

(No Model.)

G. W. WEAVER.

CLAMP OR PRESS.

No. 361,339.

Patented Apr. 19, 1887.

Fig. 1.

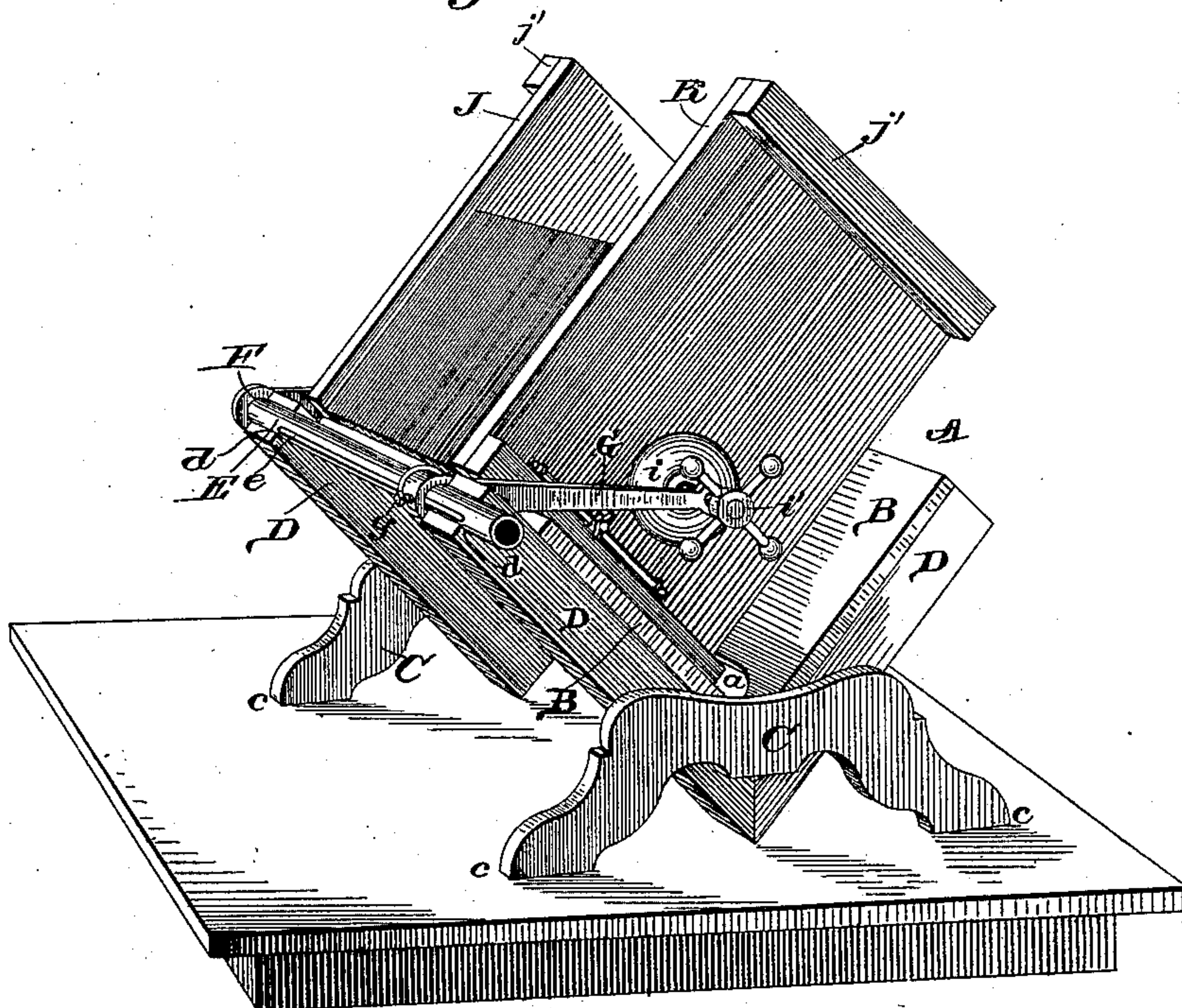


Fig. 2.

