F. B. LAMBERT.

CLAY WORKING MACHINE.

APPLICATION FILED MAR. 23, 1908.

914,735. Patented Mar. 9, 1909.

Fig. 1.

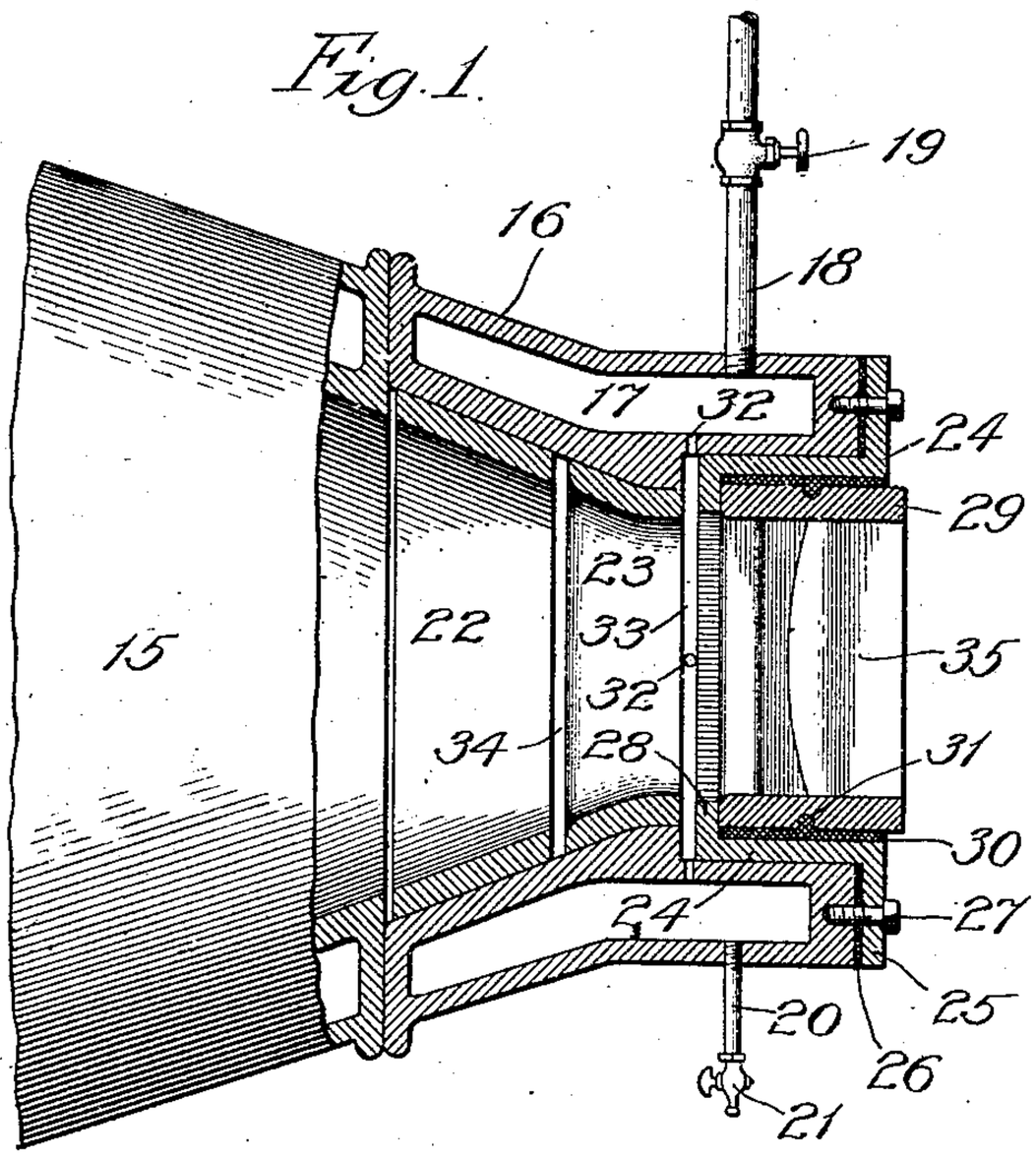


Fig. 4.

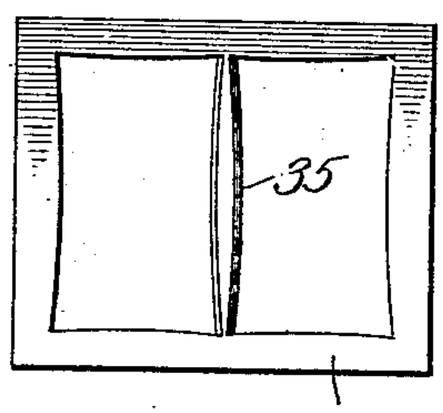


Fig. 2.

