

**VANIER'S IMPROVED BRICK MACHINE.**

The new brick machine represented in our engravings belongs to that class in which dry or damp clay is moulded by the application of heavy pressure. Its action is continuous, one pair of moulds being filled while the contents of another pair are being pressed. The construction is as follows:

The pairs of moulds, A, are formed upon the table, B, Fig. 2, and said table is supported by a vertical shaft. The main shaft, C, of the machine carries a heavy fly wheel. Placed above and below the shaft and table are the working beams, D, Fig. 1. The shafts of these beams roll on a flat surface in the ends of the standards, E, and are forced apart by springs. From one beam a tooth projects which is received in a mortise in the other. Above the table is a guide, F, supported by a spider which contains a follower having on its under surface projections which fit the moulds in the table. Means are provided for drawing together this follower, an intermediate block and the upper beam. Connected with the lower beam is another and similar follower. To the rear end of the beams are attached arms which engage with cam lugs on the shaft, C, Fig. 1. Said lugs are arranged diametrically opposite on the shaft and engage the two parts of the toggle simultaneously. The upper cam lug is the wider, so that the motion of the shaft is communicated to the upper beam longer than to the lower one. The toggle arms communicate by means of links with a rocking shaft, and this last communicates with a pivoted lever, G, which carries a roller engaged by a cam on the shaft, H. This shaft is rotated by gearing with the main shaft.

The lever, I, Fig. 2, is pivoted to an arm attached to the rear end of the frame, and is connected with a follower moving on guides formed on the spider. It also has two projections which fit the moulds on the table, and a cam opening which surrounds a disk on shaft, H. J is an endless apron which is moved intermittently. Above the table, B, there is a cylinder, K, in the bottom of which are two openings corresponding to a pair of the moulds in the table; and also several screw blades attached to a rotary vertical shaft.

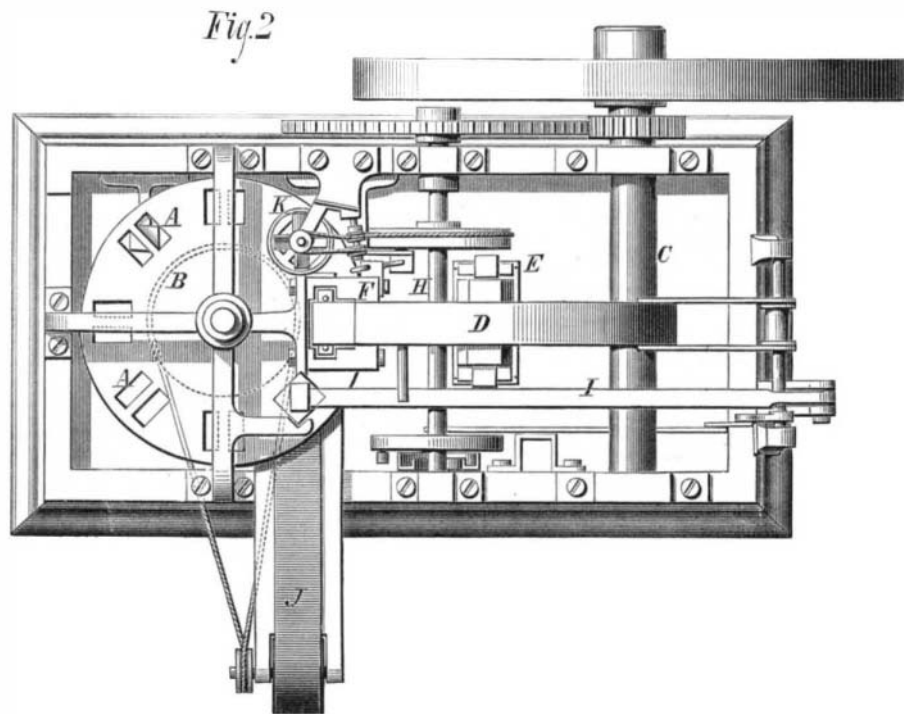
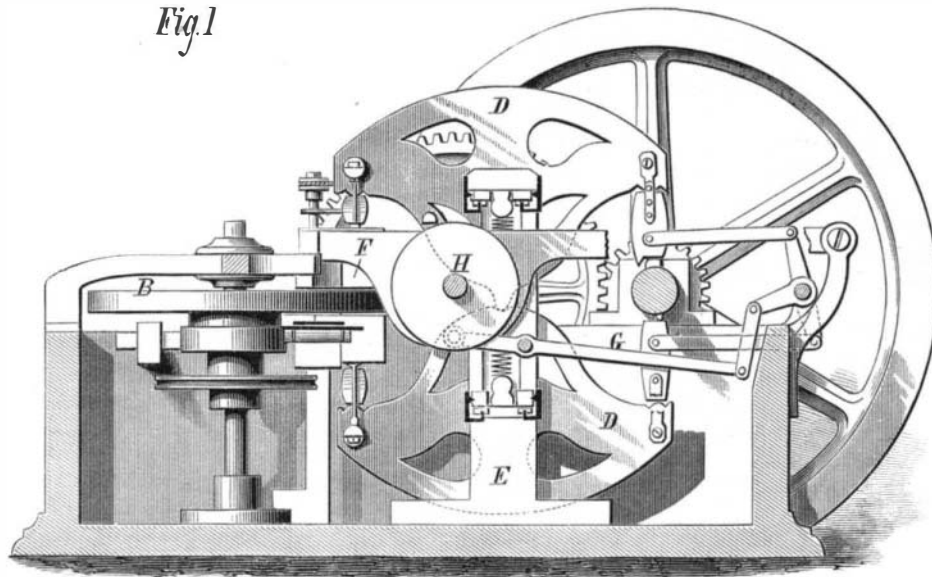
The operation of the machine is as follows: The clay is placed in the cylinder, K, whence, being agitated and pressed down by the blades, it passes to the moulds. The table is then at rest, and a plate beneath prevents the clay dropping through. While one pair of moulds is being filled another pair containing clay is being pressed by the straightening of the toggle arms on the beams. The greater width of the upper cam on the main shaft causes the upper