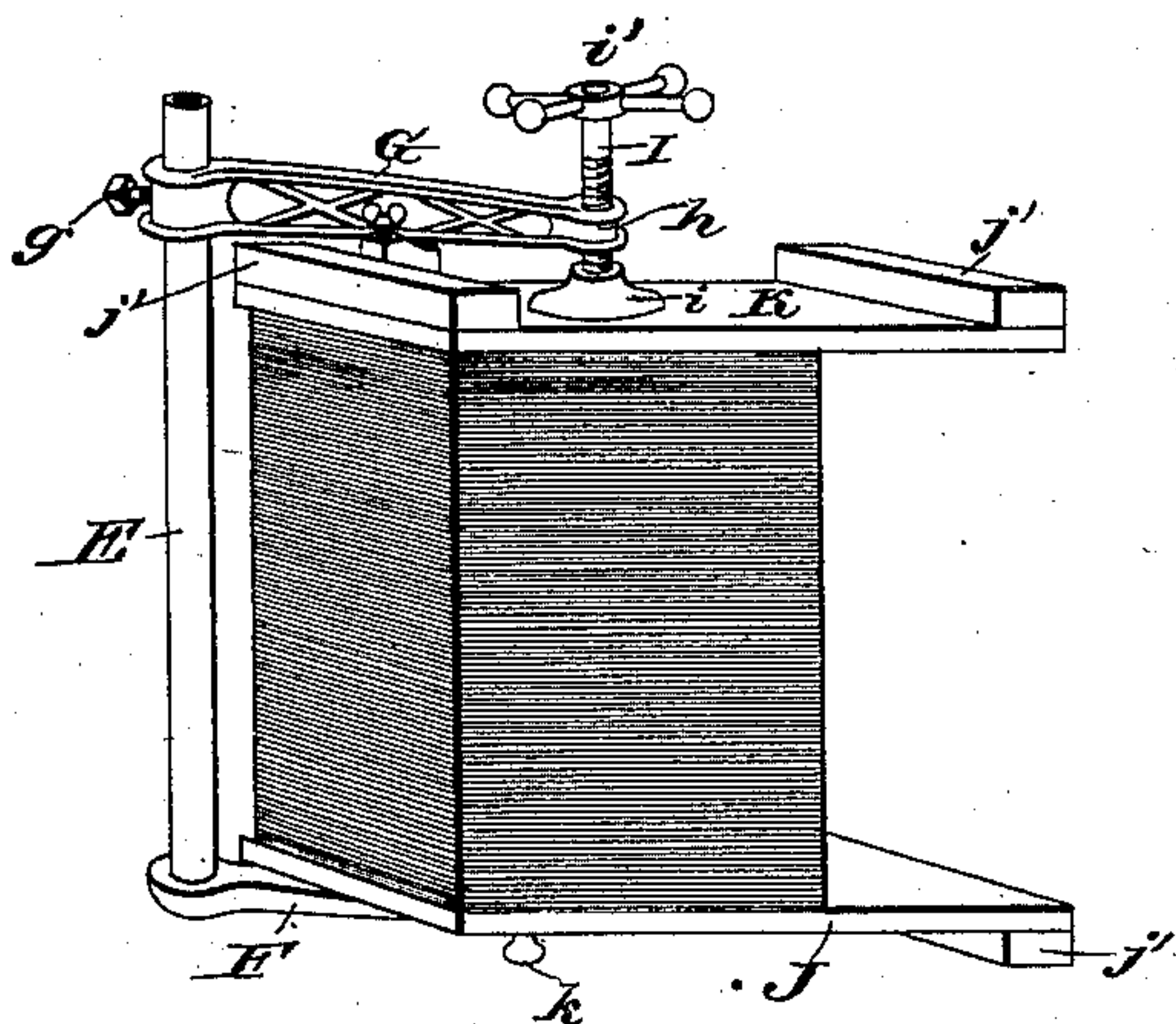


Fig. 3.

