

Cyrus Chambers and Improvements in Brick-Machines.

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Fig. 1.

PATENTED NOV 1, 1870.

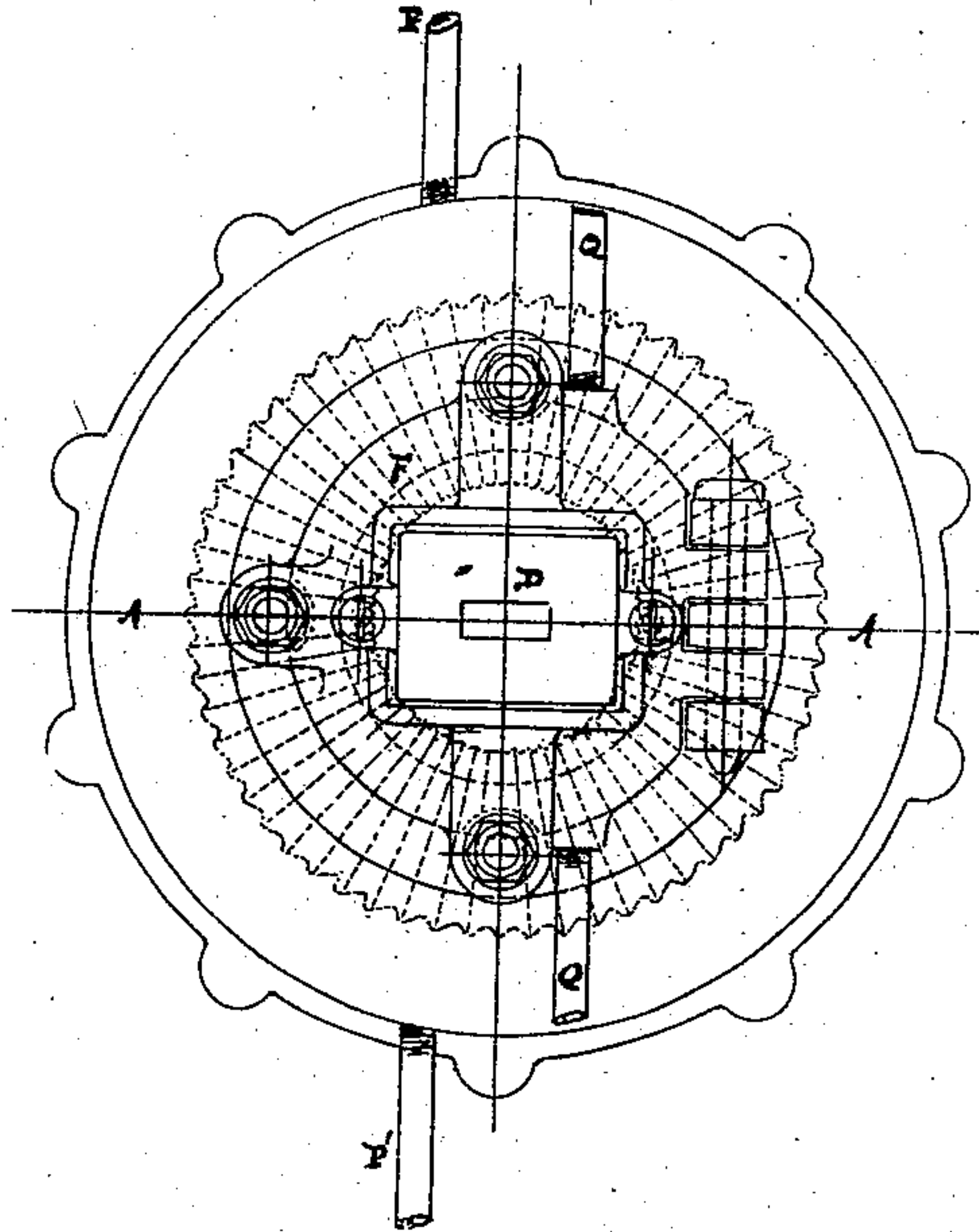
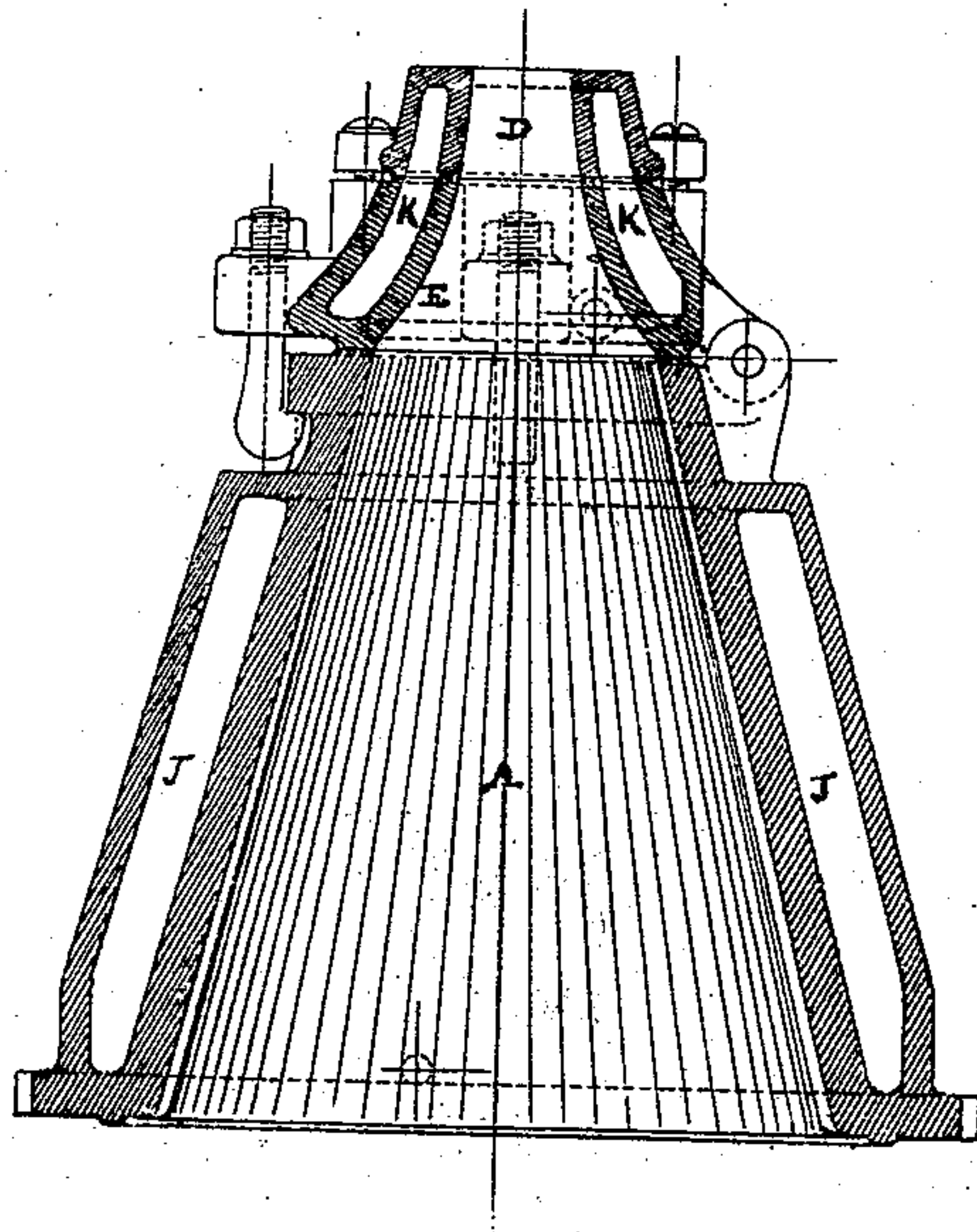


