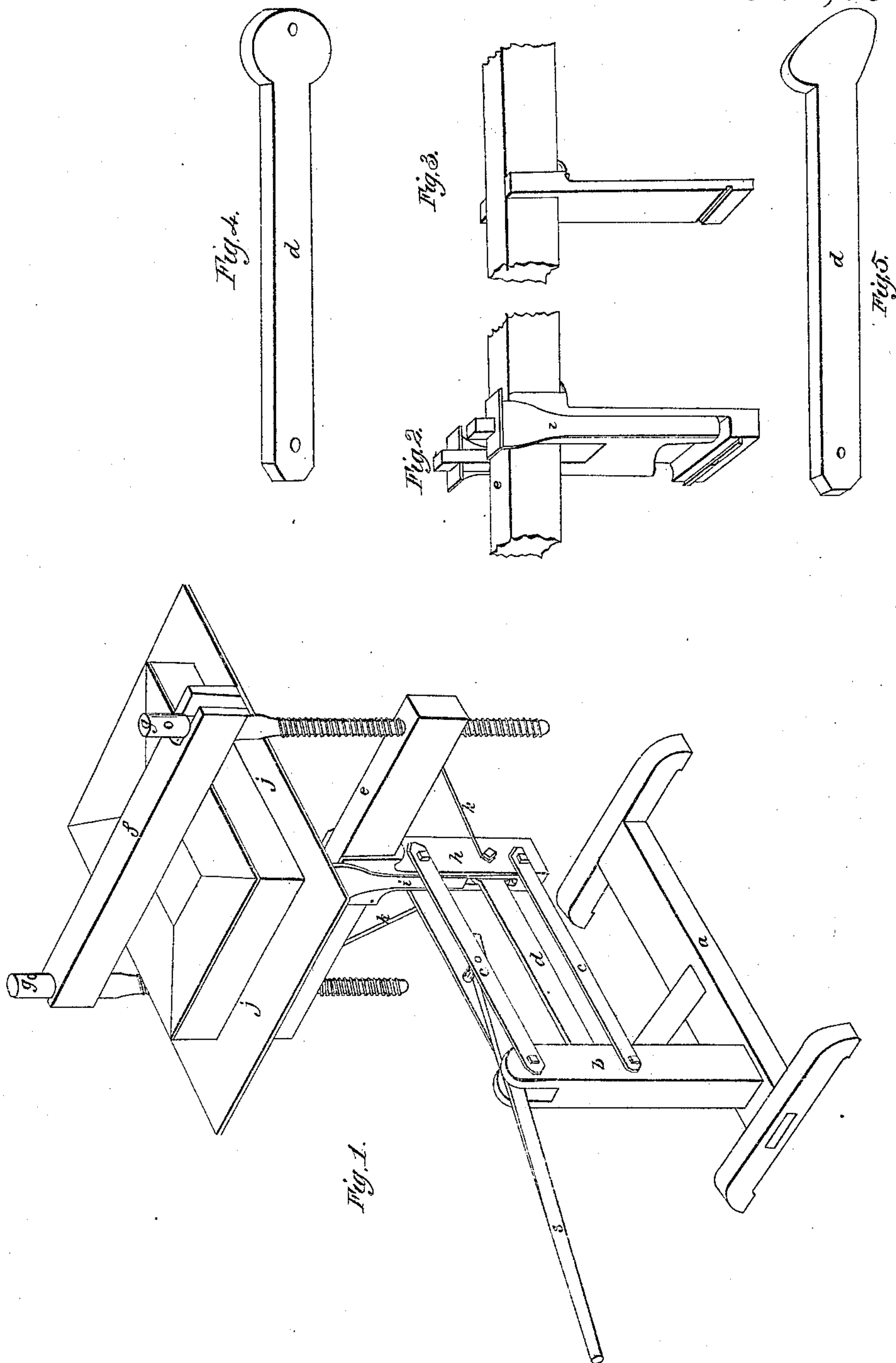


Tyler & McKinney,

Cotton Press.

N^o 6,108.

Patented Feb. 13, 1849.



UNITED STATES PATENT OFFICE.

A. MCKINNEY AND D. TYLER, OF CLARKSFIELD, OHIO.

IMPROVEMENT IN SELF-ACTING PRESSES.

Specification forming part of Letters Patent No. 6,108, dated February 13, 1849.