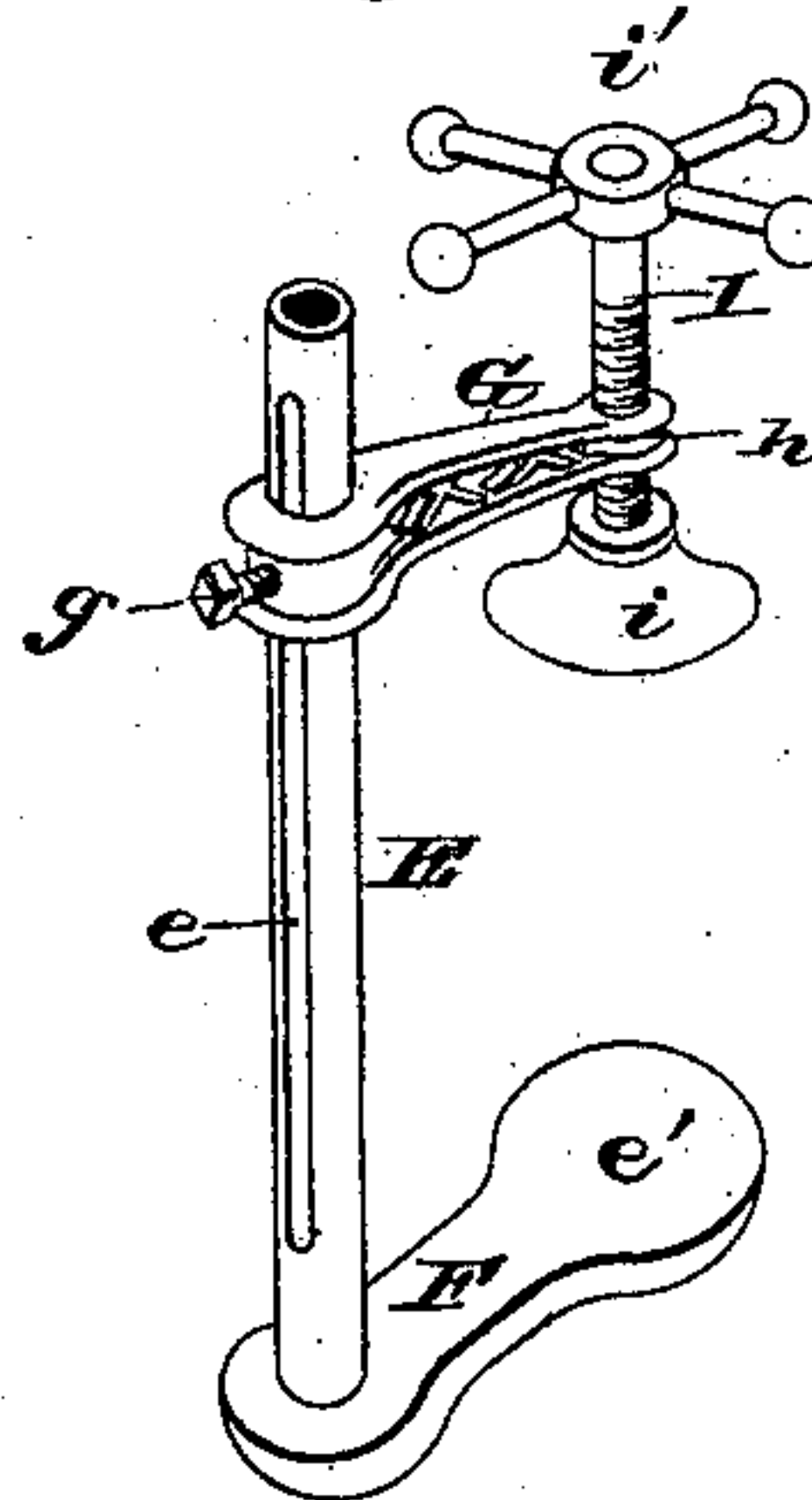
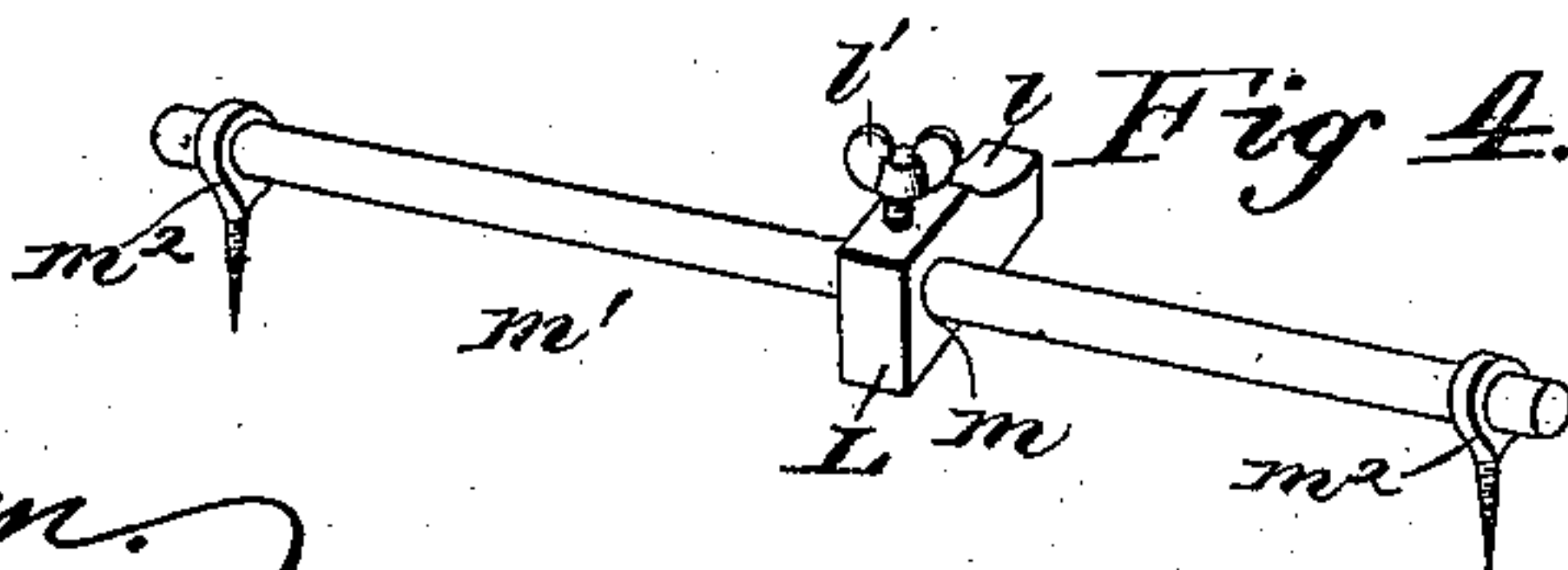