Fig. 2.



Witnesses { H. Price Davis
Howard C. Stribling

Inventor.
Cyrus Chambers Jr.

United States Patent Office.

CYRUS CHAMBERS, JR., OF PHILADELPHIA, PENNSYLVANIA

Letters Patent No. 108,880, dated November 1, 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 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 an end view of the die, former, and tapering portion of the case of the CHAMBERS' patent brick-machine.

Figure 2 is a horizontal section of the same.

The same part is marked by the same letter of reference in both figures.

My invention relates to the brick-machine patented by me October 6, 1863, in which the clay, after being tempered in a cylindrical chamber, is driven, by a conical screw, through a tapering chamber, former, and die, and is received in a continuous bar upon an endless belt, preparatory to its division into bricks.

In this machine, it is of great importance that the clay should be held so firmly by the sides of the tapering case, as to be prevented from turning or revolving in the case, so that the whole power of the conical screw shall be reserved for the propulsion of the clay through the former and die.

It is also essential to the perfect working of the machine, that the bar of clay should emerge from the die with smooth, unbroken edges, and with a surface even and plain, but not so glazed or polished by the inner surface of the die as to render it a bad absorber and radiator of heat, and interfere with the free escape of moisture from the interior of the brick.

In my patent of October 6, 1863, I described a method of preventing the turning of the clay in the case by roughening or checkering its inner surface. While this prevented the revolution of the mass of clay, it also offered some obstruction to its movement toward the die.

The object of the present invention or improvement is, to prevent the rotatory movement of the clay in the tapering case without obstructing its forward progress, and to facilitate the sliding of the clay through the case, former and die, while obviating the excessive smoothness of surface which would retard the drying of the bricks and produce checking and cracking in drying and burning.

My improvements consist in substituting for the checkered surface heretofore given to the interior of the tapering case, longitudinal corrugations or flutes, said flutes being ratchet-shaped, with the short and steep side presented toward the resistance, so as to offer the greatest obstruction to the rotation of the

clay, while presenting none to its longitudinal movement.

My improvements further consist in inclosing the screw-case, former, and die, with a jacket of steam, for the purpose of heating them, whereby the clay is caused to slide much more freely on their interior surfaces, in consequence of the breaking up of the adhesion between said surfaces and the moving mass of clay.

The heat in the die converts the water in the superficial stratum of the clay into vapor, which escapes from the bar as this issues from the die, thus breaking up the close glazed surface which it would otherwise have, facilitating the drying of the bricks, and preventing much of the checking and cracking which occur in drying and burning under ordinary conditions.

In the accompanying drawings which illustrate my improvements—

A marks the tapering-screw case, with its interior surface corrugated with longitudinal flutes. The ratchet form of these flutes is shown in dotted lines in fig. 1.

Hinged to the screw-case is the former F, and to the former is attached the die D.

Around the screw-case A is the steam-jacket J, which receives steam through pipe P, the water of condensation escaping through pipe P', on the lower side of the case.

A similar jacket, K, surrounds the former and die, receiving its steam through pipe Q, and discharging the condense water through pipe Q'.

Having thus fully described my invention,

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

1. In a brick-machine, constructed and operating as described, the screw-case A, fluted or corrugated upon its interior surface, substantially in the manner and for the purpose set forth.

2. The combination and arrangement of the steam-jacket J, and corrugated screw-case A, in the manner and for the purpose described.

3. The combination and arrangement of the steam-jacket K, and the former E and die D, in the manner and for the purpose stated.

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. DAMBORG.