follower to move the brick downward in the mould after it is pressed, thus loosening it. After the bricks are pressed they are moved forward by the rotation of the table, B, and discharged from the mould by the follower on the lever, I, the table over which the endless belt, J, passes having pre-

machine, when they may be removed. When the lever, I, is raised by rollers in the periphery of a disk it strikes a pin on the upper beam, causes the latter to rise, and by the interconnection between this beam and the lower one both are thus moved away from the moulds. In the present case

the cam acts at every fourth revolution of the main shaft, and this intermittent action is secured by holding the toggle cams out of the engagement with the cams while the shaft makes three revolutions, and moving them so that they are caught by the cams at the fourth revolution by means of the connection of the arms with the lever, G, which is moved at the proper instant by the cam on shaft, H. The motion of the fly wheel is accelerated during the three revolutions in which no work is done, and as it is of large diameter and great weight, its momentum is sufficient to exert the required pressure. The inventor states that there is no lateral strain upon the main shaft, as it simply revolves between the toggle arms, and the pressure exerted by the cams is alike above and below. All of the bearings, where any considerable strain is exerted, are constructed with rolling surfaces, so that the friction of the machine is reduced to a minimum.

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**VANIER'S BRICK MACHINE.**

**BAUGH'S PATENT SECTIONAL MILL.**

In the annexed engravings are presented sectional and perspective views of a new mill in which a sectional system of grinding surfaces is adopted. Such grinding sections as may be broken or worn out may be replaced without renewing all, and various kinds of plates can be inserted to suit any sort of substance to be ground. This change can be very easily and quickly effected. The grinding surfaces are claimed to be arranged so as to be strong and to be subject to the smallest possible wear and tear. Their disposition will be readily understood from Fig. 2.

The No. 1 mill or crusher (Fig. 1) weighs about four tons. A still larger size is made specially for glue manufacturers. The variety of surface "dress" which is attainable under the system of casting in sections is very great, and to each class of substances to be reduced can be applied its appropriate grinding surface. Thus the mills are used not only for hard and brittle substances like minerals, ores, etc., but also for tough raw bones, damp guanos, pork and beef cracklings, and woods.

