of the strap J has the sides of its longitudinal groove or recess inclined, squared, &c., to conform to the shape of the guide, and the said arm is further provided with a trans-
100 verse threaded opening, *l*, in which works a binding-screw, L, which serves to hold the trough from either vertical or lateral move-
105 ment or play when the apparatus is adjusted to receive and assemble the work, or when it is subjected to pressure.

Follower-boards M N (shown in dotted lines in Fig. 1) are arranged between the work, the
110 base C, and the head *e'* of the binding-screw E, to prevent the latter from injuring or damaging the work which is clamped and com-
115 pressed thereby.

This being the construction of our improved
120 clamp or press, the operation thereof is as follows: The binding-screws on the opposite sides of the trough are tightened against the carry-
125 ing-frame, and both the frame and the trough are turned to a horizontal position, as shown in Fig. 1, so that the open side of the trough is uppermost, in which the apparatus is most
130 convenient to the operator in assembling and arranging the work in the trough in due regularity, the lower follower-board, M, being placed in the trough in advance of the work. After the work has been properly assembled and arranged in the trough, the board N is then placed therein, and the carrying-frame and trough are now turned to a vertical po-
135 sition, as in Fig. 2, after which the binding-screws are loosened, so that the trough can be adjusted to bring the center of the work therein immediately beneath the pressure-screw. Af-
140 ter this adjustment of the trough is attained, the binding-screws are turned to hold the trough against either vertical or lateral move-
145 ment and displacement, so that the trough is held immovably in place, and the pressure-

screw is now turned to compress the work very compactly together. The work is thus compressed and allowed to remain in this condition for a sufficient length of time, and the
 5 trough can be easily and readily removed from the work without disturbing or disarranging the same, to permit free access to all sides thereof, by merely loosening the binding-screws and drawing it along the guide-strip G. The
 10 workman can now operate upon the work without hinderance from the trough, as in applying the glue or binding material to the leaves of the tablet, and the work is compressed until the glue has dried, when the pressure thereon
 15 is released by rotating the pressure-screw in the proper direction, and the work removed.

The trough can be easily and readily removed from the carrying-frame by sliding it along the strip G after the binding-screws are
 20 released when it is desired for any purpose whatever; but the trough is normally held or retained on the base of the carrying-frame by the strip G fitting in the recessed arm of the trough. By the use of the guide-strip and
 25 the recessed arm the trough is guided in its movements beneath the pressure-screw, so that work of different sizes and dimensions can be accurately and quickly adjusted exactly beneath the screw, it being important, in order
 30 to insure an equal and uniform pressure on the work, that the screw shall bear on the work at the middle or center thereof. The binding-screws, that are carried by the extended arms of the trough, provide convenient means for
 35 holding the trough against lateral or vertical movement while the pressure screw is being applied to the work and for holding the trough to the carrying-frame in turning the latter from a vertical to a horizontal position, and
 40 vice versa.

The brace-straps strengthen and brace the sides of the open-ended trough very materially, and thus increase the strength of the trough and the durability thereof.

45 The apparatus is very simple, strong and durable in construction, easily and readily operated and adjusted, and can be manufactured at a comparatively small cost.

Various slight changes in the form and proportion of parts and details of construction 50 can be made without departing from the principle or sacrificing the advantages of our invention.

The arm F at the top of the carrying-frame is adapted to support the same when the parts 55 are thrown into the horizontal position shown in Fig. 1. In that position the base supports one end of the machine and the arm F the other end.

Having thus fully described our invention, 60 what we claim as new, and desire to secure by Letters Patent, is—

1. In a clamp or press, the combination of a carrying-frame having a base rigidly affixed thereto, an adjustable pressure screw working 65 in the frame, a trough fitted on the base and movable thereon at right angles to the line of motion of the screw, and a fixed guide for guiding the movement and preventing displacement of the trough on the base, substantially as described, for the purpose set forth. 70

2. In a clamp or press, the combination of a carrying-frame having a base and an extended arm, F, a pressure-screw supported in the frame, and an adjustable trough carried 75 by the frame and provided with the extended arm having the binding-screw for clamping the trough to the extended arm of the carrying-frame against displacement, substantially as described, for the purpose set forth. 80

3. In a clamp or press, the frame, the pressure devices, substantially as described, and the trough independent of the frame and movable back and forth at right angles to the line of movement of the pressure devices, as 85 set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

PAUL E. WIRT.
 JOHN K. BITTENBENDER.

Witnesses:

C. C. PEACOCK,
 GEO. S. ROBBINS.