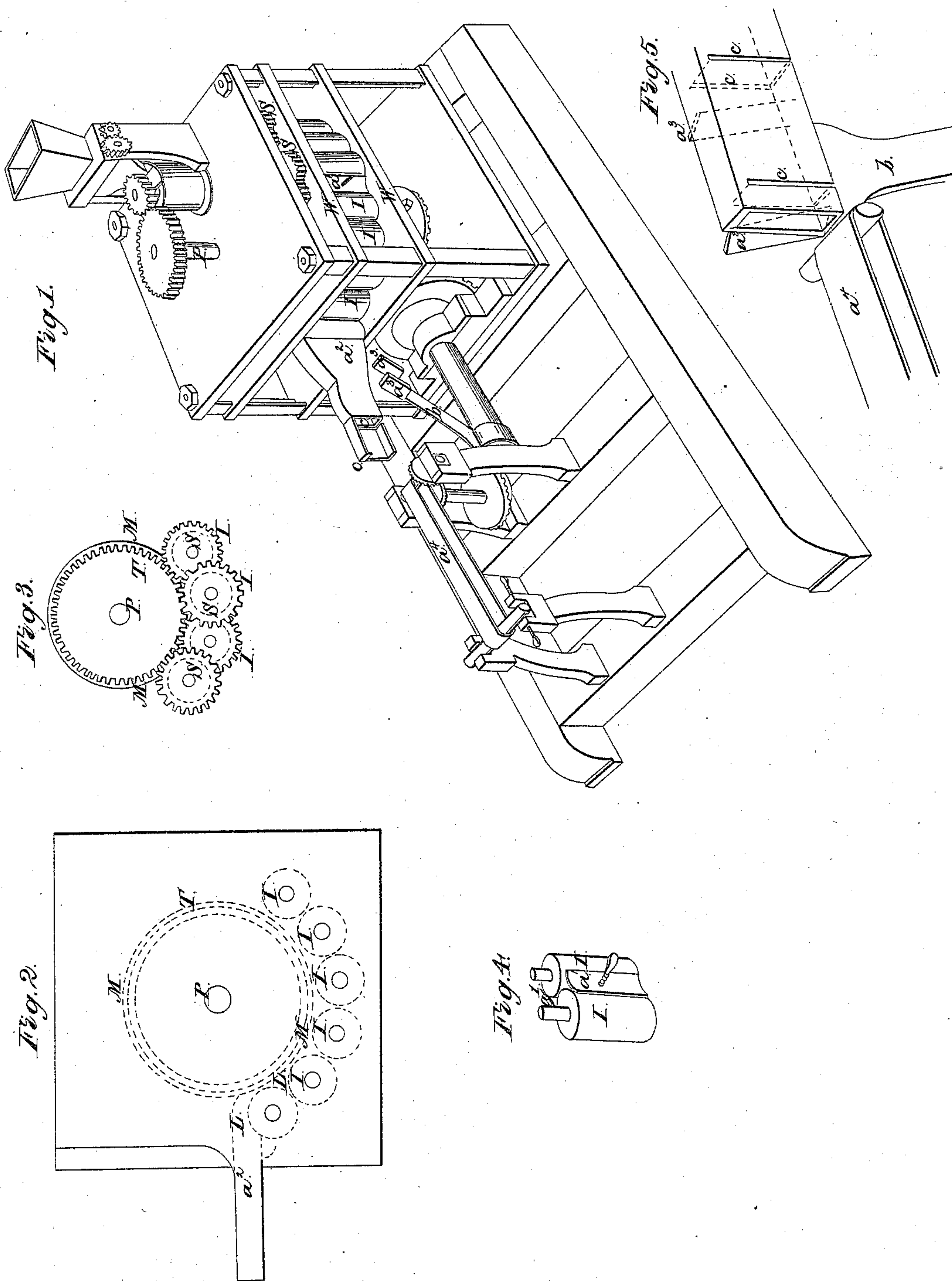


*S. C. Salisbury,*  
*Brick Machine.*

*N<sup>o</sup> 21,025.*

*Patented July 27, 1858.*





# UNITED STATES PATENT OFFICE.

S. C. SALISBURY, OF MILWAUKEE, WISCONSIN.

## BRICK-MACHINE.

Specification of Letters Patent No. 21,025, dated July 27, 1858.