Each mill is complete in itself, bed plate, countershaft,

viously risen to receive them. This table descends simultaneously with the follower, and when the table, B, makes another forward movement the endless apron is rotated sufficiently to carry the bricks outside the framework of the

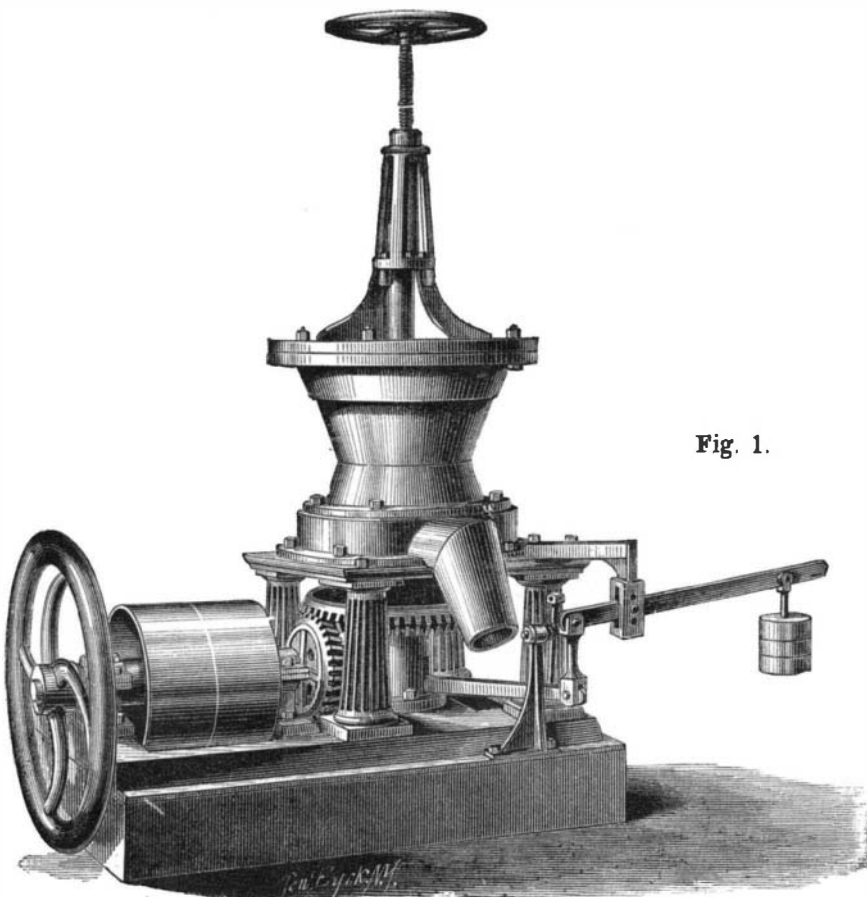
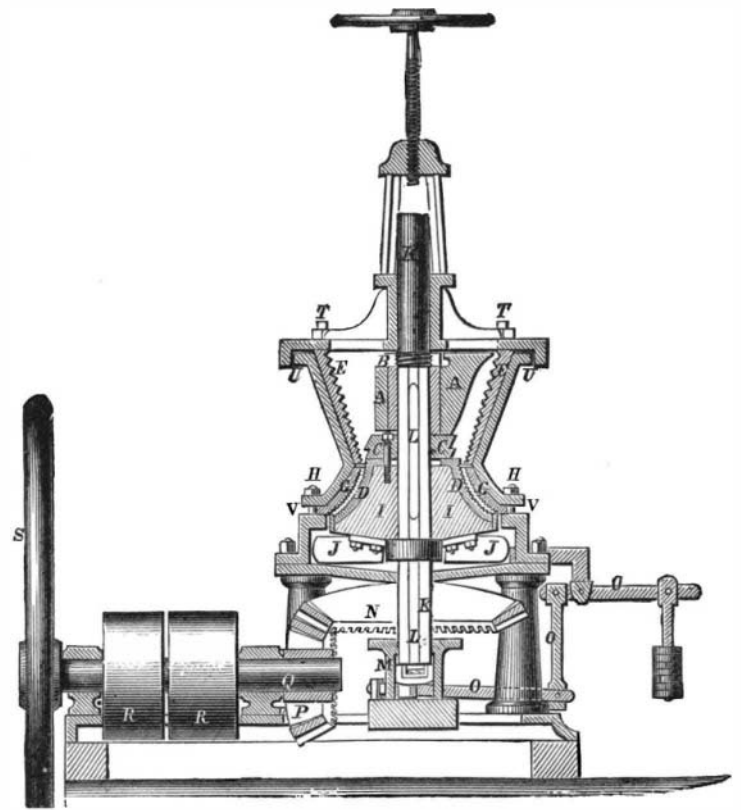


Fig. 1.



**BAUGH'S PATENT SECTIONAL MILL.**