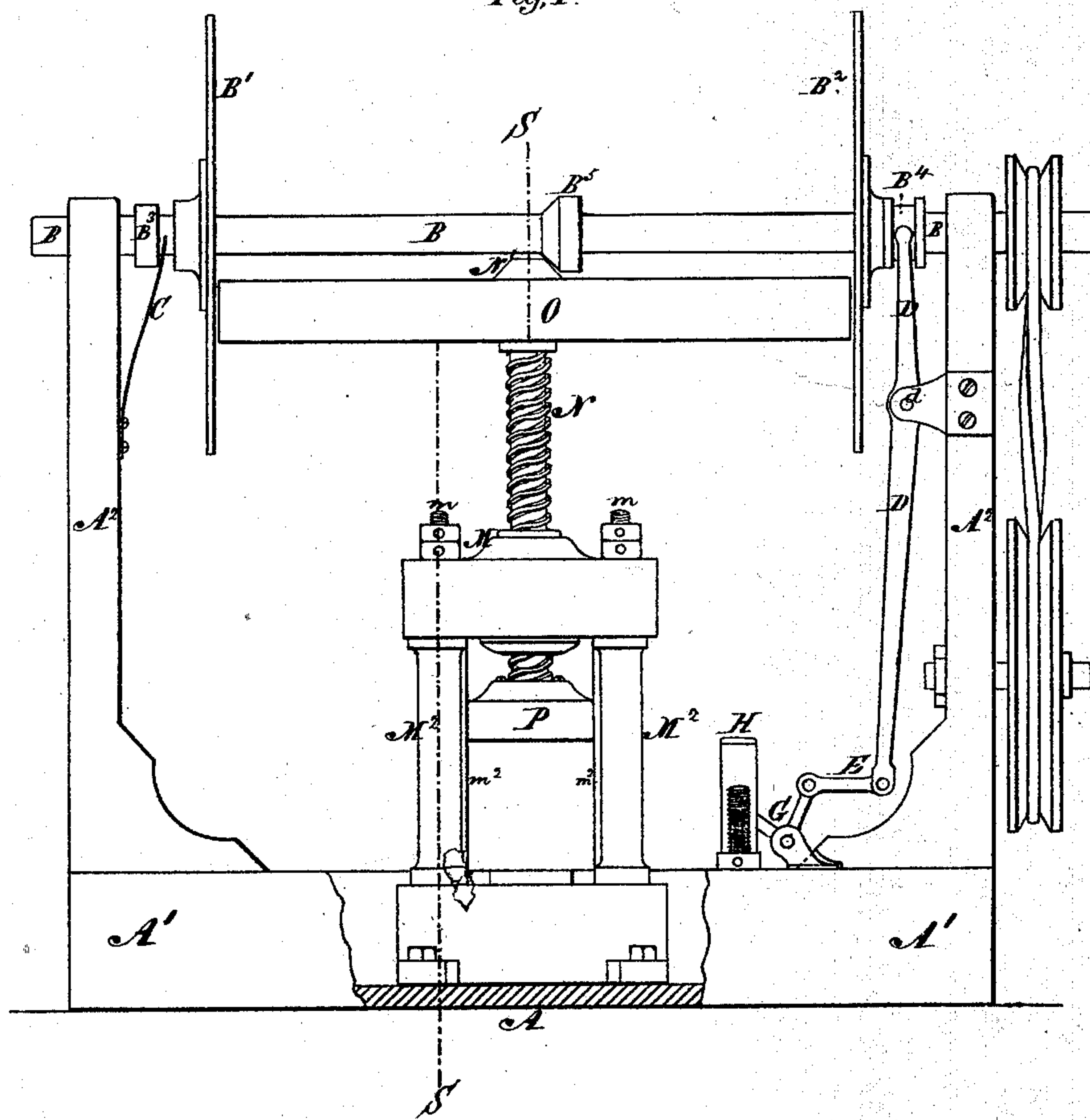


J. DEBEAUVAIS.
Cotton-Presses.

No. 146,808.

Patented Jan. 27, 1874.

Fig. 1.



Witnesses,

Inventor,

Alfred Westbrook

Arnold J. Corinam.