To all whom it may concern:

Be it known that we, DAVID TYLER and ALMERON MCKINNEY, of Clarksfield, in the county of Huron and State of Ohio, have invented certain new and useful Improvements in Presses, wherein their own gravity and that of the body being compressed constitutes their actuating force, of which the following is a full and exact description, reference being had to the annexed drawings of the same, making part of this specification, in which—

Figure 1 is a perspective view of the machine in operation with our improvements applied thereto. Fig 2 is a view of the piston, one of the guides, and a part of the beam, the other guide being detached and represented in a reversed position in Fig. 3. Figs. 4 and 5 are views of different forms of the cam-lever.

The same letters indicate the same parts in all the figures.

In all presses heretofore constructed upon this principle the power is applied by means of levers turning upon fulera, so arranged that if the fulera become loosened or the fastenings of the levers yield the action of the press will be materially deranged and its efficiency much impaired. From the manner in which these presses are constructed they are peculiarly liable to these derangements and require a greater amount of mechanical skill to keep them in good working order than is possessed by most persons who use them, and they very soon, therefore, as a necessary consequence, become unfit for service and are thrown aside as worthless. The tendency of the strain upon the levers is to split them, which it very often does, rendering the machine useless until the split lever is replaced by a sound one. Another of the difficulties of these presses which we shall notice is the extreme degree of obliquity assumed by the platen during certain parts of the operation of the press, which renders it totally unfit for the performance of such operations as require a horizontal platen. This obliquity of the platen in models of small size is no so obvious; but in a press with four-foot levers the platen, with an ordinary amount of motion, will in its highest position stand at an angle of forty degrees, which causes anything placed upon its surface and not firmly

held instantly to slide off. All of these difficulties are entirely obviated, while at the same time the durability and efficiency of the machine are greatly increased and its cost lessened by means of our improvements, which consists in applying the power of compression through a cam and lever acting upon the piston on which the platen rests, and supported by a stirrup, instead of applying it through a lever turning upon a fulcrum and acting upon a pivot attached to the stem of the platen; also, in maintaining the platen in a horizontal position by means of parallel rods turning on pivots. The levers are never split by the operation of our press, because they are not subjected to transverse strains.

In the accompanying drawings, *a* is the base on which the machine is supported. It is made of strong plank or timber and has two transverse pieces joined to its ends to increase its breadth, that it may support the superstructure more firmly.

b is a standard erected on one end of the base. It is for the purpose of supporting the parallel rods *c c c c* and the cam-lever *d*, which are joined to its upper end by joint-pins, which pins form pivots on which the rods and lever respectively turn.

h we denominate the head. It is formed of two pieces fastened together by bolts at the lower end, and by the lower press-beam, *e*, to which they are bolted at the upper end, leaving a space between the two sides, in which the stem *i* of the platen *j* slides up and down. The outer ends of the parallel rods are joined to the head by pivots, and the outer end of the cam-lever with the cam attached is placed in the space between the sides beneath the platen-stem which rests upon it, and when the head is raised or lowered the platen will be raised or lowered through a space equal to the eccentricity of the arc in which the cam turns. The upper ends of the sides of the head are forked to receive and hold more securely the beam *e*. To strengthen further the connection of the beam and head, the brace-rods *k k* are attached to them respectively on either side of the head. The upper press-beam, *f*, is connected with the lower beam, *e*, by the screws *g g*, on collars near the upper end of which its forked ends rest. The forks

on the ends of the beam admit of its being readily removed to give more room and render it more convenient to place the substance to be pressed upon the platen. The cam-lever represented in Fig. 4 may be inserted in the head on a pivot, if any case should arise in which such an arrangement would be advisable; but in general we prefer to use the lever represented in Fig. 5, the cam being inserted into the slot or opening in the head, while the opposite end turns on a pivot inserted through it and the upper end of the standard or post *b*. To increase the distance between the press-beams, the head and platen are elevated to the highest position by means of the levers. The substance to be compressed, after being properly prepared, is now put upon the platen and the upper press-beam brought down into contact with it by the screws *g*. The press is then left to act by gravity to produce the required amount of compression, its action in this respect being like that of other presses constructed upon similar principles.

We do not claim to be the first who have employed the gravity of a press, and that of

the substance being compressed by it as its actuating force, this having been done [by others in various ways; but

What we do claim as our invention, and desire to secure by Letters Patent, is—

The combination of the cam-lever *d* and head *h*, constructed and arranged as herein described, with the platen, press-beams, and parallel levers, whereby the platen is maintained in a horizontal position at every elevation, and the compression effected by the lever and cam without passing pins through them as fulcra for them to turn on, thus avoiding the splitting of the levers and other arrangements which are productive of so much inconvenience in presses heretofore constructed upon similar principles.

In testimony whereof we have hereunto subscribed our names in presence of two subscribing witnesses.

DAVID TYLER.
A. McKINNEY.

Witnesses:

R. FANNING,
P. H. WATSON.