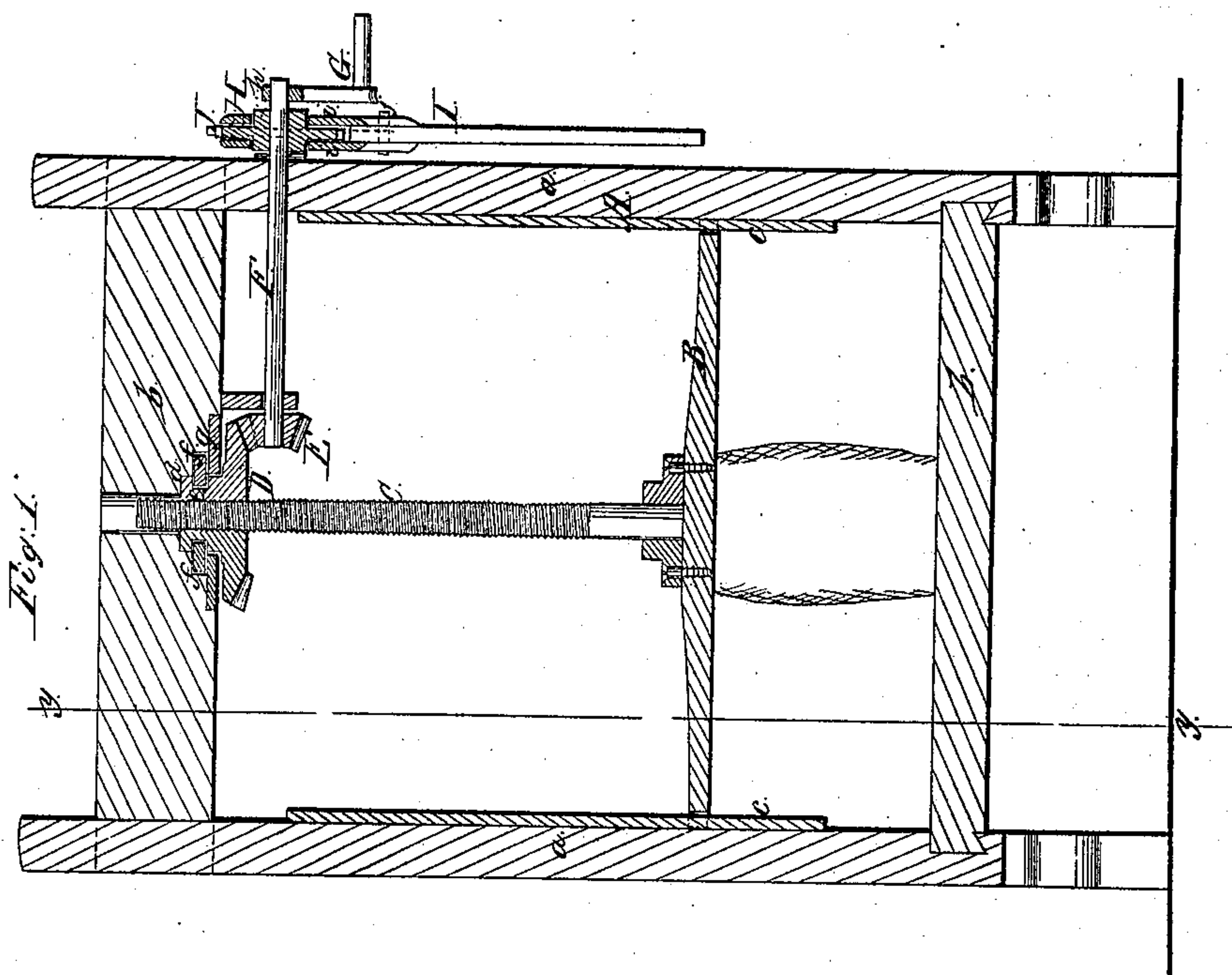
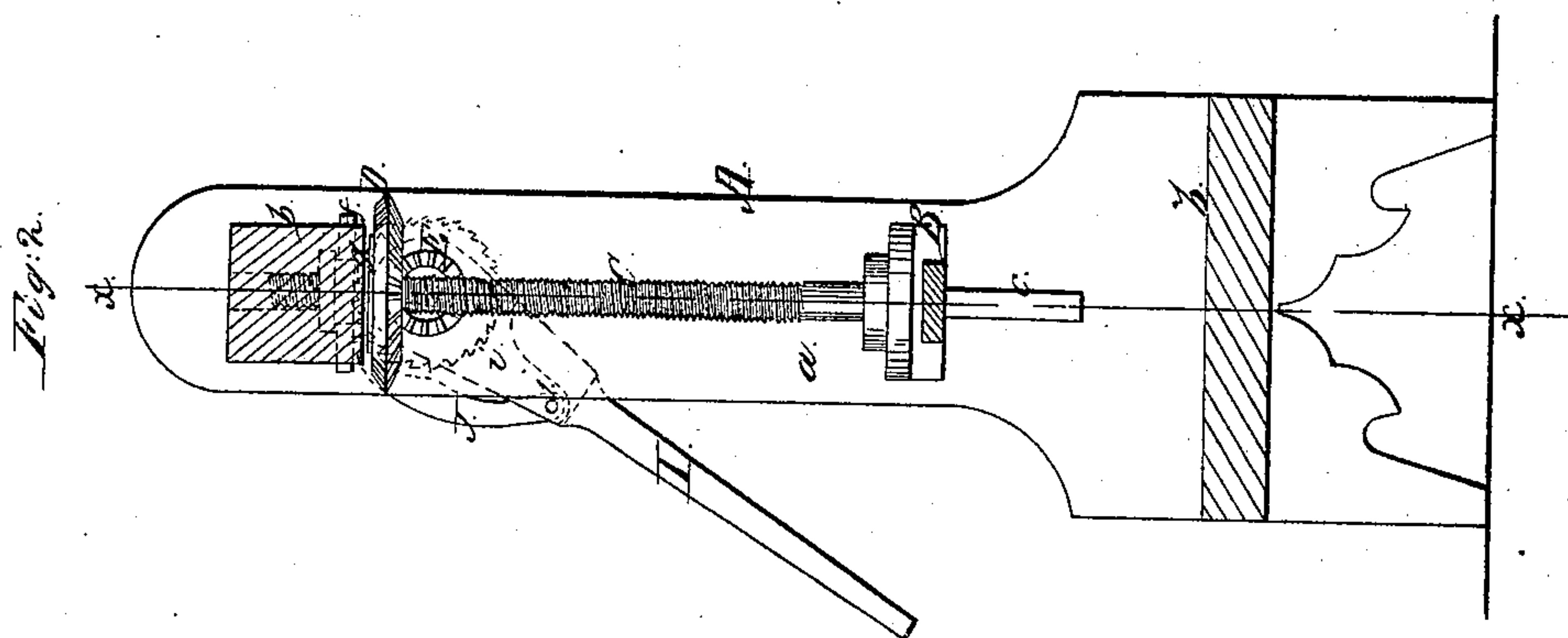