Jules Debeauvais
by his attorney
T. J. Stetson,

J. DEBEAUVAIS.
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Fig. 2.

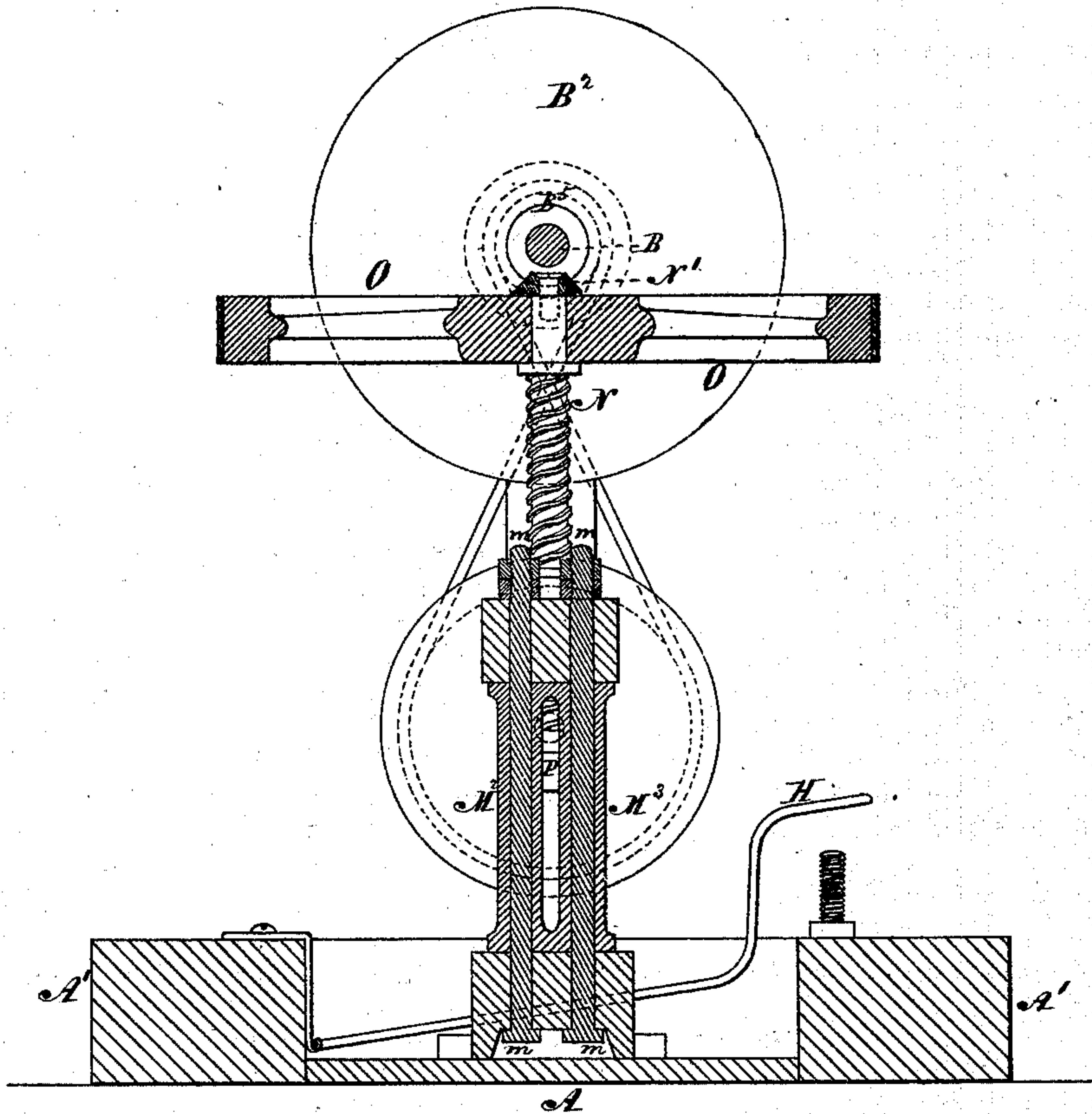
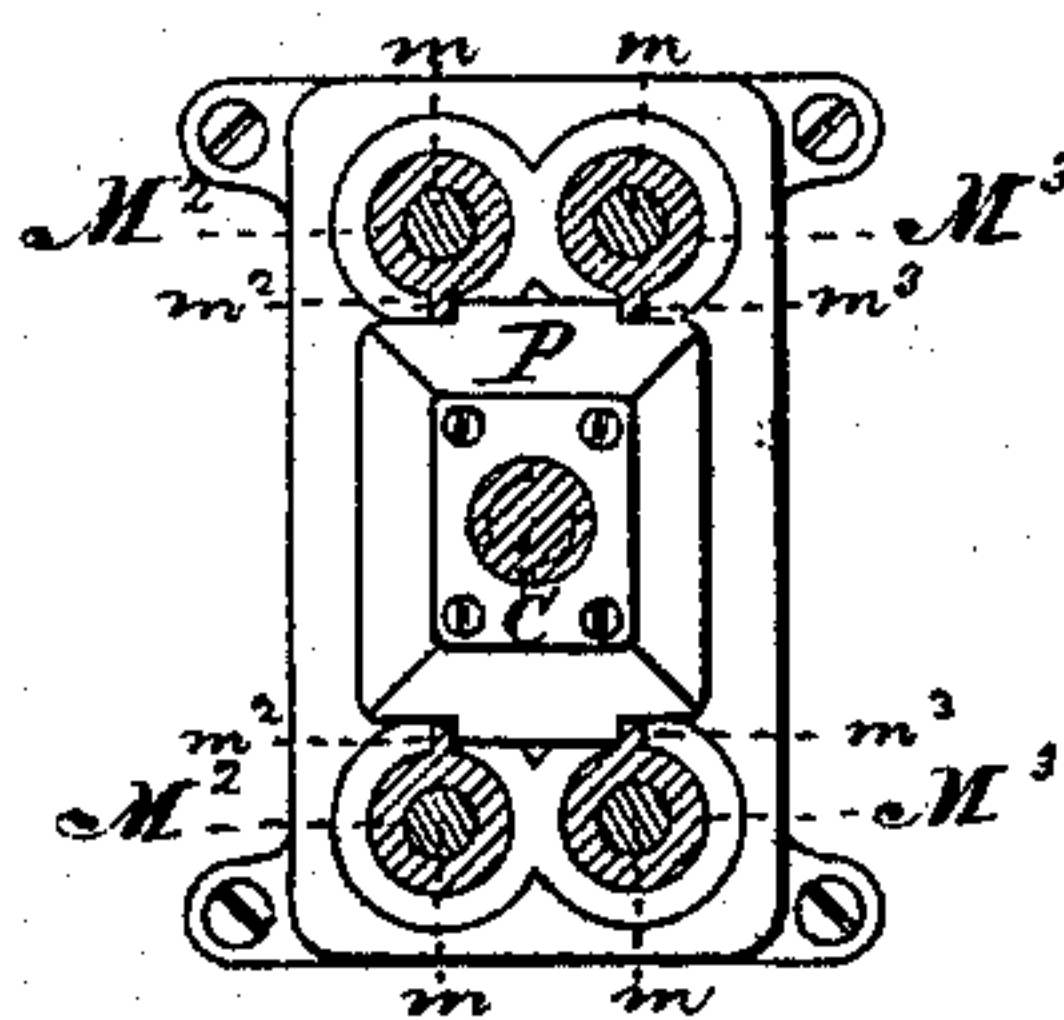


