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J. J. Alvord,

Brick Machine.

No 35,287.

Patented May 20, 1862.

Fig. 1.

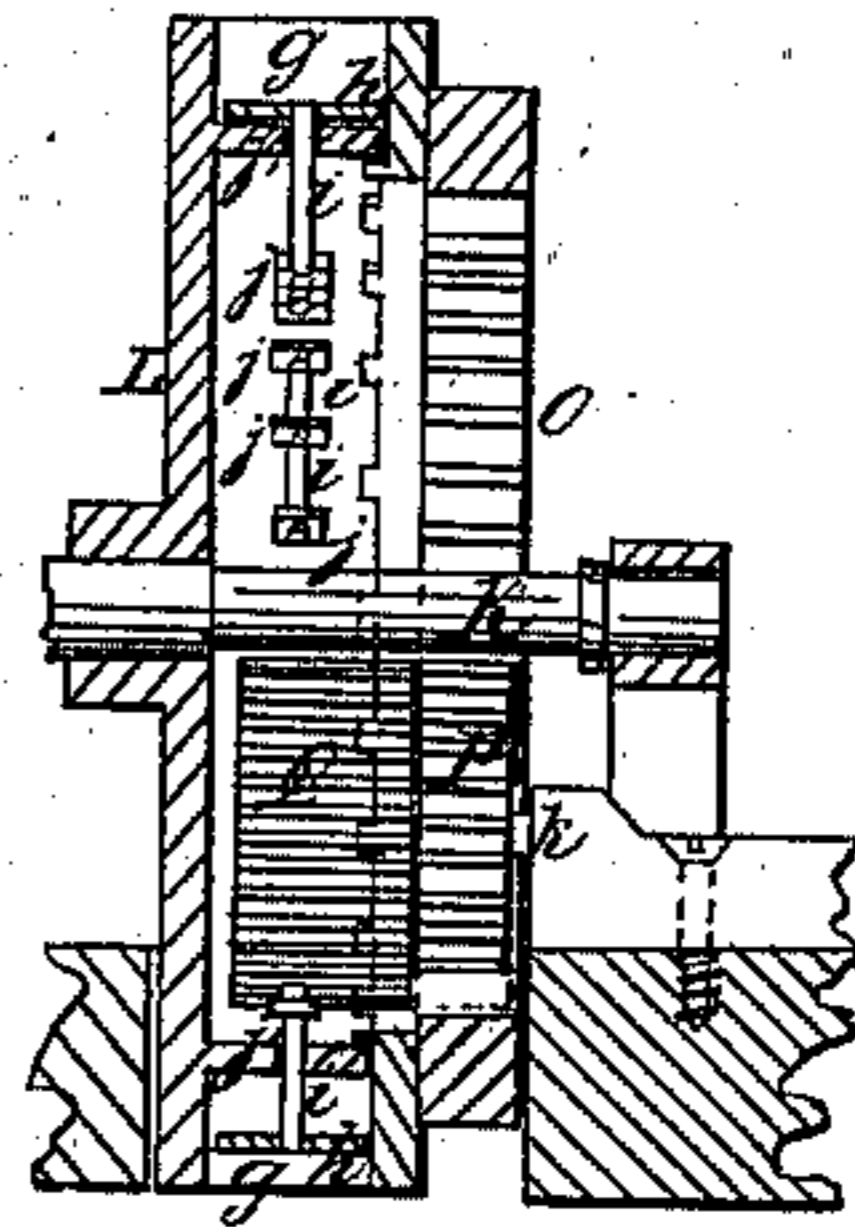
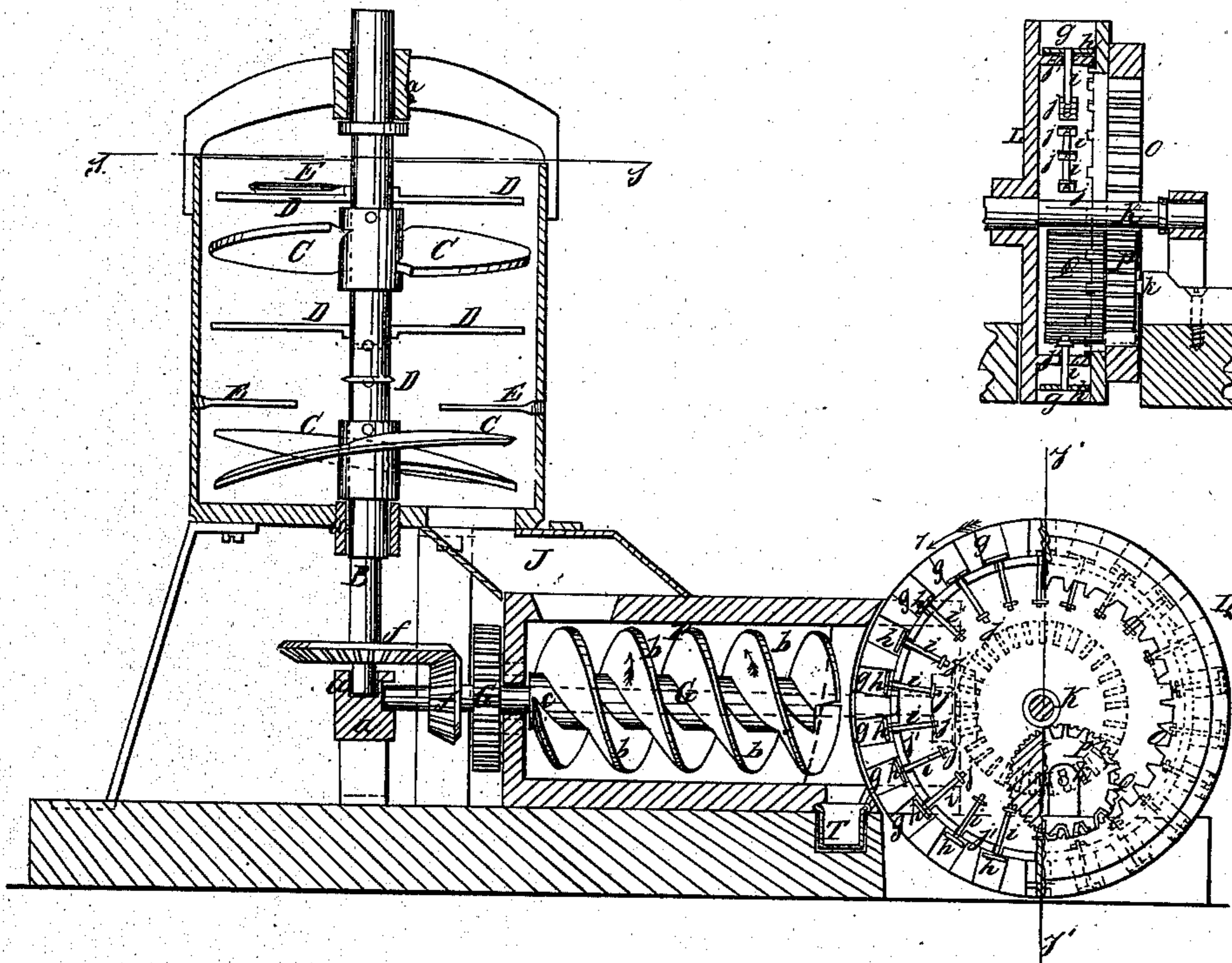
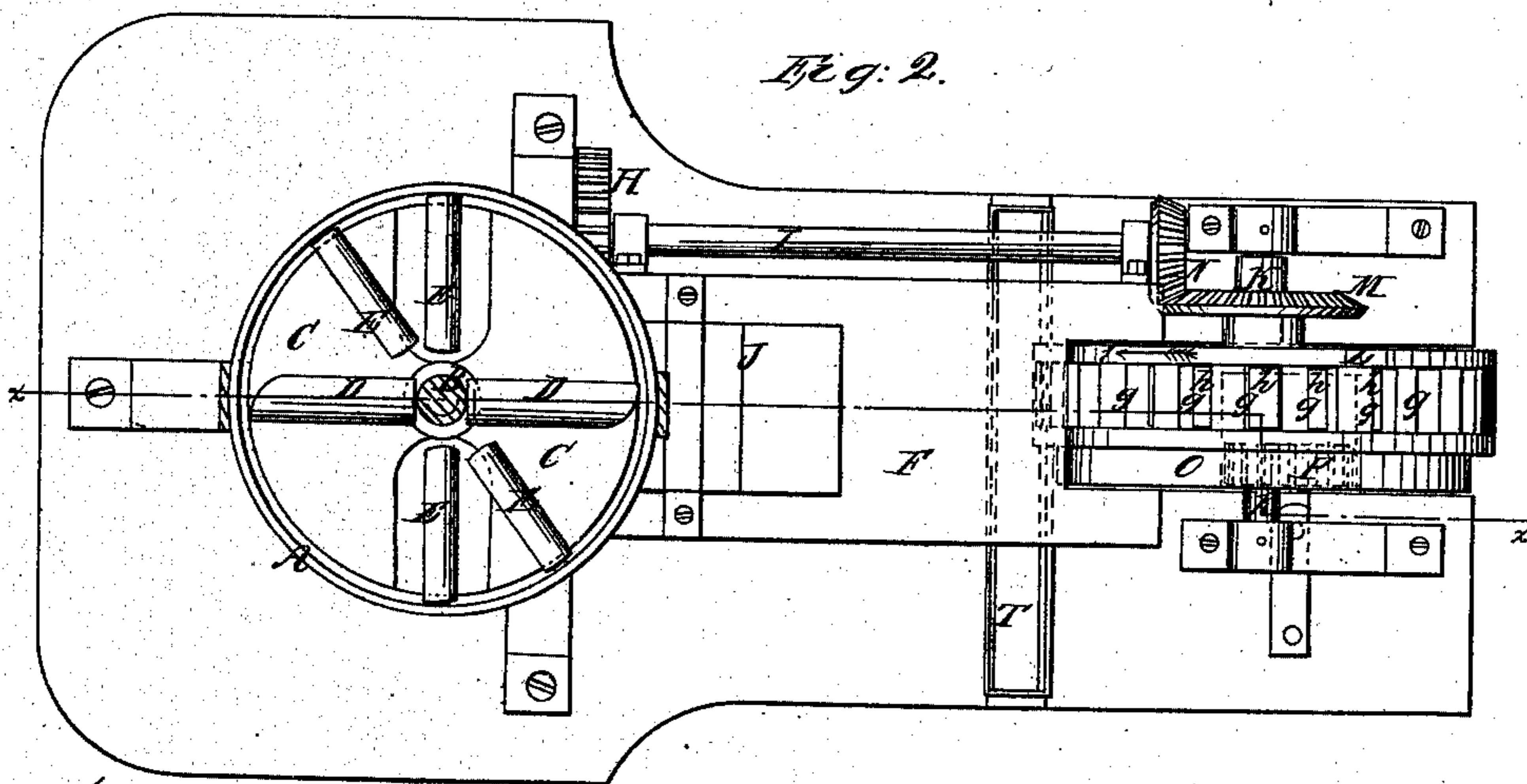