Gardner & Manning,

Cotton Press.

N^o 34,750.

Patented Mar. 25, 1862.



Witnesses;
J. Loombs.
Geo Reed.

Inventors:
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UNITED STATES PATENT OFFICE.

DANIEL S. GARDNER AND N. A. MANNING, OF GREENE, NEW YORK.

IMPROVEMENT IN PRESSES FOR COMPRESSING AND BALING.

Specification forming part of Letters Patent No. 34,750, dated March 25, 1862.

To all whom it may concern:

Be it known that we, DANIEL S. GARDNER and NORMAN A. MANNING, both of Greene, in the county of Chenango and State of New York, have invented a new and Improved Press for Compressing Substances for Baling and other Purposes; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical section of our invention, taken in the line *xx*, Fig. 2; Fig. 2, a vertical section of the same, taken in the line *yy*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

The object of this invention is to obtain a screw-press of simple construction, which will admit of having its follower or plunger operated with a rapid movement while being adjusted to and from its work, and at the same time have its follower or plunger, when applied to or in contact with its work, capable of being operated with a comparatively-slow speed and a proportionate increase of power, thereby economizing in time where power is not required, while the power is obtainable and applied only when necessary. To this end we employ a combined nut and toothed wheel, screw, pinion, and a crank-shaft provided with a fixed ratchet and a loose lever fitted thereon, and having a pawl attached, all being arranged as hereinafter fully shown and described.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A represents a vertical framing, which supports the working parts of the press, and which may be formed of two uprights, *aa*, connected by cross-ties *bb*, the latter forming a support for the article to be compressed.