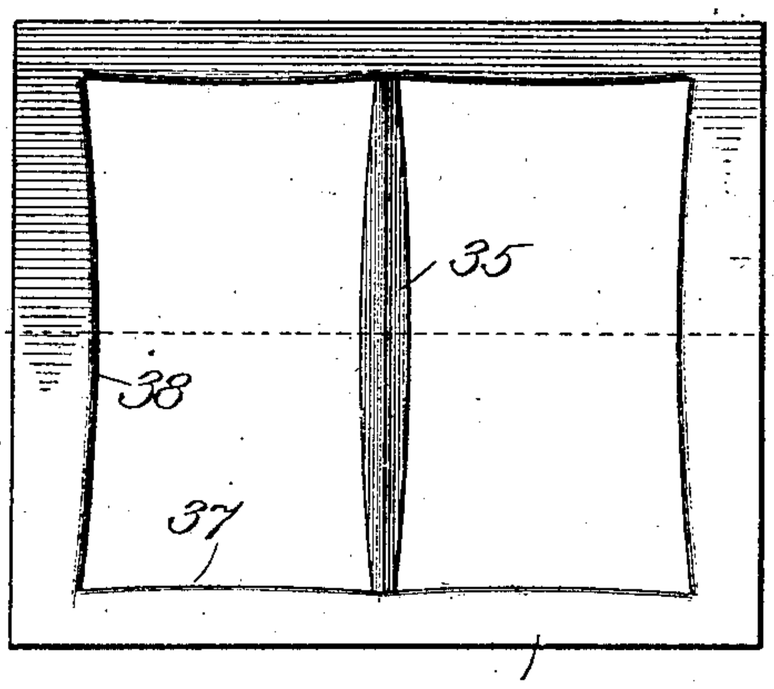
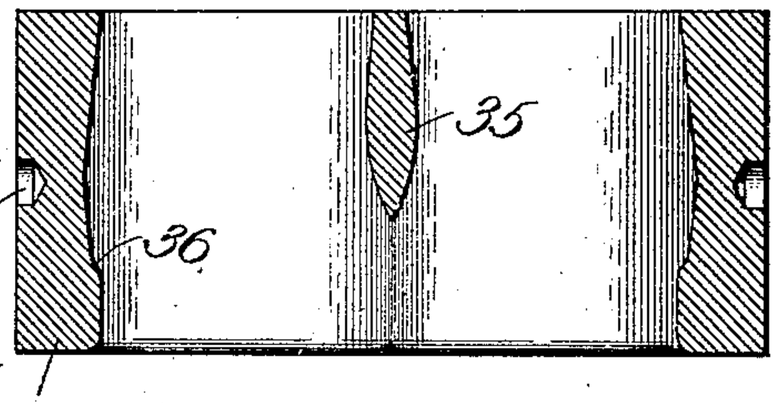


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK B. LAMBERT, OF CHICAGO, ILLINOIS.

CLAY-WORKING MACHINE.

No. 914,735. Specification of Letters Patent. Patented March 9, 1909.

Application filed March 23, 1908. Serial No. 422,695.

To all whom it may concern:

Be it known that I, FRANK B. LAMBERT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Clay-Working Machines, of which the following is a specification.

The object of my invention is to provide a new and improved former for a clay working machine.

Further objects are to provide an improved former lining and an improved die.

These objects and others will be made apparent in the following specification and claims, taken in connection with the accompanying drawings—in which

Figure 1 is a sectional elevation of my improved former; Fig. 2 is a rear view of the die. Fig. 3 is a horizontal section of the die, and Fig. 4 is a front view of the die.

The reference numeral 15 represents the end of the tempering case of a clay-molding or brick-making machine. Attached to this is the former casing 16 which has an annular steam chamber 17 in its walls. This is supplied by a steam supply pipe 18 with the controlling valve 19, and drained by an outlet pipe 20 controlled by the cock 21. This former casing has a sectional lining, the first section being 22, the next section 23, and the third section, comprising the die, 29. A frame 24 is adapted to be inserted within the end of the former casing 16, and it has a lip or flange 25 which abuts the end of the former casing, a gasket 26 being interposed. An in-turned lip 28 is provided about the inner edge of the frame 24. Stud bolts 27 secure this frame 28 to the former casing. Within it is the die 29, secured thereto by means of a filling of Babbitt metal 30. Little pockets 31 are drilled into the die 29, so as to give the Babbitt metal a secure hold. Small holes 32 lead from the annular steam chamber 17 into the space 33 between the lining section 23 and the die holding frame 24, thus permitting steam to come in contact with the surface of the plastic material as it passes into the die 29. A space 34 is left between the lining sections 22 and 23.

The die 29 is a substantially rectangular collar bisected into two substantially rectangular spaces by the blades 35. This blade is thicker and wider at its middle than at its extremities, its shape being accurately shown in the various views of the drawings. The cutting edge of the blade is within the rectangular frame or collar 29, and those walls of the die which are parallel to the blade 35 are recessed opposite the cutting edge of said blade—as indicated by the reference numeral 36—so as to allow somewhat for the displacement of the clay, due to the thickness of the blade. Toward the front end of the die the thickness of the blade is diminished, and the side walls of the die are brought inward correspondingly. The walls of the die 29 have a slight inward bulge, as indicated by the reference numerals 37 and 38, so that each presents a convexity toward the interior of the frame. Similarly, the blade 35 has its sides convex toward the interior.

