2 Sheets--Sheet 1.

C. H. WESTON & J. DENNIS.

Pressure Gages for Presses.

No. 150,115. Patented April 21, 1874.

Fig 1

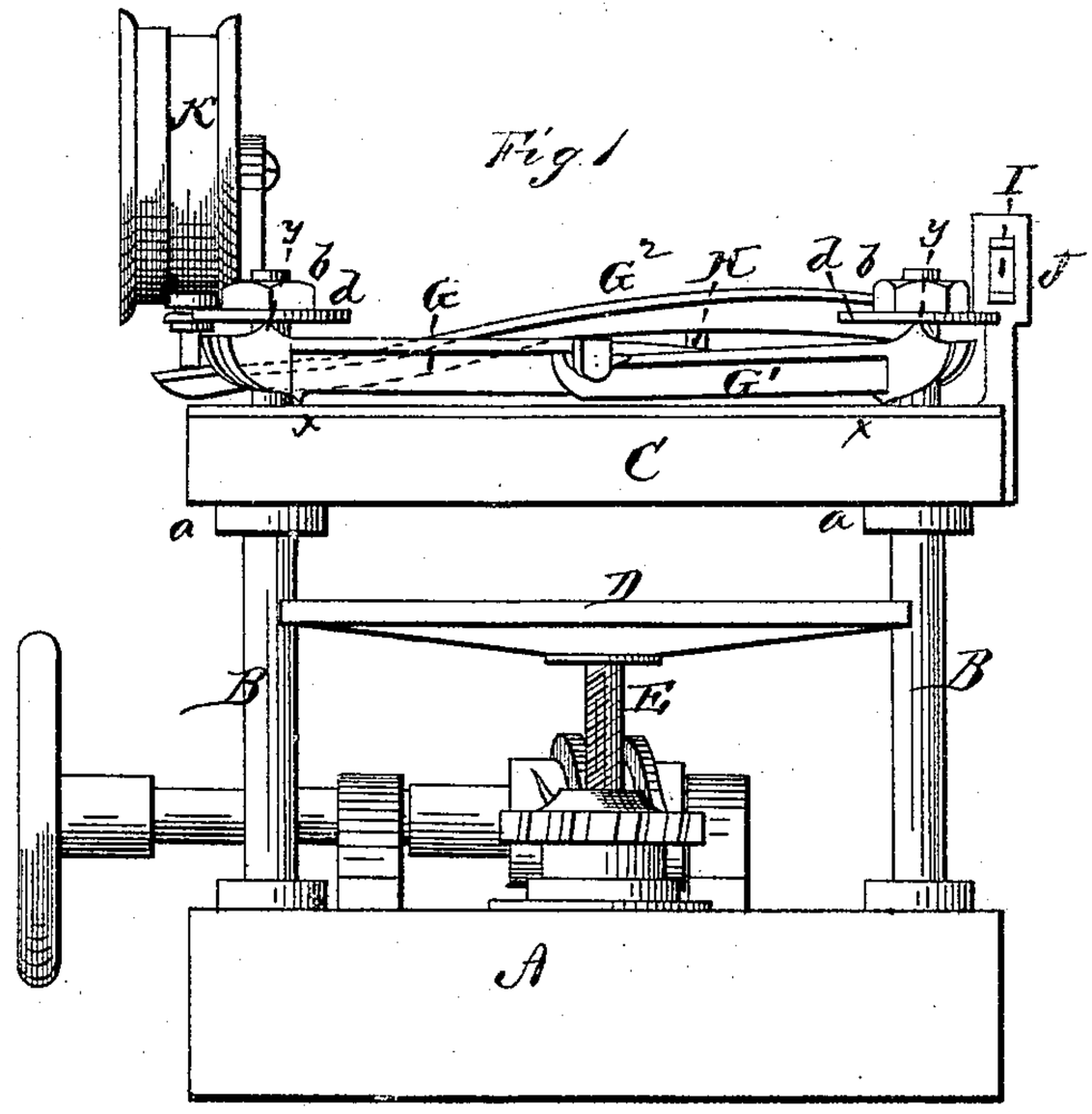
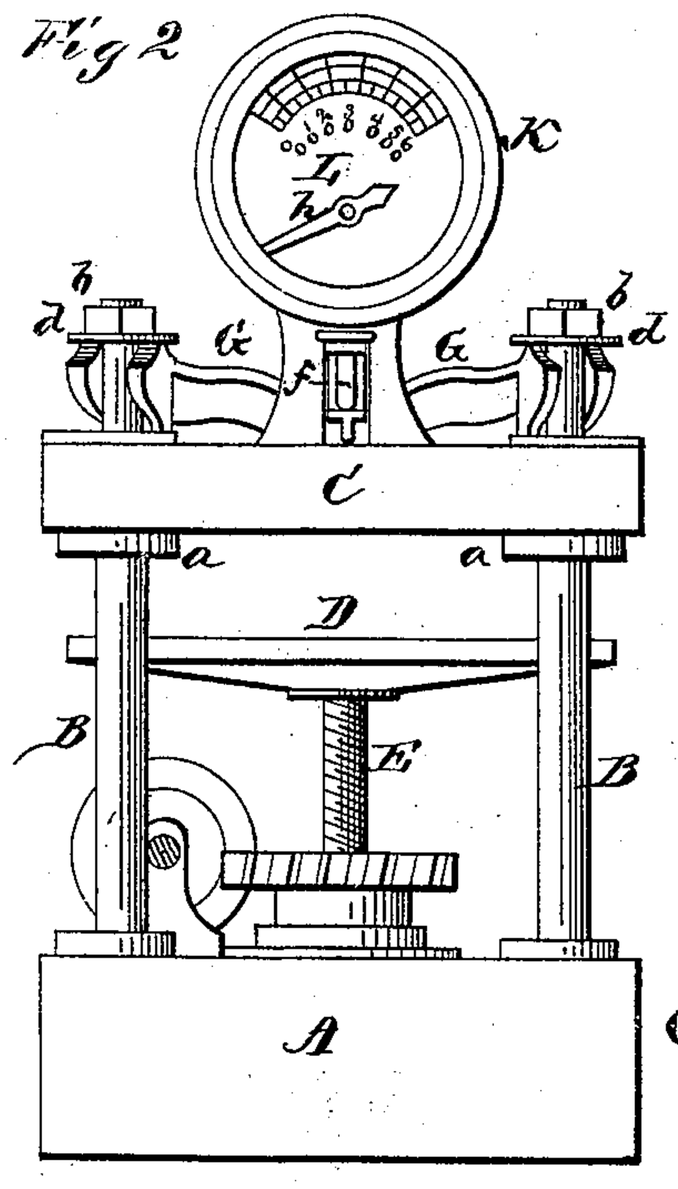


