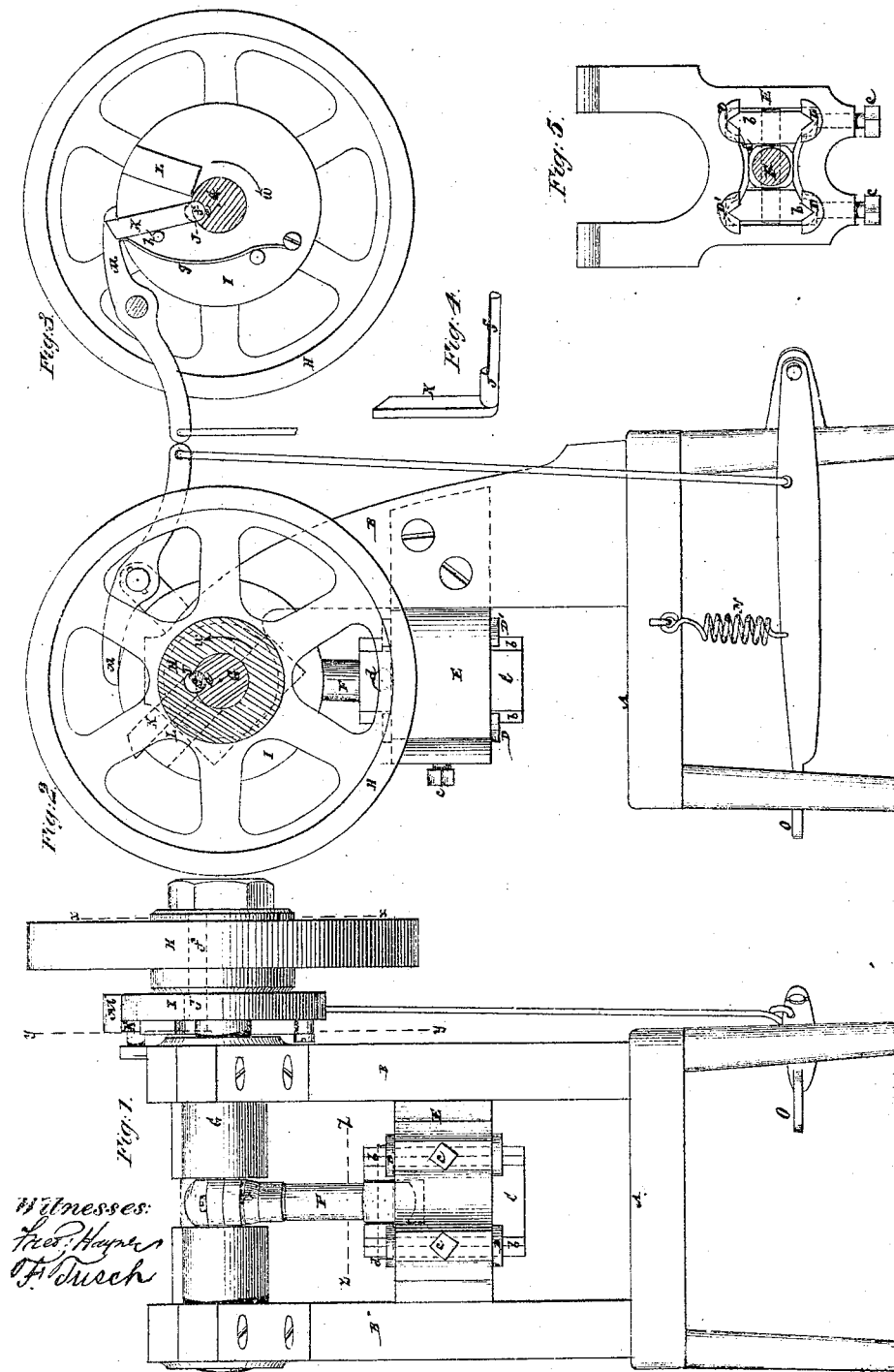


A. Hamilton

*Power Press*

No. 110,455.

*Patented Dec. 27. 1870*



# United States Patent Office.

ALBERT D. HAMLIN, OF BROOKLYN, NEW YORK, ASSIGNOR TO MAYS & BLISS, OF SAME PLACE.

Letters Patent No. 110,455, dated December 27, 1870; antedated December 22, 1870.

## IMPROVEMENT IN POWER-PRESSES.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, ALBERT HAMLIN, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Power-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a front elevation of a power-press having my invention applied to it;

Figure 2, a sectional side view, taken as indicated by the line *xx* in fig. 1; and

Figure 3, a similar view to fig. 2, in part, looking in the reverse direction, and taken through the line *yy* in fig. 1.

Figure 4 is a view, in perspective, of a lever and plug forming part of the trip-motion of the press.

Figure 5 is a sectional plan of the plunger or mandrel portion of the press and box through which the same operates, taken as denoted by the line *zz* in fig. 1.