*To all whom it may concern:*

Be it known that I, SILAS C. SALISBURY, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain Improvements in Making Brick and Pottery by Machinery, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawings, of which—

Figure 1 is a perspective view of the machine; Fig. 2 a horizontal section through the middle of the pressing rollers and forming die; Fig. 3, a horizontal section through the gears connecting the inner and outer rollers; Fig. 4, a detached view showing two of the pressing rollers and the spring guard plates between them. Fig. 5, is a detached view of the die, and double knife for cutting off the bricks.

My invention consists in certain improvements in making brick and pottery by machinery, described, represented and specified as follows.

In a strong frame work I mount a large vertical cylinder or roller M, shown in dotted lines of Fig. 2, which turns with the vertical axis P. Around the periphery of this large cylinder M are arranged a series of small rollers I which are connected by the gears S on their axes with the large gear T on the wheel M. The upper and lower walls, W, W, of the channel L are formed by strong plates attached to the frame work of the machine and the lateral walls of this channel are made by the rollers I, M, and adjustable spring guard plates  $a'$   $a'$  shown clearly in Fig. 4. These plates are made elastic and are kept in contact with the surface of the small rollers so as to prevent the clay from being carried out between the rollers. These plates subtend the angular spaces between the small rollers forming part of the lateral wall of the channel L and are so arranged that the periphery of the rollers project somewhat beyond them into the channel. The width of the channel or the distance between the small and large rollers may vary from one quarter to one inch according to the character of the clay

or the extent of working required upon it as the clay comes into the channel the rollers act continuously upon it carrying it forward to the forming die  $a^2$  and at the same time pressing, kneading and tempering it and disengaging any superfluous moisture, so that by the time the clay reaches the last series of rollers and is ready to be forced into the die  $a^2$  it is formed into a tenacious, homogeneous mass capable of making the finest quality of brick.

As the channel L is not air tight, and the forming die  $a^2$  is open at the ends there is no resistance to the passage of the clay from compressed air, no air entangled in the clay, and the whole mass therefore becomes very solid and tenacious. As the clay is passing through the forming die it is cut into bricks of the right length by the revolving double knife  $b$ . This knife consists of two thin steel blades  $a^3$  upon the extremity of a revolving arm  $b$ . The blades pass through the narrow slits  $c$   $c$  in the forming die and through the clay, the cutting being done so quickly that it is not necessary to stop the machine to allow the brick to be cut. The die is shown in Fig. 1 with parts removed and in Fig. 5 is shown entire. The brick presents its broadest face and least thickness to be cut by the knife. After the brick is cut it is pushed out of the die by the moving mass of clay and the cut brick is received upon the endless apron  $a^4$  to be taken away.

This process is found to be applicable to the forming of tile, pipes, moldings and pottery generally and succeeds with different qualities of clay although its best work is performed with tough clays, being just the reverse in this respect of brick machinery generally where tenacity of the clay is a serious impediment to making brick by machinery. If the clay is properly selected the bricks will need scarcely any drying after they are molded, and a most important feature of my improvement is the ability to work at the business constantly without interruption from wet weather.

Another great advantage is in the fine finish of the brick its faces becoming glazed as it were by passing through the dies so that they are admirably adapted to the operation of enameling for the purpose of excluding moisture and for ornament.

What I claim as my invention is—

1. The large cylinder M in combination with a series of small cylinders I spring guard plates  $\alpha'$   $\alpha'$  and die box  $\alpha^2$  the whole  
5 being arranged and operating as set forth.

2. I claim cutting the bricks of the required lengths from the continuously mov-

ing body of clay by means of the double knife passing through the forming die in the manner herein set forth.

S. C. SALISBURY.

Witnesses:

CHAS. G. PAGE,  
I. N. CAMPBELL.