Fig 2



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2 Sheets--Sheet 2.

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Fig 3

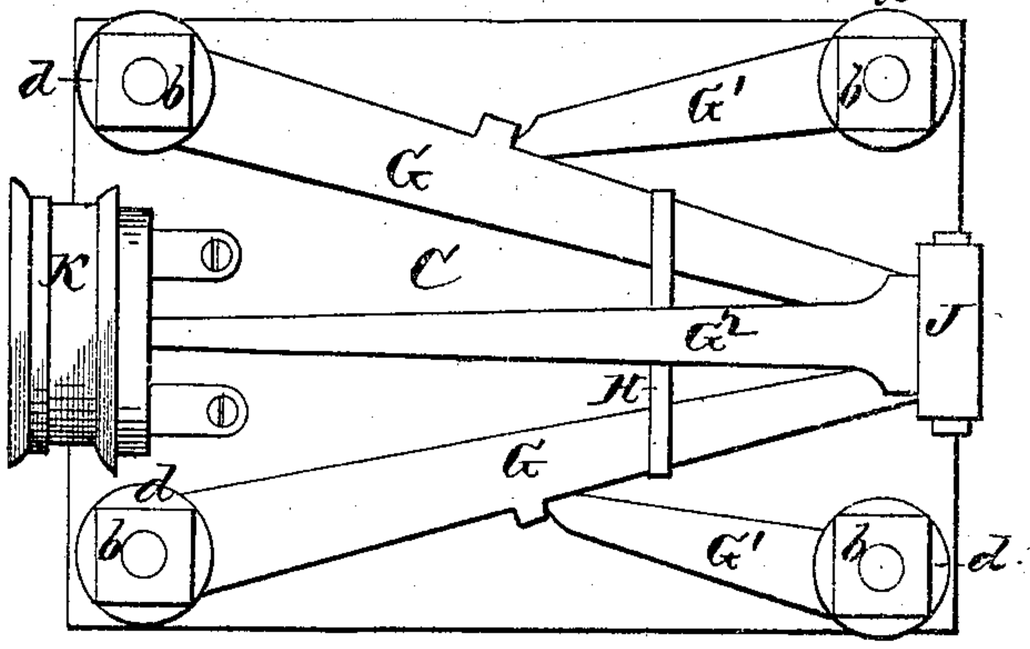