Fig 4.



Witnesses

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CLAMP OR PRESS.

SPECIFICATION forming part of Letters Patent No. 361,339, dated April 19, 1887.

Application filed June 4, 1886. Serial No. 204,174. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WALTER WEAVER, a citizen of the United States, residing at Ilion, in the county of Herkimer and State of New York, have invented a new and useful Improvement in Clamps or Presses, of which the following is a specification.

My 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 specifically pointed out in the claims.

In the accompanying drawings, which illustrate a clamp or press embodying my invention, Figure 1 is a perspective view of my clamp, showing the work assembled therein. Fig. 2 is a like view of the clamping mechanism, with the work therein, detached from the trough. Fig. 3 is an enlarged perspective view of the rigid and adjustable arms, together with the rock-shaft, detached from the trough. Fig. 4 is a detail view of the adjustable support for one of the arms.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the trough of my improved clamp or press, which, as shown herein, comprises the inclined side boards, B, arranged at substantially right angles to each other, with their lower edges out of contact, so as to provide an intermediate longitudinal slot, *a*, for the escape or passage of dirt and other foreign matter that may adhere to the work to be assembled and arranged in the trough. The side boards, B, of the trough are rigidly secured to and carried by the transverse end pieces, C, which are provided with depending feet *c*, to elevate the bottom of the trough out of contact with the table or other place on which it is supported, and the end pieces and side boards of the trough have secured to them inclined cleats or battens D, which project above the upper edges of the side boards for a short distance, the extreme upper ends of one pair of the battens D on one side of the trough being provided with recessed or cut-out portions *d*, which form or constitute the bearings for a rotatable shaft or carrying-rod, presently described.

The trough is normally arranged in a hori-

zontal position, as shown in Fig. 1, and rests on its legs, so that the work can be conveniently and readily assembled in due regularity therein; and the trough is adapted to be turned or elevated by the hand from a horizontal to an upright or vertical position, so that the work can be more conveniently manipulated by the operator.

E designates the rocking carrying shaft or rod, which is detachably journaled in the open-ended bearings *d* of the adjustable trough. This shaft is preferably in the form of a tube, as shown, and at one side it is grooved longitudinally, as at *e*. One end of the shaft carries an arm, F, that is arranged at right angles to the shaft and projects outwardly therefrom. The inner end of the arm is rigidly secured to one end of the shaft in any suitable manner, or it may be formed or cast integral with the shaft, and the outer end of the arm is enlarged to form a head, *e'*, which bears on one of the follower-boards of the press and clamp.