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN J. ALVORD, OF TECUMSEH, MICHIGAN.

MACHINE FOR MOLDING AND PRESSING BRICK.

Specification of Letters Patent No. 35,287, dated May 20, 1862.

To all whom it may concern:

Be it known that I, JOHN J. ALVORD, of Tecumseh, in the county of Lenawee and State of Michigan, have invented a new and Improved Machine for Molding and Pressing Bricks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1: is a side sectional view of my invention taken on the line $x-x$, Fig. 2. Fig. 2: is a horizontal section of the same taken on the line $y-y$, Fig. 1. Fig. 3: is a transverse vertical section of the same taken in line y' , Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in a novel and improved clay tempering device, rotary mold wheel, and screw feeder, constructed and arranged substantially as hereinafter fully shown and described, whereby the whole process of molding and pressing bricks is performed by mechanism having a rotary motion, the working parts being so arranged as to admit of a quick movement, without the liability of getting out of order or deranged in any way.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A represents an upright hollow cylinder through which a vertical shaft B, passes centrally, said shaft being fitted in suitable bearings a . To this shaft B, there are secured spiral flanches C, C, and knives D, the latter being attached to the shaft horizontally in pairs, one pair being above the upper flanches C, and the other pair or pairs between them, as shown clearly in Fig. 1. The flanches C, C, are also attached to the shaft B, in pairs. To the inner side of the cylinder A, there are secured horizontal knives E, which have a radial position. Any suitable or desired number of these knives E, may be used and they are attached to the cylinder A, at such points that will not admit of their interfering with the rotation of the flanches C, and knives D.