Fig 4

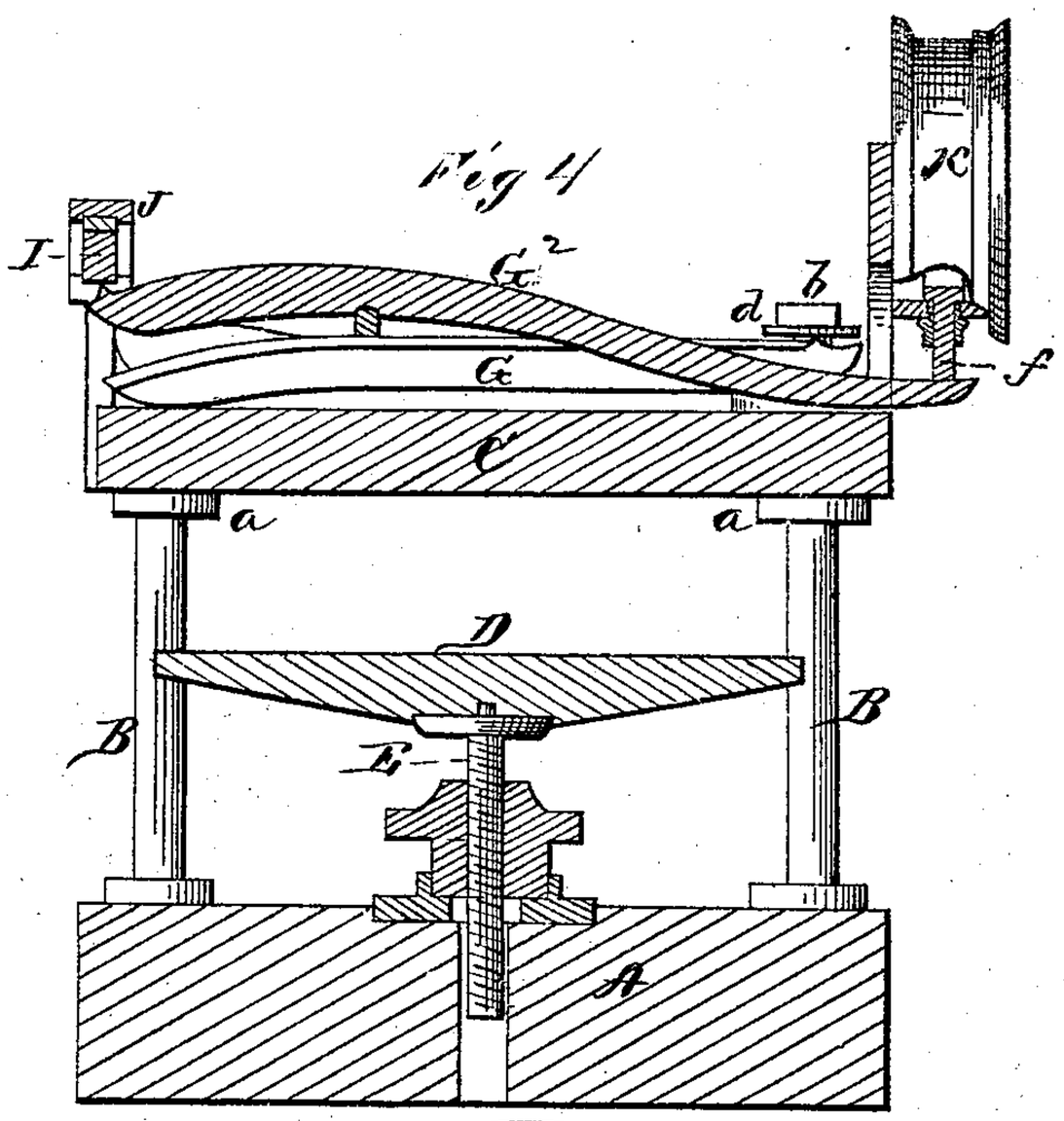
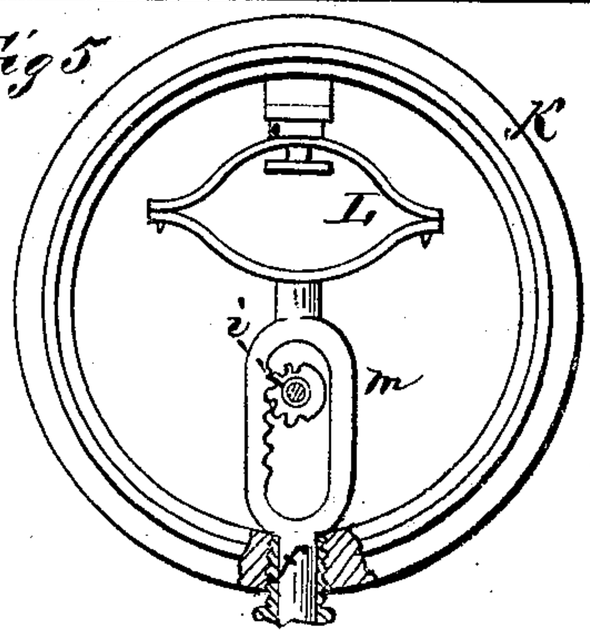


Fig 5



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UNITED STATES PATENT OFFICE.