Similar letters of reference indicate corresponding parts.

My improvement is applicable to various kinds of power-presses, including die-presses suitable for making or stamping up metal articles or work of different sorts.

The invention consists in a novel device for arresting the plunger at the top of its stroke, or when out of the way of the bed or lower die, and for holding said plunger in its raised position without stopping the running-wheel or pulley that drives the operating-shaft of the press, said device requiring no support outside of the driving-pulley, and being at once simple, efficient, and durable.

The invention also consists in a novel arrangement of the pitman which operates the plunger or mandrel within V-shaped slides or cheeks formed on the latter, and so that said pitman is free to work within the mandrel-box or guide that carries bushes for the V-slides to play through, with means of adjustment.

By this arrangement a longer pitman for a given height of press may be secured, and a steadier action generally effected, with every facility for tightening or packing up the sliding mandrel.

Referring to the accompanying drawing—

A is the table or bed of the press, and B the frame thereof.

C is the sliding mandrel or plunger, having sides or cheeks *bb*, the front and back edges of which are made to form V-shaped slides, which fit within and play through bushes D D and corresponding opposite ones, D', of a mandrel-box or guide, E, the front bushes D D having a loose or free fit, and being made adjustable, or capable of being set up from time to time, by means of set-screws *c c*. This forms a simple and

efficient arrangement for adjusting the mandrel to meet wear, or as circumstances may require.

Said mandrel C is operated by a pitman, F, pivoted, as at *d*, within the V-shaped slides or cheeks *bb*, and with freedom to play through the mandrel-box or guide E, which latter is secured to the main frame.

By this arrangement a steady action is secured for the mandrel, and a longer pitman may be used for a given height of press than where the pitman is not at liberty to play through the guide.

G is the operating-shaft, designed to rotate as indicated by the arrow *w*, and serving to give up-and-down motion, by means of a crank or eccentric, to the pitman F.

H is the driving-pulley, hung, in a free or loose manner, on an overhanging portion of the shaft G, and made capable of gearing therewith, as required, in the following manner; and so that either driving motion may be communicated to the shaft G, or the latter be stopped to arrest the mandrel or plunger at its top stroke for facilitating clearance of the work, or access to the dies of the press, without stopping the running of the pulley H.

The overhanging portion of the shaft G has a longitudinal semi or partially-circular groove, *e*, made in it, the circle of which groove is completed through the driving-pulley H, and an inner arranged disk, I, which is fast on the shaft G.

Fitting this groove is a key or plug, J, of a full circular form, where it passes through the disk I, but cut away or reduced, as at *f*, where it is extended beyond the disk, or passes through the wheel H.

On the inner end of this key, which is made capable of being turned within the groove *e*, is an arm or lever, K, acted upon at its back by a spring, *g*, that serves to throw said lever in driving contact with or against a projection, L, on the face of the disk I, and, at the same time, or by such adjustment of the lever K, causes the reduced portion *f* of the key J to be turned into driving-gear with the grooved portion of the pulley H, as shown in fig. 2, and whereby said pulley is made to rotate the shaft G.

On holding back the lever K, however, against the action of the spring *g* till arrested by a stop, *h*, which turns the key J, so that the reduced portion of it lies wholly within the shaft G, as represented in fig. 3, then the pulley H is free to rotate without driving the shaft G.

To thus arrest the motion of the shaft G without stopping the pulley H, a stop-lever, M, that may be under the control of a spring, N, and treadle, O, is lowered or adjusted so that the outer or projecting end of the lever K in coming round strikes it, which causes said lever to be worked back, and, with it, the key J to be turned so that its reduced portion *f* does not project into the groove in the pulley H, whereby

the latter is free to rotate without driving the shaft G, the outer surface of such reduced portion preferably being convex, and of the same curvature as the shaft, by which construction said reduced portion aids, when adjusted as last described, to form, in common with the shaft, a bearing for the pulley.

The stop-lever M is so arranged as to trip or draw back the lever K when the plunger or mandrel O approaches the extremity of its up stroke, so as to arrest the motion of the mandrel at the end of such stroke.

A trip-motion thus constructed requires no bearing outside of or beyond the driving-pulley, is simple, efficient, and durable, may be operated without a spring to establish the disconnection of the driving-pulley and shaft it serves to operate, and, when adjusted to gear these devices, constitutes a direct and positive connection between them.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination of the key or plug J, formed with a reduction, *f*, and made capable of turning, as described, the shaft G, having a groove, *e*, in it, the lever K, the disk I, with its projection L, and the trip or stop-lever M, substantially as specified.

2. The combination of the pitman F, arranged within the cheeks or sides *b b* of the mandrel C, and relatively to the box or guide E, for operation therethrough, and the bushes D D', made to fit the V-shaped edges of the cheeks *b b*, essentially as shown and described.

ALBERT HAMLIN.

Witnesses:

FRED. HAYNES,  
FERD. TUSCH.