

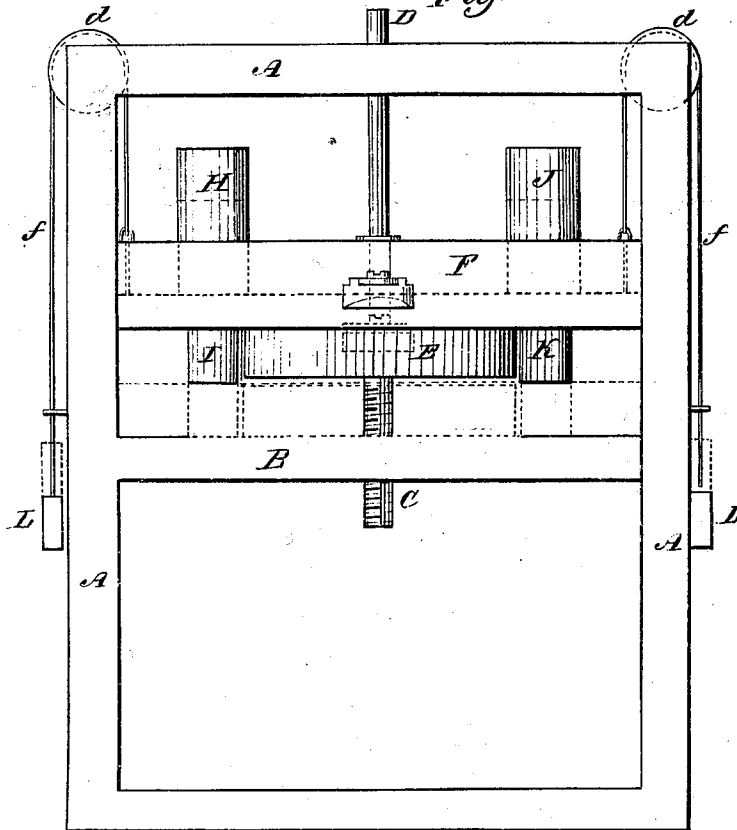
*LaForge & Somers.*

*Cotton Press.*

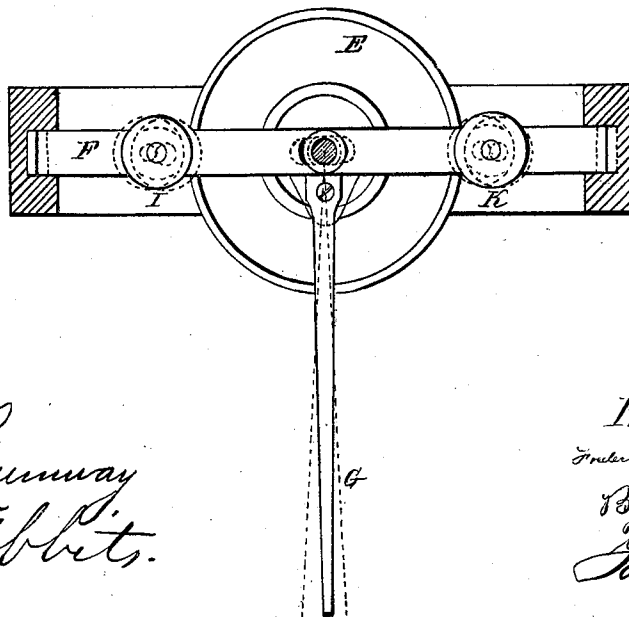
*N<sup>o</sup> 93,097.*

*Patented Jul. 27, 1869.*

*Fig. 1.*



*Fig. 2.*



*Witnesses.*

*D. H. Shumway  
a. j. Tibbets.*

*Inventors.*

*Frederick H. LaForge & Geo. E. Somers.*

*By their Attorney*

*John E. Earle*

# United States Patent Office.

FREDERICK H. LAForge AND GEORGE E. SOMERS, OF WATERBURY, ASSIGNORS TO THEMSELVES AND N. A. BALDWIN, OF MILFORD, CONNECTICUT.