Fig. 3.



Witnesses,

Alfred M. Brooks

Arnold Hornum.

Inventor,

Jules Debeauvais
by his attorney
F. S. Latham

UNITED STATES PATENT OFFICE.

JULES DEBEAUVAIS, OF NEW YORK, N. Y.

IMPROVEMENT IN COTTON-PRESSES.

Specification forming part of Letters Patent No. **146,808**, dated January 27, 1874; application filed July 31, 1873.

To all whom it may concern:

Be it known that I, JULES DEBEAUVAIS, of New York city, in the State of New York, have invented certain Improvements Relating to Presses, of which the following is a specification:

The improved press may be operated rapidly and powerfully, at will, by means of a continuously-rotating shaft. Peculiarities in the construction of frame-work give it unusual strength and stiffness. The press may be thrown into action by a movement of the foot, and the arrangement allows accumulation of momentum to contribute its effect in the last part of the compressing movement. In unscrewing or slackening, the motion is automatically stopped at the right period.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a front elevation with a portion of the frame-work broken away. Fig. 2 is a vertical section on the irregular line S S. Fig. 3 is a horizontal section.

I have represented the driving-shaft as supported upon uprights from the bed, and the bed as of wide extent, and raised at and near its edge. These are unimportant features, and far from essential to success. It will, in most cases, be preferable to depress the bed-work around the edge, and to correspondingly lower the position of the treadle, and to suspend the shaft upon hangers from the timbers overhead when the press is worked in a strong building.

Similar letters of reference indicate like parts in all the figures.