CHARLES H. WESTON AND JOHN DENNIS, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN PRESSURE-GAGES FOR PRESSES.

Specification forming part of Letters Patent No. **150,115**, dated April 21, 1874; application filed December 8, 1873.

To all whom it may concern:

Be it known that we, CHARLES H. WESTON and JOHN DENNIS, of Lowell, in the county of Middlesex and in the State of Massachusetts, have invented certain new and useful Improvements in Presses; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

The nature of our invention consists in the combination, with a press, of a weighing mechanism, and indicator to show the amount of pressure, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side elevation of a screw-press embodying our invention. Fig. 2 is an end view; Fig. 3, a plan view; and Fig. 4 a longitudinal section of the same. Fig. 5 is an interior view of the indicator.

A represents the bed or base of a press with four corner-posts, B B, and top C. D represents the follower, with screw, E, to press the desired material. In a screw-press of the class shown, the top C rests upon collars *a a* on the corner-posts, and is held tightly down on the same by nuts *b b* or other suitable means. But in this case I interpose a weighing-lever between the top C and nut *b*. G G represent two of these levers at one end of the press, and G^1 G^1 the other two levers at the other end of the press. All these levers are slotted, to pass over or straddle the corner-posts, and are held down by a washer, *d*, and nut *b*. Each lever rests upon the top C by a knife-edge, *x*, at the inner side of the corner-post which it straddles, and the washer *d* bears down on a knife-edge, *y*, formed on the upper side of the end of the lever. The edge *y* is farther out than the edge *x*, so that when the pressure is applied on the under side of the top C the levers will turn on the edges *y y*, throwing their inner ends upward. The levers G G extend across the top, and their free ends come together near the other end of the press at the center, while the levers G^1 G^1 pass under the center of the levers G G, and are provided with knife-edges, upon which the latter rest. Across the levers G G, a suitable distance from their free ends, is secured a bar, H, which bears against the under side of a lever, G^2, the point of contact being a suitable knife-edge. The lever G^2 bears at one end by a knife-edge against a block, I, held in a frame, J, which is attached to the end of the top C over the free ends of the levers G G, while the other end of the lever G^2 bears against the lower end of a stem, *f*, to operate the indicator. K represents the indicator-case, with dial-plate L and hand or index *h*. Inside of the case is a slotted slide, *m*, cogged in the slot and operating a pinion, *i*, which is placed on the shaft of the index *h*. From the lower end of the slide *m* projects the stem *f* through a suitable box in the bottom of the case, and the slide is held down by a spring, P, of the required tension.

By this means the amount of pressure on the press can be seen at any time.

Though our invention is applicable to all kinds of presses, we have especially designed it for such presses as are used for pressing, baling, and finishing woolens, shawls, hosiery, delaines, silks, &c.

All these goods require a uniformity of pressure, and heretofore there has been no way by which such uniformity could be obtained. It has always been guess-work, and hence a very common complaint to the manufacturer of such goods is that they are pressed too much or too little, or are not uniform. For this reason it becomes very necessary to know what pressure is on the press when in use.

Supposing that the press is rated at three hundred and fifty tons. If there is no indicator to denote the pressure the operator is liable to run over that limit in using the press, and consequently break the press, often at a considerable expense for repairs.

In pressing cotton or woolen goods in bales, the indicator gives a uniformity of pressing and of appearance, not injuring the goods by over pressure.

In finishing woolens it is of the first importance to have a perfectly uniform pressing. For instance, it is desired to press every press-

ing of cassimeres of a certain weight per yard exactly the same power, say, seventy-five tons, which is about the pressure required for cassimeres, and the manufacturer runs on this class of goods one month; each pressing must have the exact pressure, otherwise the goods are not uniform in finish. The following month's pressing may be an entirely different class of goods, requiring two hundred and fifty tons pressure, as with delaines. This unformity is essential the year round. Also, with cotton and worsted hosiery it is necessary to have an equal and exact pressure.

There are no two kinds of goods that will allow of the same amount of pressing. Our invention, by denoting the exact pressure of every pressing, enables the manufacturer to get the uniformity of appearance upon his goods, so much desired and heretofore so seldom obtained.

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

The combination, with a screw-press, of a series of weighing-levers, G G^1 G^2, or their equivalents, and an indicator, L *h*, for the purposes herein set forth.

In testimony that we claim the foregoing, we have hereunto set our hands this 8th day of November, 1873.

C. H. WESTON.
JOHN DENNIS.

Witnesses:
J. LADD,
JAS. M. BATTLES.