

United States Patent Office.

CYRUS CHAMBERS, JR., OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 109,803, dated December 6, 1870.

IMPROVEMENT IN BRICK-MACHINES.

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, CYRUS CHAMBERS, JR., of the city of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Brick-Machines; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the knife-arm and knife;

Figure 2 is a top view of the same;

Figure 3 is an enlarged side view of the cam;

Figure 4 is a side and edge view of the loose jaw of the knife-clamp; and

Figure 5 is an enlarged view of the forked end of the knife-arm, showing the lateral adjustment of the cam.

The same letter marks the same part wherever it occurs.

This invention relates to that class of brick-machines in which a continuous bar of clay is extruded from a pugging-chamber through a die, and cut into proper lengths by a knife attached to the periphery of a wheel revolving at right angles to the clay-bar. Such a machine was invented by me, and patented October 6, 1863.

The knife in that machine, owing to the want of perfect adjustments and a correct method of hanging, was frequently broken, and this proved a serious element of delay and expense, which I found it very desirable to eliminate.

To improve the machine in this regard is the object of the present invention.

The invention consists in improvements in the cut-off arm, knife-clamp, cam, and spring, having for their object to diminish the breakage of knives in machines of the class to which the improvements appertain, by rendering the adjustments of the knife more perfect, and its movements, when encountering the clay-bar or meeting a stone, better adapted to relieve it from danger of fracture, all as hereinafter more particularly set forth.

To enable others to make and use my improvements I will proceed to describe their construction and operation, referring, by the letters marked thereon, to the drawings making part of this specification.

A marks the cut-off arm, which revolves in a plane at right angles to the bar of clay to be severed.

In the end of this arm is a fork, formed by two projecting jaws, J J, between which the knife-cam C works. The shape of this cam is clearly represented in figs. 3 and 5. It turns on a through-pin, P, and

is adjusted laterally by the two set-screws S' S', bearing against the steel washers *w w* on the nave of the cam C. (See fig. 5.)

The cam C carries the knife K, which is made of thin sheet-steel. It is attached to the cam by a loose clamp-jaw, L, held to the cam by a bolt and nut.

The bolt passes through the holes *h h'*.

The inner face of clamp-jaw L is lined with a strip of sheet-rubber, *r*, and the knife is held in a recess in the cam C, between this rubber and the surface of said recess, by the jaw L, held down upon it by the action of the screw-bolt and nut.

The bolt does not pass through the knife, which is retained in place by friction alone, the rubber insuring uniform contact and preventing the jarring out of the blade.

Clamped to arm A, by clamp-plates *c c'* and bolts *b b* and nuts *n*, is the spring-arm S, through a slot, *s*, in whose fixed end the pin *d* projects, as shown in figs. 1 and 2.

At the free end of this spring-arm is a fork formed by the jaws *j j*, in which the roller *r'* turns. The jaws project beyond the periphery of the roller, and embrace the edge of the cam C, keeping the roller always in its proper relative position to the cam.

When the knife K is in its usual position for severing the bar of clay, the roller *r'* is received in the recess R, (figs. 1 and 3,) in the face of cam C.

When the knife is thrown back, the roller *r'* is forced out of recess R, and traverses on the lower curved edge E of the cam.

The line *y y* of the knife K does not correspond in direction with the line *x x* of the arm A, but is inclined to it, as shown in fig. 1.

If the line of the knife-edge were parallel to the line *x x*, the knife would strike the clay-bar first at one of its upper angles.

The line of the knife is inclined to that of the arm A, in order that the knife may come in contact with the clay-bar in a line corresponding with the plane of the upper surface of the bar, thus securing uniformity in the action of the knife upon the angles of the clay-bar.

The operation is too obvious to need detailed description.

When the knife K encounters a stone in the bar of clay the blade is thrown back and passes the obstruction without receiving injury.

Having fully described my invention,

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

1. The knife K, clamped at such an angle with cut-off arm A that the edge of the knife shall come in contact with the clay-bar in a line coinciding with

the plane of the upper surface of the bar, as described.

2. The knife-clamp L, constructed and adjusted as set forth, and operating to hold the knife in the manner specified.

3. The arrangement and combination of the cam C, its recess R, and curved edge E, with the spring-arm R', roller r', and projecting jaws j j, in the manner and for the purpose stated.

4. The combination of the roller r', jaws j j, and

cam C, for the purpose of keeping the roller in its proper relation to the cam in all positions of the latter, as set forth.

The above specification of my said invention signed and witnessed at Philadelphia this 27th day of July, A. D. 1869.

CYRUS CHAMBERS, Jr.

Witnesses:

WILLIAM MENDHAM,
THORWALD CHR. DAMBERG.