F, is a horizontal box or receiver in which a screw G is placed horizontally as shown clearly in Fig. 1. The flanch b , of the screw G, extends nearly to the sides of the box F, and the front end of the screw shaft c , passes

through the front end of the box F, and has a wheel G, upon it into which a wheel H, on a shaft I, gears. The front end of the screw shaft c , has its bearing in the same block d , as the lower end of the shaft B, and the two shafts B, c , are connected by bevel gears f, f , as shown in Fig. 1. The lower part of the cylinder A, communicates with the box or receiver F, by means of a sprout J.

K, is a shaft which is placed just beyond the back of the box or receiver F, and has a wheel L, upon it, the back part of which works in the end of the box or receiver F. This wheel L, has its periphery perforated with oblong rectangular openings g , which form the brick molds and in each mold g , there is placed a piston or plunger h , the area of which corresponds to that of the molds. The pistons are each provided with a rod or stem i , and their rods or stems project through a "sole" or circular plate j' , which forms the inner periphery of the wheel L, as shown in Figs. 1 and 3. The rods or stems i , are each provided with a button j , at their inner ends.

The wheel L, is permanently attached to its shaft K, and on this shaft there is placed a bevel wheel M, into which a bevel pinion N, on the shaft I, gears as shown in Fig. 2. To one side of the wheel L, there is attached concentrically a toothed rim O, the teeth being at the inner edge of the rim and having a pinion P, gearing into them which works on a small shaft k , that enters wheel L. The pinion P, has a cylinder Q, attached to its inner end, the periphery of which is corrugated as shown in Figs. 1 and 3.

T, is a box which is fitted transversely in the lower part of the box or receiver F, and just back of the wheel L, as shown in Fig. 1, and the lower front end of the box or receiver F, is made of V form as shown at a' , to serve as a scraper and take the superfluous clay from the periphery of the wheel L, and also to smooth and compact the clay at the surfaces of the molds g . The box or slide T, receives stones or other hard foreign substances in the clay which cannot be embedded in the molds and consequently project out from their orifices. This box T, may be removed at pleasure for the purpose of being emptied of its contents.

The operation is as follows: The clay to be molded and pressed is thrown in a properly moistened state into the upper end of the hollow cylinder A, and the shaft B, is

rotated by any convenient power. The clay is ground or comminuted by the action of the rotating knives D, and stationary knives E, the spiral flanches C, C, serving to press the clay downward within the cylinder A. When the clay reaches the bottom of cylinder A, it is properly ground and tempered and is forced through the spout J, into the box or receiver F. The screw G, which is rotated from the shaft B, by means of the bevel gears *f, f*, forces the clay within the box or receiver F, to the wheel L, and into the molds *g*, thereof said wheel rotating in the direction indicated by the arrow 1. The screw G, compacts the clay firmly in the molds *g*, forcing the pistons or plungers *h*, back to the inner ends of the molds. The filled molds as the wheel L, rotates of course pass out from underneath the end of the box or receiver F, and so the inner ends of the rods or stems *i*, come in contact with the cylinder Q, the plungers *h*, are forced down and the molded clay ejected from the molds. The cylinder Q, it will be seen is rotated in consequence of the pinion P which is attached to it gearing into the toothed rim O. The molded clay may be discharged upon an endless apron or any suitable carrier to convey them from underneath the wheel L. The wheel L is rotated from shaft I, through the medium of the gearing M N.

Thus it will be seen that all the working parts of the machine have a continuous rotary motion and consequently will work smoothly and well without the liability of getting out of repair.

I do not claim broadly and separately a rotating mold-wheel provided with plungers for that has been previously used, nor do I claim a mold or clay-tempering mill, separately or in itself considered, but

Having thus described my invention what I claim as new and desire to secure by Letters Patent is—

1. The rotating clay-grinding or tempering device formed of the knives D, and spiral flanches C, shaft B, and the stationary knives E, in cylinder A, in combination with the feeding screw G in the box or receiver F and the rotary mold-wheel L provided with the plungers *h*, substantially as and for the purpose herein set forth.

2. The box T, placed transversely in the lower part of the box or receiver F and in such relation with the mold-wheel L and projection *a'* to operate as and for the purpose specified.

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Witnesses:

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