M. D. Cheek,

Cotton Press.

No. 5,597. Patented May 23, 1848.

Fig. 1.

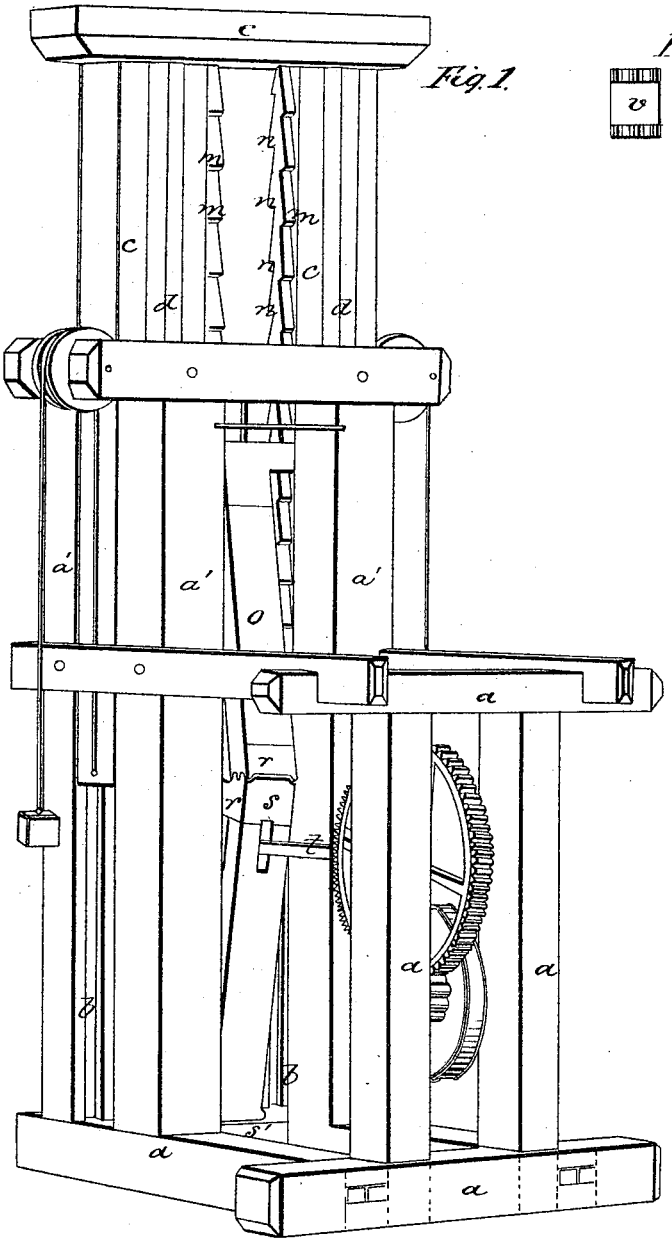


Fig. 3.

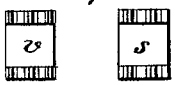
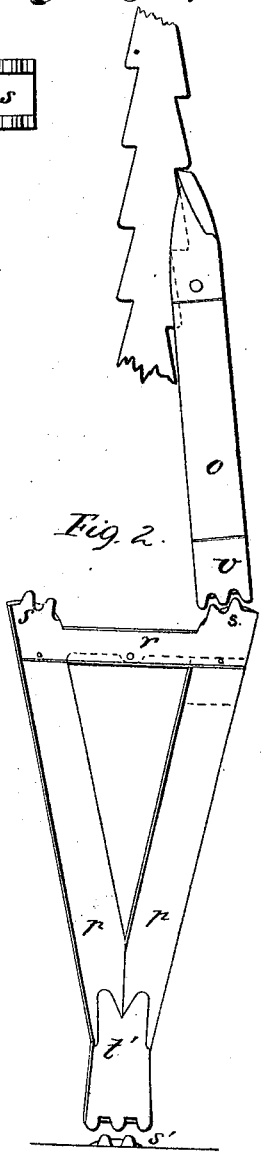


Fig. 2.



UNITED STATES PATENT OFFICE.

M. D. CHEEK, OF MEMPHIS, TENNESSEE.

IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. **5,597**, dated May 23, 1848.