B is a follower or plunger, the ends of which are fitted or work on vertical guides *cc*, attached to the inner sides of the uprights *aa*; and C is a vertical screw, which is attached centrally to the upper surface of the follower or plunger B and passes loosely through the center of the upper cross-tie, *b*, of the framing A, as shown clearly in Fig. 1. The screw C is not allowed to rotate, it being fixed on the follower or plunger B.

D is a combined nut and toothed wheel, which is fitted in the under side of the upper cross-tie, *b*, of the framing, and is allowed to rotate freely in a suspended state therefrom. This is effected by having the nut and wheel provided with a hub, *d*, which is fitted in the under side of the upper cross-tie, *b*, and has a groove, *e*, made circumferentially in it, in which keys *ff* are fitted, (see Fig. 1,) the under side of said cross-tie *b* being faced with a metal plate, *g*, to obviate abrasion or wear of the same. The teeth of the combined nut and wheel are on a beveled surface and gear into a bevel-pinion, E, on a horizontal shaft, F, in the upper part of the framing, the nut of the wheel, which is formed by an internal screw-thread at its center, being fitted and allowed to turn freely on the screw C. The outer end of the shaft F has a crank, G, upon it, and on said shaft, at a point near the crank, there is a fixed ratchet, H.

I is a lever, which is fitted loosely on a hub, *h*, of the ratchet H, so that it may turn freely thereon, the inner end of said lever being forked, slotted, or provided with side plates *ii*, to receive the ratchet, as will be understood by referring to Fig. 1.

To the lever I there is attached, by a pin, *j*, a hooked pawl, J. This pawl is allowed to turn freely on its pin *j*, so as to be capable of being adjusted to engage with the ratchet H, or be free from it, as may be desired. When the pawl J is free from the ratchet, the lever I hangs in a vertical position from shaft F.

The operation is as follows: The article or substance to be compressed is placed on the lower cross-tie, *b*, of the framing A, the follower or plunger B being elevated sufficiently to be out of the way, and in cases where necessary—as, for instance, where articles or substances are to be compressed for baling—a press-box may be placed on the lower cross-tie, *b*, the follower or plunger B being arranged to work within it. When the article or substance to be compressed is properly adjusted in position, the operator turns the crank G, and the nut and wheel D are thereby rotated through the medium of the pinion E, and the nut of the wheel D forces down the screw C, and consequently the follower or plunger B. When the follower or plunger B reaches or comes in contact with the article or substance to be compressed, the operator ceases to turn

the shaft E by means of the crank G, and employs the lever I, pawl J, and ratchet H, the pawl being adjusted so as to engage with the ratchet. These latter-named parts cause the shaft F to be rotated with a much slower speed than that produced by the direct application of the driving-power to the crank G; but as power is gained as speed is dispensed with or sacrificed, it will be seen that an increased pressing power may be obtained when required—to wit, when the follower or plunger is in contact with its work—the power being applied to the crank G in order to obtain a quick movement of the follower or plunger to and from its work previous to and after the pressing operation—movements in which much power is not required, but which are necessary to admit of the free or ready adjustment of the article or substance to be compressed to the press as well as to admit of its ready removal therefrom after compression.

This invention is well adapted for the pressing of cheese and other substances which require a gradual pressure, for when the lever I and pawl J are applied a weight may be

attached to the lever in order to give the pressing-power, said lever and weight being raised from time to time after descending a certain distance. In this latter gradual pressing operation the press is rendered nearly self-operating, as the lever I will require to be adjusted only at long intervals.

We do not claim separately any of the parts herein described; but

We do claim as new and desire to secure by Letters Patent—

The suspended nut and toothed wheel D and pinion E, placed, respectively, on the screw C of the follower or plunger B and crank-shaft F, and arranged to gear into each other, in combination with the fixed ratchet H on shaft F, and loose lever I, provided with the pawl J, all being arranged to operate as and for the purpose herein set forth.

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Witnesses:

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WM. TRACY.