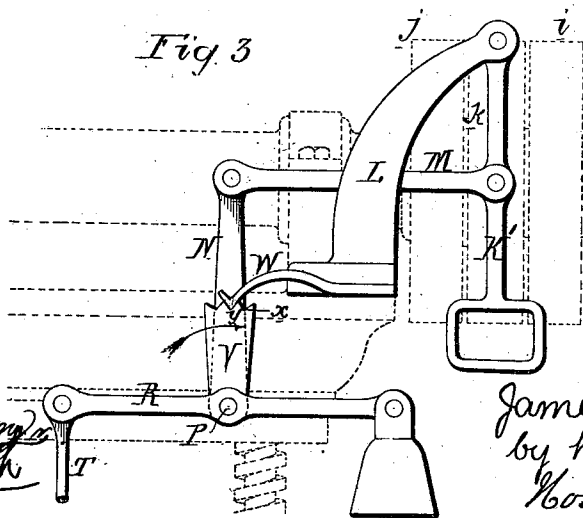
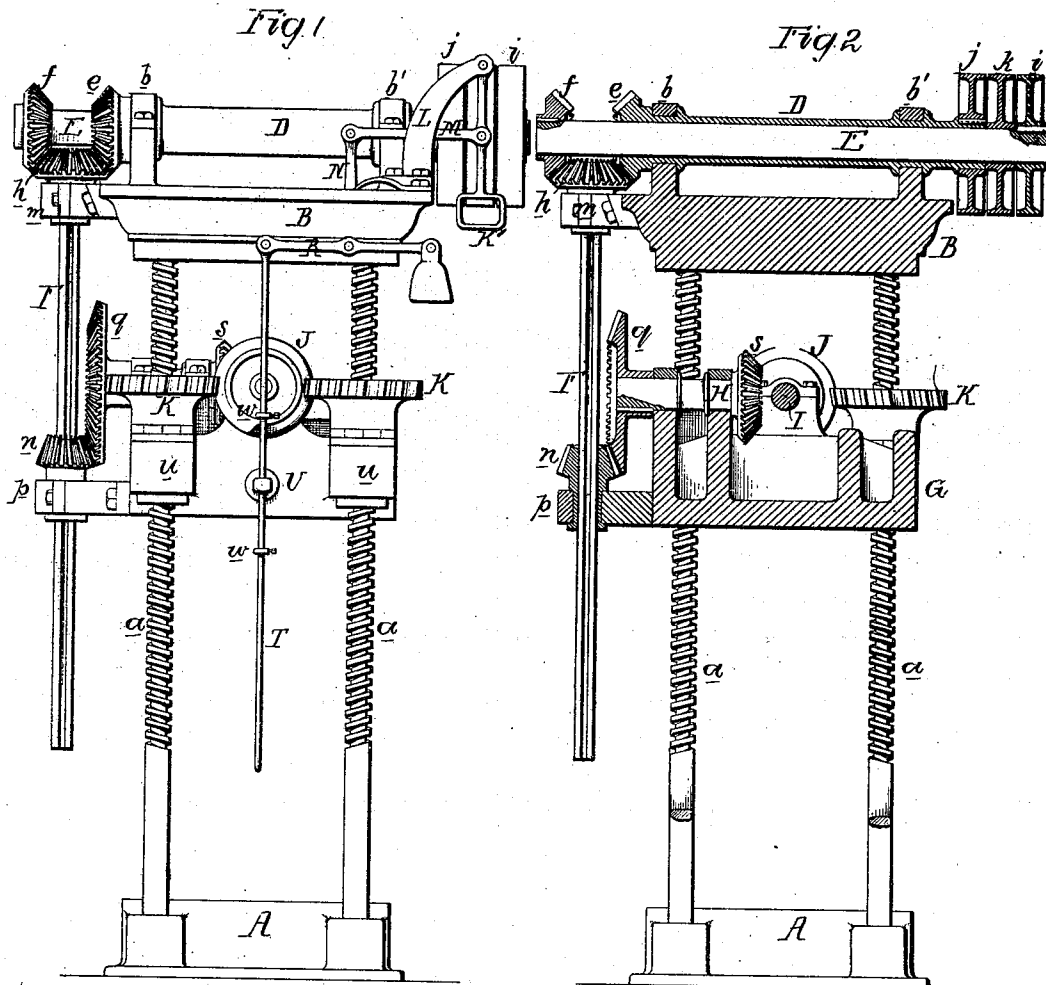


J. ECCLES.
PRESS.

No. 179,775.

Patented July 11, 1876.



Witnesses
Harry Brown
Harry Smith

James Eccles
by his Attorneys
Bowman and Son

UNITED STATES PATENT OFFICE.

JAMES ECCLES, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO SAMUEL ECCLES, JR., OF BALTIMORE, MD.

IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. **179,775**, dated July 11, 1876; application filed June 26, 1876.