G designates the adjustable arm, which is arranged at the opposite end of the grooved shaft to the rigid arm, and the inner end of the adjustable arm is provided with a pin, *g*, that passes into the groove of the tubular shaft, so as to prevent accidental rotary movement of the said adjustable arm on the rock-shaft. The arm G extends or projects outwardly from the tubular shaft at right angles thereto, and the said arm is arranged in line with or in the same plane as the rigid arm F, toward and away from which the arm G is adjustable in the longitudinal groove of the tubular shaft. The rigid arm F is carried by and always occupies the same relative position to the tubular shaft, and as the pin *g* of the adjustable arm G is always fitted in the groove of the tubular shaft, the arm G is thereby prevented from rotating or turning on the shaft, and consequently it is always in the same relative position thereon and in line with the rigid arm, so that the work is clamped by the arms in direct lines. The arms F, G are thus carried by the tubular shaft, and the shaft can be turned or oscillated in its bearings so that the outer or free ends of the arms are caused to describe an arc of a circle, and thus act upon work of different sizes or dimensions. The

arms of the shaft are substantially equal in length, and the longitudinally-adjustable arm is provided with an interiorly-threaded opening or bearing, *h*, at its free outer end, in which works a clamping-screw, *I*, that is provided at one end with an enlarged head or disk, *i*, and at its opposite end with a hand wheel or piece, *i'*, for its convenient and easy rotation or manipulation by the hand of the operator.

J and *K* designate the follower boards or pieces, which are arranged to fit snugly between the right-angled squaring-boards of the trough and at opposite ends thereof. These boards can be moved or adjusted freely and longitudinally of the trough, and they are interposed between opposite ends of the work and the binding-arms, the board *J* having the outer end of the rigid arm *F* bearing against the same, and the board *K* having the head *i* of the clamping screw *I*, carried by the adjustable arm *G*, bearing against the same. The follower-boards are adjustable longitudinally of the trough to accommodate work of different lengths, and one of the boards, *K*, is provided at each end with transverse battens *j'*. The board *J* is provided at one end with one of the battens *j'* and at its opposite end with legs *k*, to support the said board, the shaft, the arms, and the work when they are detached from the trough and turned to a vertical position, as shown in Fig. 2 of the drawings.

The follower-board *K*, at the end of the trough at which the adjustable arm *G* is located, is provided with an adjustable support or block, *L*, which is provided at its outer free end with a curved or rounded portion, *l*, which fits snugly around the arm *G*, and serves as a support thereto in its adjusted positions. Ordinarily the impact or force of the binding or clamping screw *I*, carried by the adjustable arm, on the follower-boards and the work is sufficient to retain the arms and shaft in their proper positions relative to the work clamped therein; but in some instances it is desirable or may be found necessary to support the arms and shaft by an independent device, and hence I provide the adjustable support *L*. The opposite end of the support *L* is provided with an opening, *m*, through which passes an inclined rod or bar, *m'*, which is secured at its ends in eyes *m²* or other suitable means secured on and carried by the adjustable follower-board *K*. The adjustable support *L* is further provided with a binding-screw, *n*, which works in a threaded opening therein and bears on the rod *m'*, and when the arm *G* is adjusted to assume a different position relatively to the follower-board *K* and the work the thumb or binding screw is released to permit the support to be adjusted in the required direction to engage the arm *G* and aid in sustaining the latter in place, the binding-screw being tightened to clamp the support on the rod against movement.

This being the construction of my improved press or clamp, the operation thereof is as follows:

The trough occupies a horizontal position with the shaft in the open bearings and the follower-boards in the ends of the trough. The work is now placed in the trough between the follower-boards and assembled in due order by the operator, the arrangement being facilitated and aided by the right-angled disposition of the squaring-boards. After the work has been duly arranged, one or both of the follower-boards are moved or adjusted in the trough to bear against the work therein, and the rock-shaft is turned or oscillated in its bearings by hand, to cause the binding-arms *F* *G* to assume a position in which they can bear upon the follower-boards at the proper point. The rigid arm *F* bears against the follower-board *J*, and the adjustable arm *G* is moved or adjusted longitudinally of the rock-shaft to bear upon or against the follower-board *K*, so that the binding-screw *I* will press the follower-board *K* toward the board *J*, and thus compress the work between the two boards. The work is thus compressed and held between the two follower-boards and the binding-arms, and the trough is now inverted by hand or turned upon one end, so that the follower-board *J* is lowermost, and is elevated out of contact with the table or other place on which the clamp or press is supported by means of the batten *j'* and the legs *k*. The rigid arm *F* lies between the legs *k* and beneath the board *J* when the device is thus inverted, as above described, and the work rests on the board *J*. The trough is now swung or turned away from the work, the shaft, and its arms, and is entirely disconnected from the same, leaving the shaft, its arms, and the work exposed, as shown in Fig. 2 of the drawings, so that free and ready access can be had to all sides of the work, to permit the necessary manipulations or operations to be performed thereon without hinderance from the trough, which is very desirable. In this position the work is very convenient to the operator to manipulate—as, for instance, in binding tablets, the glue or other composition is applied to the edges of the leaves and the work is permitted to remain in a compressed condition between the arms until the composition has thoroughly dried and hardened, after which the clamping-screw is released, the work removed, and the shaft, its arms, and the follower-boards again adjusted in their proper positions in the trough to receive more work of similar or different character.

