2 Sheets--Sheet 1.

J. E. COFFIN.

Power-Press.

No. 165,306. Patented July 6, 1875.

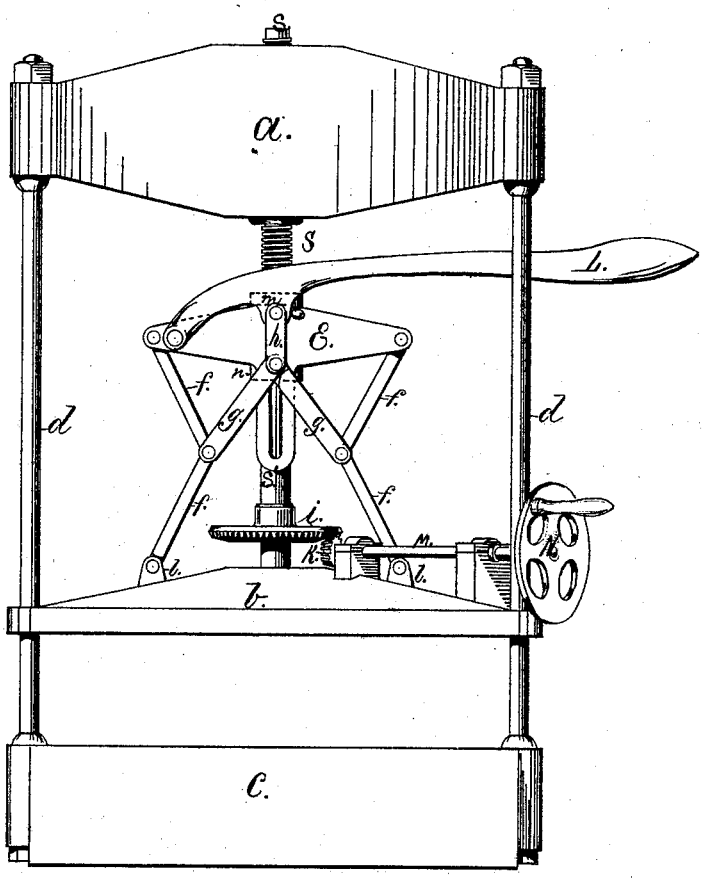

FIG. 1.

WITNESSES

Thomas F. Cosgrove

J. C. B. Woods.

INVENTOR

John E. Coffin.

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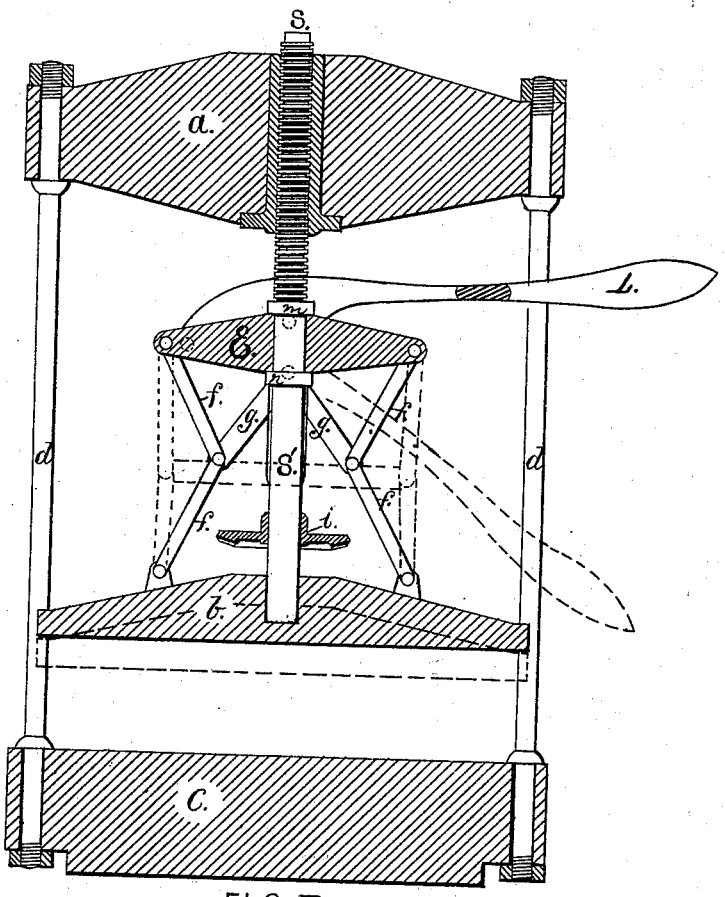

FIG. II.

