G. EASTMAN.

PRESS.

No. 173,603. Patented Feb. 15, 1876.

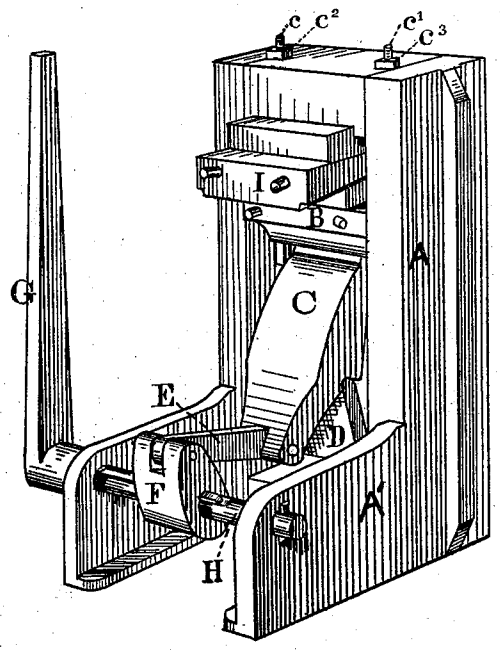

Fig. 1.

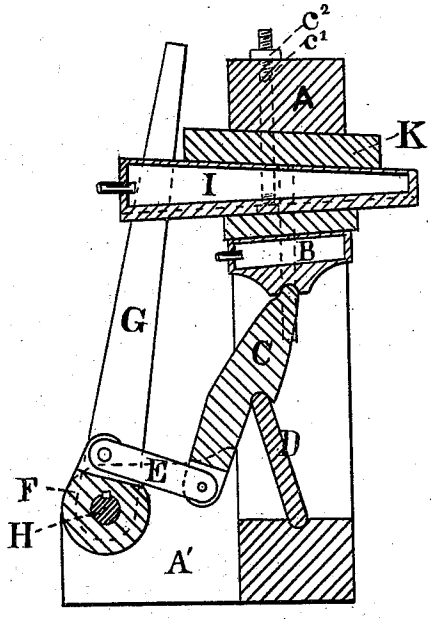

Fig. 2.

WITNESSES

Alden Wilder

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GEORGE EASTMAN, OF NEWTON, MASSACHUSETTS.

IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. **173,603**, dated February 15, 1876; application filed December 13, 1875.

To all whom it may concern:

Be it known that I, GEORGE EASTMAN, of Newton, Massachusetts, have invented an Improvement in Presses, of which the following is a specification:

This invention has for its object the combination of a powerful pressure, a simple construction, and an easy adjustment for varying thicknesses of work.

Reference is had to the accompanying drawing, forming a part of this specification, in explaining the same, in which Figure 1 is a perspective of the press, and Fig. 2 is a vertical section of the same.

The frame A, supporting the operative parts of the press, is of cast-iron, made massive and heavy when the nature of the work so requires, and provided with ways, furnishing guides for directing the movement of the jaw B in its vertical motion thereon when operated by the compound toggle C D E, crank F, and lever G. The base of the frame projects, as shown at A′, and furnishes the supports for the journals of the shaft H, which is operated by the lever G, and carries the crank F.

The entire frame is made at one casting. Adjustments for varying-sized molds or differing thicknesses of work is effected by the wedge-shaped key I and block K held against the top of the frame by the headed rods c c^1 and nuts c^2 c^3. The under surface of the key I, forming the upper jaw of the press, is recessed along the sides parallel with and adjacent to the under surface to receive the heads of the rods c c^1. The cross-bar or top of the frame is cut away on the surface next adjoining the block K to correspond in slope with the slope of the upper surface of the key, and of a width sufficient to allow the insertion of block K.

The jaw and key may be made hollow, as shown, and provided with holes for the introduction and escape of water.

The toggle is so constructed that the links C D are vertical at the moment of the greatest pressure, and retains that position without any strain on the lever.

The method of operation is as follows: The required thickness of the work is ascertained, and the key adjusted for that thickness by insertion or withdrawal to lessen or increase the distance between it and the jaw, as the case may be. If a greater space is needed than that supplied by withdrawing the key to its minimum point of efficiency, a thinner block may be used, and if necessary the block may be withdrawn. Of course it will readily be seen that the rods holding the wedge are shortened or lengthened, as circumstances require.

The strength of the parts composing the toggle motion is so proportioned to the strength of the housings that some one of them will break before sufficient pressure is exerted to injure the housing or frame. The crank F, or link E, or toggle-lever C should thus be made; as, for instance, if the press be intended to exert a pressure of ten tons, the breaking strain of some one of these parts should be made very slightly in excess of ten tons, while the strength of the housing should be made much greater, so that the ultimate pressure desired should be within the "factor of safety," while the strain on the weakest part should always be approximated to the ultimate strength, and this should be selected as the one most easy to get at, which is generally the crank.

This arrangement of parts gives particular facility for the repairing of the press, and no danger could exist from the breakage of crank, link, or toggle-lever, as each is secured at one end, and the danger from flying fragments, caused by the overstraining and rupture of the housing or frame, is averted.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a press, the combination of the bed-plate I and housing K, having opposite inclines on their contacting surface by means of the rods and nuts c c^1 c^2 c^3, substantially as and for the purpose described.

2. The combination of the upright housing A, rising and falling bed B, the lifting-toggle C D, link E, and lever G, when constructed to concentrate a crushing strain upon the crank or link, all arranged and operating together, substantially as and for the purpose described.

GEORGE EASTMAN.

Witnesses:
ALDEN WILDER,
F. F. RAYMOND.