# G. E. Harding,

# Cotton Press.

No. 45,711. Patented Jan. 3, 1865.

Fig: 1

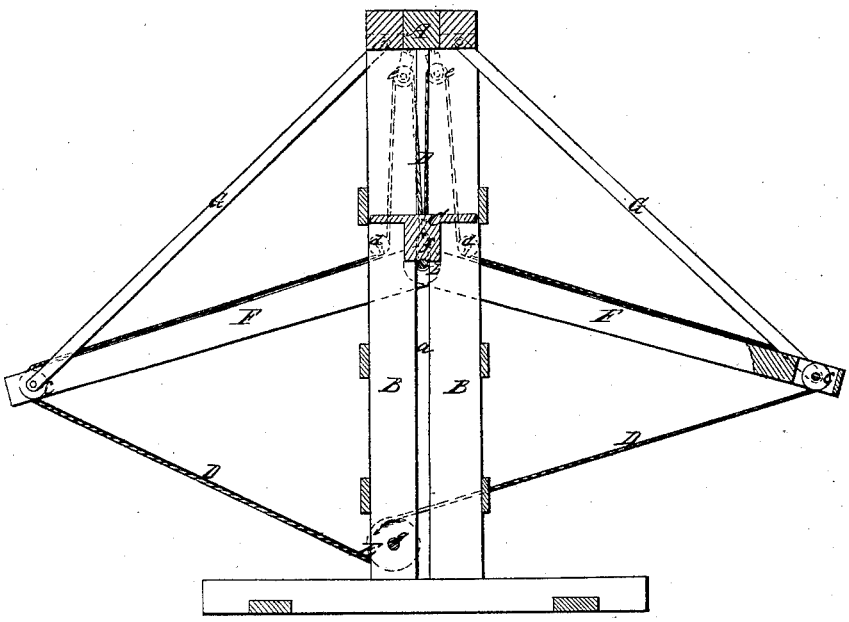
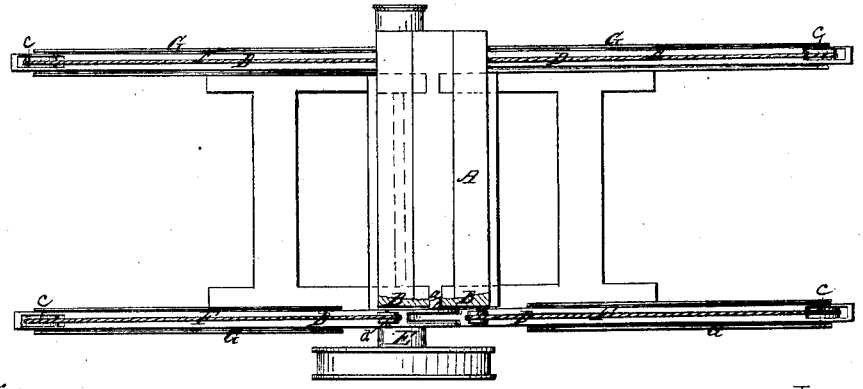


Fig: 2.



Witnesses.

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# UNITED STATES PATENT OFFICE.

G. E. HARDING, OF BATH, MAINE.

## IMPROVED PRESS.

Specification forming part of Letters Patent No. **45,711**, dated January 3, 1865.

*To all whom it may concern:*

Be it known that I, G. E. HARDING, of Bath, in the county of Sagadahoc and State of Maine, have invented a new and Improved Press; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a transverse vertical section of this invention. Fig. 2 is a sectional plan or top view of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a press in which two toggle-levers are connected to straps hinged to the frame and to the follower and operated by a windlass. The rope from the windlass extends over pulleys in the outer or loose ends of the toggle-levers, and along the upper edges of said levers through loops or under sheaves near their fulcra, up over sheaves fixed to the frame and down to straps secured to the rod which forms the movable fulcrum of said toggle-levers, in such a manner that a strain on the rope has a tendency to raise the follower and the inner ends of the toggle-arms, and at the same time to draw their loose ends together, and the follower is exposed to a powerful upward pressure.

A represents a frame, which is composed of four uprights, B, connected by suitable cross-bars and placed at such a distance apart that slots *w* are left to guide the ends of the rod *b*, which forms the fulcrum for the toggle-levers F. This rod is connected to the under surface of the follower C, which moves up and down between the uprights, and in a press-box. (Not shown in the drawings.) The outer or loose ends of the toggle-arms F are supported by straps G, which are hinged to the top cross-bars of the frame A, and said toggle-arms are operated by ropes D, which pass from a windlass, E, over pulleys *c* in the ends of the levers F, thence through loops or under sheaves *d* near the inner ends of said levers and over sheaves *e*, which are secured to the top cross-bars of the frame, and finally down to straps *f*, attached to the ends of the fulcrum-rod *b*, as clearly shown in Fig. 1 of the drawings. The windlass E is secured to a shaft, *g*, which extends through the lower parts of the uprights B of the frame, and by revolving it in the direction of the arrow marked on it in Fig. 1 a strain is exerted on the ropes D, which has a tendency to draw in the loose ends of the levers F, and at the same time the strain in that portion of the ropes which extends from the sheaves *e* down to the straps *f* has a tendency to raise up the follower. At the beginning of the operation this latter strain is principally active, and the material to be compressed is exposed to a slight pressure; but as the operation proceeds the levers F are gradually closed up, and the force acting on the follower increases until the material on the same is compressed to the desired degree.

The operation of this press is very simple. It can be operated by hand, steam, horse, water, or any other suitable power, and all its parts are so constructed that they are not liable to get out of order.

I claim as new and desire to secure by Letters Patent—

1. The toggle-levers F, having their fulcra on pivots projecting from the ends of the follower, and applied in combination with straps G, and with a rope or chain extending from a windlass over pulleys in the loose ends of said levers and through loops or pulleys attached to said levers near their fulcra, thence over pulleys fixed to the frame and down to the fulcrum-pins of the levers, substantially in the manner and for the purpose set forth.

2. The straps G, hinged at one of their ends to the frame A, and at their opposite ends to the loose ends of the levers F, in combination with said levers and with the follower and windlass, constructed and operating substantially as and for the purpose described.

G. E. HARDING.

Witnesses:
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