To all whom it may concern:

Be it known that I, JAMES ECCLES, of Philadelphia, Pennsylvania, have invented Improvements in Presses, of which the following is a specification:

My invention relates to improvements in that class of presses in which one or more screws are used; and the object of my invention is to adopt, in connection with a press of this class, such gearing as will facilitate the operations of the platen, and certain appliances for causing the platen to shift the driving-belt. These objects I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, which represents my invention as applied to a quadruple screw-press.

Figure 1 is a side view of my improved press; Fig. 2, a vertical section of the same; and Fig. 3, a detached view, drawn to an enlarged scale, of the belt-shifting device.

To the base A of the press are secured four screw-standards, *a*, two of which have right-handed and two left-handed threads, the upper ends of the standards being secured to and connected together by the entablature B, on which are two bearings, *b b'*, for the tubular shaft D, and through the latter passes the driving-shaft E, which carries at one end the bevel-wheel *f*, and at the opposite end the fast pulley *i* and loose pulley *k*, the said tubular shaft having at one end the bevel-wheel *e*, and at the other end the fast pulley *j*. Both of the bevel-wheels *e* and *f* gear into a like wheel, *h*, on a vertical driving-shaft, F, which is arranged to turn in, but is confined vertically to, a bearing, *m*, on the entablature B, the shaft passing through and being arranged to slide in a pinion, *n*, the hub of which turns in, but is confined vertically to, a bearing, *p*, on the platen G of the press. The shaft F has a groove adapted to a key in the pinion, so that one cannot turn without the other. The pinion *n* gears into a bevel-wheel, *q*, on a shaft, H, which has its bearings on the platen G, and this shaft carries a bevel-wheel, *s*, gearing into a like wheel on a shaft, I, which also has its bearings on the platen G. The shaft I carries two worms, J J, each of which gears into two worm-wheels, K K, the hub of each of the

four wheels being arranged to turn in, but being confined vertically to, a bearing, *u*, on the platen, and each wheel forming the nut of one of the screw-standards *a*.

The combination described of the platen, and its gearing for operating the nuts of the screws, with a grooved shaft, F, confined vertically to the entablature, is an important feature of my invention, as the said shaft is always in a condition for driving the said gearing, no matter what may be the position of the platen; hence the superiority of the arrangement to the plan of driving by a belt adapted to a pulley carried by the platen, as heretofore practiced.

One driving-belt only is required for operating the platen, the latter ascending when the belt is on the pulley *j*, descending when the belt is on the pulley *i*, and being stationary when the belt is on the intermediate or loose pulley *k*.

In order that the platen may be caused to shift the belt to the loose pulley when the said platen has reached a given altitude, and when it has descended to some desired point, I employ the mechanism shown in Figs. 1 and 3, in which K' is a belt-shifting lever, hung to a bracket, L, on the entablature B of the press, this lever being connected by a rod, M, to an arm, N, secured to a shaft, P, which also has its bearing in the said entablature, the shaft carrying a lever, R, one arm of which is weighted, the other arm being jointed to a pendent rod, T, which passes through a bracket, U, on the platen G, the rod being provided with two adjustable collars, *w w*, one above and the other below the said bracket. The shaft P carries an arm or cam, V, in the upper end of which are three notches adapted to the end of a spring, W, secured to the entablature of the press. When the end of the spring is in the middle notch of the arm the belt is on the loose pulley *k*, as shown in Fig. 3, and the platen will consequently be stationary; but when the end of the spring is in the notch *x* the belt will be on the pulley *j*, and the platen will ascend until its bracket U strikes the upper collar *w* of the rod T, when the arm V will be moved in the direction of the arrow until its projection *y* passes the end of the

spring, when the action of the latter on the inclined side of the said projection will force the arm V farther in the direction of the arrow.

It will thus be seen that the movement of the belt from the pulley *j* to the pulley *k* is accomplished partly by the movement of the platen and partly by the action of the spring.

The platen, in descending, will be arrested when the bracket U strikes the lower collar *w* on the rod T, and moves the arm V in a direction contrary to that pointed out by the arrow, and, aided by the spring W, causes the shifter K to move the belt from the fast pulley *i* to the loose pulley *k*.

I claim as my invention—

1. The combination, in a screw-press, of a platen, G, with a driving-shaft, F, confined vertically to the entablature of the press, and arranged to slide in and turn a pinion, *n*, which is confined vertically to the platen, and serves,

with other gearing, as a medium for operating the said platen, all substantially as set forth.

2. The combination of the said shaft F with the entablature B of the press, the tubular shaft D, shaft E, pulleys *j k i*, and bevel-gears *e f h*.

3. The platen of the press, the notched arm or cam V on the entablature, and mechanism by which the platen is caused to operate the said arm or cam, in combination with the spring W and the belt-shifter K, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES ECCLES.

Witnesses:

HARRY SMITH,

HARRY HOWSON, Jr.