The clay to be molded into bricks is tempered in a manner well known in the art, and is advanced by means of a screw—not shown—through the tempering casing 15 to the former. As is apparent in Fig. 1, this has a constantly diminishing section, so that the clay is brought down to the desired size and shape as it advances. Naturally, considerable wear comes on the lining of the former, and the wear increases as the cross section decreases. I have accordingly made this lining in sections, so that when any one section is worn out, it can be replaced without sacrificing the remaining sections. The lining is kept hot by the steam jacket, and this facilitates the passage of the clay in a manner well known in this art.

To further facilitate the passage of the advancing column of clay through the die, steam jets are admitted to the surface thereof through the holes 32, thus serving to lubricate the outer surface of the column of clay. The terminal section of the former lining comprises the die which splits the advancing column of clay into two columns, giving the surfaces of each a slight concavity, as is desirable for bricks. The clay then issues from the die in two equal parallel bars or columns, each having the cross section desired for a brick. Thereafter—in a manner well understood by those skilled in the art—the columns of clay may be sanded and cut into brick lengths.

The terminal lining section or die is subjected to the greatest wear and must frequently be replaced. When it is desired to make the change, the stud bolts 27 may be removed and the frame 24 with the contained die taken out and replaced by a similar frame containing a fresh die. Then, at

leisure, the Babbitt metal 30 may be melted out from the frame 24 that has been removed. It is apparent, however, that the brick machine need be stopped only a very few minutes to change dies.

An important feature of my invention is the recessing of the side walls of the die, as indicated by the reference numerals 36. Without such recessing, the friction due to compressing the clay between the blade and the side walls would be so great that the clay would have a tendency to advance on that side of the machine where the point of the feeding screw was. By recessing the sides, as has been described, the two columns of clay advance through the die simultaneously and uniformly. However, after the clay has passed the cutting edge of the blade, the side walls of the die are brought inwardly again and the sides of the blade are correspondingly retracted, so as to bring the two bars or columns of clay into parallel, in order that they may be readily sanded together, and then cut into brick lengths and economically handled.

It will be seen that the clay in its course through the machine traverses a passage which decreases in cross section becoming uniform in cross section further on. In Fig. 1 the transition from a diminishing cross section to a uniform cross section takes place in the liner 23. At some distance beyond this transition point the cutting blade is introduced in the passage of uniform cross section and the aggregate cross section of the two passages on the sides of this blade is made equal to the cross section of the passage just before reaching the cutting edge of the blade.

It will be seen that I have provided a die that permits the formation of two columns of brick simultaneously, and that I have provided a former lining which can readily be replaced in sections when worn out. Moreover, the die can be interchanged with a minimum loss of time when that becomes desirable.

I claim:—

1. A die for a brick-making machine consisting of a substantially rectangular frame having a cutting blade across the middle thereof, the walls of the frame parallel to said blade being recessed opposite the cutting edge of the blade.

2. A die for a brick-making machine consisting of a substantially rectangular frame having a cutting blade across the middle thereof, the thickness of the blade first increasing and then decreasing away from the blade, and the walls of the frame that are parallel with the blade being recessed to correspond with the increasing thickness of the blade and then brought inwardly to correspond with the decreasing thickness of the blade.

3. A die for a brick-making machine consisting of a substantially rectangular frame having a cutting blade across the middle thereof, the walls of the frame that are parallel with the blade being recessed opposite the cutting edge of the blade, and said walls being brought inwardly beyond the recesses thereof.

4. A die for a brick making machine consisting of a substantially rectangular frame having a cutting blade across the middle thereof, the walls of the frame parallel to said blade being each recessed opposite the cutting blade so as to give the spaces on either side of the cutting blade a substantially uniform cross section.

5. A die for a brick making machine consisting of a substantially rectangular frame having a cutting blade completely across the middle thereof, the walls of the frame parallel to said blade converging in the direction of movement of clay therethrough, whereby the columns of clay issuing from the die are kept close together.

6. In a brick making machine a former casing, a lining for said casing the cross section of said lining decreasing in the direction of movement of the clay therethrough up to a certain point, and a transverse cutting blade across the middle of the lining at a point farther on, the cross section of the lining before reaching the blade being the same as the aggregate cross section of the passages on both sides of the blade.

7. A brick making machine comprising a casing through which the clay is delivered from the machine, and a transverse blade within said casing, the cross section of the casing before reaching the blade being uniform and the aggregate cross section of the passages on both sides of the blade being the same.

8. A brick making machine comprising a casing through which the clay is delivered from the machine, and a cutting blade across the middle thereof, the walls of said casing having offsets at points opposite the cutting edge of said blade.

In testimony whereof, I have subscribed my name.

FRANK B. LAMBERT.

Witnesses:
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