A is the bed proper, and is a casting of great strength, resting on bed-work A¹, formed with uprights A², which may support the driving-shaft, and any other parts required. B is the driving-shaft, operated by a belt from a steam-engine or other suitable power, with a continuous rotatory motion. B¹ and B² are broad wheels, the inner faces of which are smoothly finished. C is a spring or equivalent device, acting, with a nearly or quite constant force, against a collar, B³, on the shaft B, and tending to urge the shaft always to one side. D is a lever turning on a fulcrum, *d*, and acting

against a collar, B⁴, to urge the shaft B in the direction opposite to the force C. E is a link communicating motion to the lever D, from a bell-crank lever, G, which is actuated by a treadle, H, conveniently placed, to be moved by the foot of the attendant. The press is operated by a screw turning in a massive nut, and provided with a wheel adapted to be acted upon and turned in one direction or the other, according as it receives motion from one or the other of the wheels B¹ B². M is the threaded head of the press. N is the screw, O the wheel, and P the platen. The head M is held firmly by peculiarly-formed thimbles M² M³, which are cast together, and are also formed with guides *m*² *m*³, which guide the platen P. There is one of the double thimbles M² M³ *m*² *m*³ on each side of the platen P. Stout bolts *m* extend up and down, and are properly equipped with heads and nuts, to resist the strain induced by the action of the press. These bolts extend through the centers of the castings, which I have denominated thimbles, but which, perhaps, might be denominated columns M² M³.

It being understood that the lower end of the screw N is formed with a button, not represented, which turns loosely in the platen P, as usual, and that the wheel O is keyed firmly upon the screw, the depression of the lever H, by moving the shaft B to the right, brings the face-wheel B¹ in contact with the wheel O, and gives it a motion which screws the platen down. As the motion proceeds it becomes more rapid, by reason of the contact of the wheel O being experienced further from the center of the wheel B¹. At the moment when the resistance is not in the case of a die or the like, the wheel O has acquired a high velocity, and its fly-power contributes to increase the effect of the mechanism.

The attendant soon acquires the faculty of releasing the treadle or foot-lever H at the proper moment, so that just as the wheel O is arrested by the resistance to the descent of the platen, the shaft B moves endwise, separating the face-wheel B¹ from contact with the wheel O, and bringing the opposite face-wheel B² into contact therewith, which immediately commences to turn the wheel O in the opposite direction, and unscrew or open the press.

If this movement is effected adroitly, the

wheel B^2 will come into play at exactly the moment when the momentum of the wheel O is exhausted, and it has rendered available the slight elasticity of the parts by driving everything to the extreme screwed-down position. The tendency to recoil from this contributes, with the contact of the wheel B^2 , to immediately set the press in the full opening motion. This motion decreases as the platen rises, by reason of the contact becoming nearer the center of the wheel B^2 . When the press is fully opened, a cone, N' , on the top of the screw N , strikes a cone, B^5 , on the shaft B , and compels the shaft to move endwise just sufficiently to hold both wheels $B^1 B^2$ out of contact with the fly-wheel O , in which position the press stands at rest with the shaft B , revolving idly until the treadle is again depressed.

It is well to surface the periphery of the wheel O with leather, to afford a better contact for the face-wheels. It is still more important to mount the cone N' loosely on the upper end of the screw N , so that it may exercise its function of moving the shaft endwise with little friction, whether the velocity of the screw and wheel be more or less.

A great torsional strain is thrown upon the framing M and its connections at the moment that the platen is depressed to the lowest point. The construction of thimbles or columns $M^2 M^3$ in single rigidly-connected masses on each

side, not only holds the guides $m^2 m^3$ very firmly parallel, but gives great stiffness to resist the torsional strain.

I claim as my invention—

1. A press, having a wheel, O , fixed on the screw N , subject to the alternate action of face-wheels $B^1 B^2$, on the shaft B , which latter is turned continuously in one direction, and is movable, so as to bring the wheels $B^1 B^2$ alternately into contact with the wheel O , and thus turn the screw in one direction or the other at will, as specified.

2. The spring C , or its equivalent, urging the movable shaft B , which carries the wheels $B^1 B^2$ into the position to open the press, in combination with means D for inducing the opposite position at will, as specified.

3. The disconnecting device $N' B^5$, in combination with the screw N , shaft B , and wheels $B^1 O$, as herein specified.

4. The construction of the press-frame, with the castings $M^2 M^3$ formed in one, as herein specified.

In testimony whereof I have hereunto set my hand this 30th day of July, 1873, in the presence of two subscribing witnesses.

JULES DEBEAUVAIS.

Witnesses:

WM. C. DEY,
ALF. WESTBROOK.