WITNESSES

Thomas L. Cosgrove

J. C. R. Woods

INVENTOR

John E. Coffin

UNITED STATES PATENT OFFICE.

JOHN E. COFFIN, OF MYSTIC RIVER, CONNECTICUT.

IMPROVEMENT IN POWER-PRESSES.

Specification forming part of Letters Patent No. **165,306**, dated July 6, 1875; application filed June 17, 1875.

To all whom it may concern:

Be it known that I, JOHN E. COFFIN, of Mystic River, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Power-Presses; and I do hereby declare that the following specification, taken in connection with the drawings, is a full, clear, and exact description thereof.

Figure 1 is a front elevation of my improved press. Fig. 2 is a vertical section of the same.

My invention consists in combining, with the adjustable platen of what would otherwise be a simple screw-press, a means for giving an extended movement, through levers, to the platen, beyond the movement given by the screw, whereby the platen can be readily adjusted to any thickness of mass required to be pressed, and a compress be obtained by the screw in the ordinary way, while, in addition, all the advantages incident to a powerful lever-action press are always at hand, if desired.

Referring to the drawings, *a* is the head-block of the press, which is connected to the foot-block or bed *c* by the six strong brace-rods or columns, *d*. The platen is shown at *b*, and is arranged to slide up or down the rods *d* by means of a powerful screw, S, which works in a nut set in the head-block *a*, and, as such screw is turned to the right or to the left, lowers or raises the platen.

For convenience of operation, in this machine a large bevel-gear wheel, *i*, is keyed to the screw-spindle, and a small bevel pinion-gear, *k*, engaging therewith, is worked by a shaft, M, mounted in bearings on the back of the platen, which latter is operated by a hand-wheel, N, or other convenient means for giving power. The machine, thus far, is substantially an ordinary screw-press.

For the purpose of giving an extended movement to the platen beyond that which it obtains from the screw-spindle, and for making available the power resulting from a combination of levers, I combine with the press, as above described, the following auxiliary organism: E is a supplemental head-block, which is set loosely on the screw-spindle S′, and bears on the upper side against a shoulder, *m*, and is held up by a collet, *n*. This head-block is connected with the platen *b* by means of the toggle-jointed levers *f f*, as shown. The knuckle-joint pivots of the toggle-levers are connected by means of the two sets of horizontal toggle-levers *g g*, and these latter levers are connected by links *h* with the hand-lever L, whose fulcrum is on the supplemental head-block E.

It will be evident from the foregoing description, and from the drawings to which the same relates, that upon the application of power to the lever L, an immense force will be exerted upon the platen by the system of compound toggle-jointed levers *f f g g*, and as the platen is free to move on the spindle S′, for the reason that it is supported on the spindle by the head-block E, it follows that the platen will be moved toward the bed-block through a distance, and with a power depending upon the range of action of the toggle *f f*.

A press thus constructed, embodying all the convenience and range of movement of a screw-press, with all the capacity for exerting the force of a toggle-lever press, possesses marked advantages over a simple screw or a simple lever press, for the reason that it combines in one machine all the best qualities of both such description of presses.

In practice, the screw S is used mainly for adjusting the platen to the thickness of the article or material to be pressed, and the compress is obtained from the lever combination.

While I prefer to employ a compound toggle-jointed lever arrangement—that is to say, the toggle-levers *g g*, in combination with the toggle-levers *f f*—I consider that any other auxiliary lever organization for developing power, combined with the platen *b* and screw S, or any substitute for the levers *g g*, for working the toggle-levers *f f*, would be within my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a screw-press, substantially as described, of an auxiliary lever-press, whereby an extended movement can be given to the platen to effect a compress, substantially as specified.

2. The combination, with the head-block E

and platen *b*, of the compound toggle-jointed levers *f f g g* and operating-lever L, substantially as described.

3. The combination, in a power-press, of the adjustable platen *b*, the screw S, the supplemental head-block E, and the toggle-jointed links *f f*, operated by suitable mechanical means, substantially as described.

4. The combination of the platen *b*, the driving-pinion *k*, supported by the platen, the gear-wheel *i*, and the screw S, substantially as described.

JOHN E. COFFIN.

Witnesses:

THOMAS F. COSGROVE,

J. C. B. WOODS.