To all whom it may concern:

Be it known that I, MOSES DECATER CHEEK, of Memphis, in the county of Shelby and State of Tennessee, have invented a new and useful Improvement in Machinery for Pressing Hay and Cotton, and for other purposes, which I denominate the "Portable Sampson Press," of which the following is a full, clear, 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 showing the several parts in connection. Fig. 2 is a view of the levers detached. Fig. 3 is a view of the face of a pair of the joint-blocks.

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

In the accompanying drawings, the framework *a* of the machine is made of timber of suitable dimensions, and substantially framed together. The four posts *a' a' a' a'* have grooves *b* on their inner sides, in which corresponding tongues, *d*, which project from the sides of the piston-rods *c*, slide, in order to guide the piston *e* steadily in its ascent and descent. The press-box is not shown in the drawings, and, being a common contrivance admitting of almost endless modifications, I do not deem it necessary to refer to it any further than to say that it may be made of the form best adapted to the purpose for which it is designed to be used. On the adjacent sides of the piston-rods the double ratchets *f f* are secured, the teeth *m* of these ratchets being opposite to the space between the teeth *n*. The teeth of both the ratchets are equidistant, the spaces between them being equal to the length of the vertical motion of the ratchets or toggle-joint levers *o o*. The lower levers, *p p*, are connected together at the top by a cast-iron cap or tie, *r*, on the upper side of which the lower half, *s s*, of the toggle-joints are formed, which are convex in their shape, having cogs on each end. The bearing *s'*, on which the lower ends of the levers *p* rest, is made of cast-iron of a rounded or convex form, with cogs also on each end, is let into the surface of the base of the frame. The lower ends of the levers *p p* are made to fit into a cast-iron socket, *t'*, having its under surface plane, of a rectangular form in area, corresponding nearly with the convex or cylindrical surface of the lower half of the joint *s'*, and having also cogs which gear into the cogs of the lower or convex half of the joint, to keep the parts respectively in their proper places. The ratchets or upper levers, *o o*, are formed with the upper half, *v v*, of the toggle-joint on their lower ends. These joint-pieces are flat, and rest upon the convex surface of the lower halves, *s s*, and have cogs on their ends, which take into the cogs on the ends of the parts *s s*, to hold them together. The upper ends of these levers are armed with cast-iron beaks, of the form in which pawls and ratchets are usually made, and are of a size which renders them suitable to take into the teeth of the ratchets. The step *s'*, or the lower half of the lower joint, forms the point of support for the levers and the teeth of the ratchets. The point of resistance—the point to which the power is applied—is the cap *r*, and when the levers on one side are deflected for the purpose of raising the piston by bringing the levers on the other side into the vertical position, where the points of support and resistance are at their greatest distance apart, the deflected lever *o* takes into a notch in the ratch next below the one it last raised, and while these deflected levers are forced back again into the vertical position the opposite levers are bent out until the ratchet takes into the ratch one notch lower than it did before. In this way the levers alternately advance the piston until it is moved forward, so as to produce the required amount of compression. It will be seen that the action of these levers differs from that of other toggle-joint levers only in the rolling of the joints against, instead of sliding, upon the surface of each other. This rolling is caused by one-half of the joint being convex and the other flat, instead of making one concave and the other convex, and fitting them together accurately, as is the usual method, when they must necessarily slide upon each other, and when, unless they be fitted and polished at great expense, a great deal of power will be absorbed by friction; but my rolling joints may be made of cast-iron and put together just as they come out of the molding-sand without the least finish, and they will work as smoothly and with far less friction than the best finished sliding joints. By constructing the joints in this manner the efficiency of the press is increased, while its cost is materially diminished. The levers are vibrated by a pitman, *t*, alternated by a crank, which is put in motion by any suitable com-

bination of wheels, pulleys, and axles, the whole being moved by manual, horse, steam, or other power. The weights *y* are for the purpose of counterbalancing the piston, so that it can be readily raised, lowered, or placed at any required elevation.

The several parts of the machine may be made of such material as have been mentioned, or of any other supposed to be more suitable by the constructor.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the plane and convex cogged blocks *v s* and *t' s'*, with the levers *o p*, to form a rolling toggle-joint, as herein set forth.

In testimony whereof I have hereunto signed my name, in presence of two subscribing witnesses, this 12th day of April, 1848.

MOSES DECATER CHEEK.

Witnesses:
P. H. WATSON,
STEPHEN W. WOOD.