Although I have described and shown my improved clamp or press as adapted for use in assembling and binding tablets, still I would have it understood that I do not confine myself to the use of my invention in any particular art, and, further, that it can be used to arrange and compress different classes of work and adjusted so that the work will be held and brought into a position more favorable to the manipulations of the operator.

Changes in the form and proportion of parts and details of construction herein shown and

described as an embodiment of my invention can be made without departing from the principle thereof.

5 The ends of the trough are left open, so that the arms can readily come in contact with the squaring-boards and describe an arc of a circle with the shaft as a center, when the latter is turned or rotated, without hinderance from the trough.

10 By making the arm G adjustable longitudinally of the trough and providing it with the binding-screw, the operation of clamping the work can be almost instantly performed, as the arm can be rapidly adjusted in the groove of the tubular shaft and the clamping-screw quickly turned to compress the follower-boards and the work between them.

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

1. In a clamp or press, the combination of a trough having the open bearings at one side, a rock-shaft journaled in and removable from the bearings of the trough, the binding-arms carried by the shaft and arranged in line with each other thereon, one of said arms being adjustable toward and away from the other on the said shaft, and a clamping-screw carried by one of the arms, substantially as described, for the purpose set forth.

2. In a clamp or press, the combination of a trough, a shaft supported on the trough and carrying a rigid arm, an adjustable arm, also carried by the shaft, and a binding-screw carried by one of the arms, substantially as described.

3. In a clamp or press, the combination of a trough, a shaft supported on and removable from the trough, the rigid and adjustable arms carried by and adjustable with the shaft and arranged in line with each other at all times, and a binding-screw carried by one of the arms, substantially as described.

4. In a clamp or press, the combination of a trough, a rock-shaft journaled therein, the arms carried by the shaft and describing an arc of a circle with the shaft as a center, and a binding-screw carried by one of the arms, substantially as described.

5. In a clamp or press, the combination of

an open-ended trough, a rock-shaft journaled in the trough, a rigid arm carried by the shaft at one end and arranged exterior to one of the ends of the trough, an adjustable arm, also carried by the shaft and working in the trough, and a binding-screw carried by the adjustable arm, substantially as described, for the purpose set forth.

6. In a clamp or press, the combination of an open-ended trough having the sides thereof arranged at right angles to each other, a rock-shaft journaled in the trough on one side thereof and removable therefrom and having the longitudinal groove, a rigid arm carried by the rock-shaft at one end, an adjustable arm fitted on the rock-shaft and having a pin fitting in the groove thereof, and a binding-screw working in the adjustable arm at its free end, substantially as described, for the purpose set forth.

7. The combination of a trough, a shaft journaled therein on one side, the rigid and adjustable arms at opposite ends of the shaft and carried thereby, and the follower-boards intermediate of the arms and the work to be held thereby, one of the said boards having the projecting feet, substantially as described.

8. The combination of a trough, the shaft journaled therein, the arms carried by the shaft, a clamping-screw supported in one of the arms, the follower-boards, and an adjustable support mounted on one of the follower-boards and adapted to engage one of the arms, substantially as described.

9. The combination, in a clamp or press, of a trough, a shaft journaled therein, the rigid and adjustable arms carried by the shaft, a binding-screw supported in the adjustable arm, the follower-boards, a rod supported on one of the said follower-boards, and an adjustable support for one of the arms fitted on the rod and having a binding-screw, all arranged and combined substantially as described.

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

GEORGE WALTER WEAVER.

Witnesses:

J. T. McMILLAN,
D. LEWIS.