Letters Patent No. 93,097, dated July 27, 1869.

## IMPROVEMENT IN SCREW-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 we, FREDERICK H. LAForge and GEORGE E. SOMERS, of Waterbury, in the county of New Haven, and State of Connecticut, have invented a new Improvement in Screw-Press; and we do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view, and in

Figure 2, a top view.

This invention relates to an improvement in stamping-presses, such as employ a screw to raise and lower the die, and are commonly operated by long arms extending out, by which the operator turns the screw. A number of revolutions being required to force down the die, and a corresponding number to raise it, the power is given, to a great extent, by the momentum of the levers, which are made very heavy. This construction makes the process of stamping comparatively slow, and the object of our invention is to apply power to drive the screw both down and up. To this end,

Our invention consists in applying, to the screw, a wheel, and causing the screw to revolve by the application of a revolving frictional surface to the said wheel, the said revolving surface adjustable, so as to arrest and reverse the operation of the screw, at pleasure.

To enable others skilled in the art to construct and use our improvement, we will fully describe the same as illustrated in the accompanying drawings.

A represents the frame of a press, which may be of any known or convenient construction.

B, the cross-bar, through which the threaded screw C works, running down therethrough when turned in one direction, and up when turned in the opposite direction, the said screw, or a shaft to which it is attached, extending up, so as to have a bearing at D.

On the said screw, we fix a wheel, E, which we prefer to make of sufficient weight to give to the screw, when revolving, the necessary momentum; but, if preferred, the wheel may be lighter, and the extra weight applied at some other point on the shaft of the screw.

F is a cross-bar, arranged so as to slide freely up and down in the frame with the screw as it traverses up and down; and which also has a lateral motion given to it by means of a lever, G, (see fig. 2,) which will throw the said cross-bar to the right or left, as the case may be.

To the said cross-bar, at each side of the wheel E,

is fixed a shaft, carrying a pulley, H, and a friction-wheel, I, upon one side, and a pulley, J, and friction wheel K, on the other side.

To each of the said pulleys H and J, power is applied, to drive them in opposite directions; and to them a rapid revolution should be given.

When the bar F stands in a central position, as denoted in black, fig. 2, then neither of the friction-wheels I or K will bear against the surface of the wheel E; but when the lever G is pressed to the left, as denoted in blue, then the friction-wheel K is brought to bear hard against the surface of the wheel E, which causes the wheel E to revolve, and force the screw up or down, as the case may be, (for convenience of illustration, say down;) and when a sufficient velocity has been given to the wheel E, that the momentum will carry the screw down with sufficient force, then the wheel E may be relieved from the action of the wheel K; and immediately before, or as soon as the die carried by the screw strikes the corresponding die, the other or opposite revolving wheel I should be pressed against the wheel E, by turning the lever G to the opposite side, as denoted in red, fig. 2. This will prevent any injury or strain upon the machine by the instantaneous stopping of the screw, and will immediately thereafter reverse the movement of the wheel E, so as to raise the screw; and as the screw approaches its highest point, the wheel K is again applied, to arrest the movement of the revolving wheel E, and reverse its operation, as required; and so on, the press may be operated with great rapidity.

The bar F traverses up and down with the screw, and, as this and the mechanism attached to it and the screw are of no inconsiderable weight, it is desirable to counterbalance this, that is, to relieve the screw from carrying such a load. To this end, we apply counterweights L L, by cords or chains f, running over pulleys g, as denoted in fig. 1.

These weights may be carried to any convenient point.

Having fully described our invention,

What we claim as new and useful, and desire to secure by Letters Patent, is—

The arrangement of the cross-bar F so as to move up and down with the screw, and supporting the driving-pulleys and friction-wheels, substantially as set forth.

FREDERICK H. LAForge.  
GEO. E. SOMERS.

Witnesses:

ISRAEL HOLMES,  
A. J. TIBBITS.