

No. 815,398.

PATENTED MAR. 20, 1906.

F. ALSIP.
CLAY WORKING MACHINE.
APPLICATION FILED APR. 24, 1905.

Fig. 1.

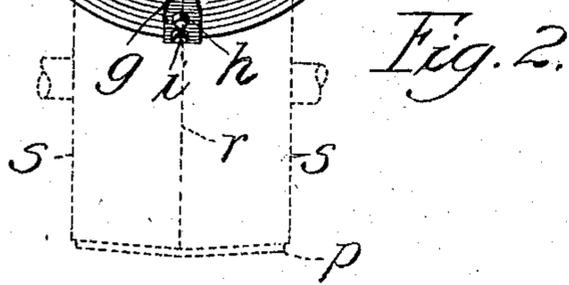
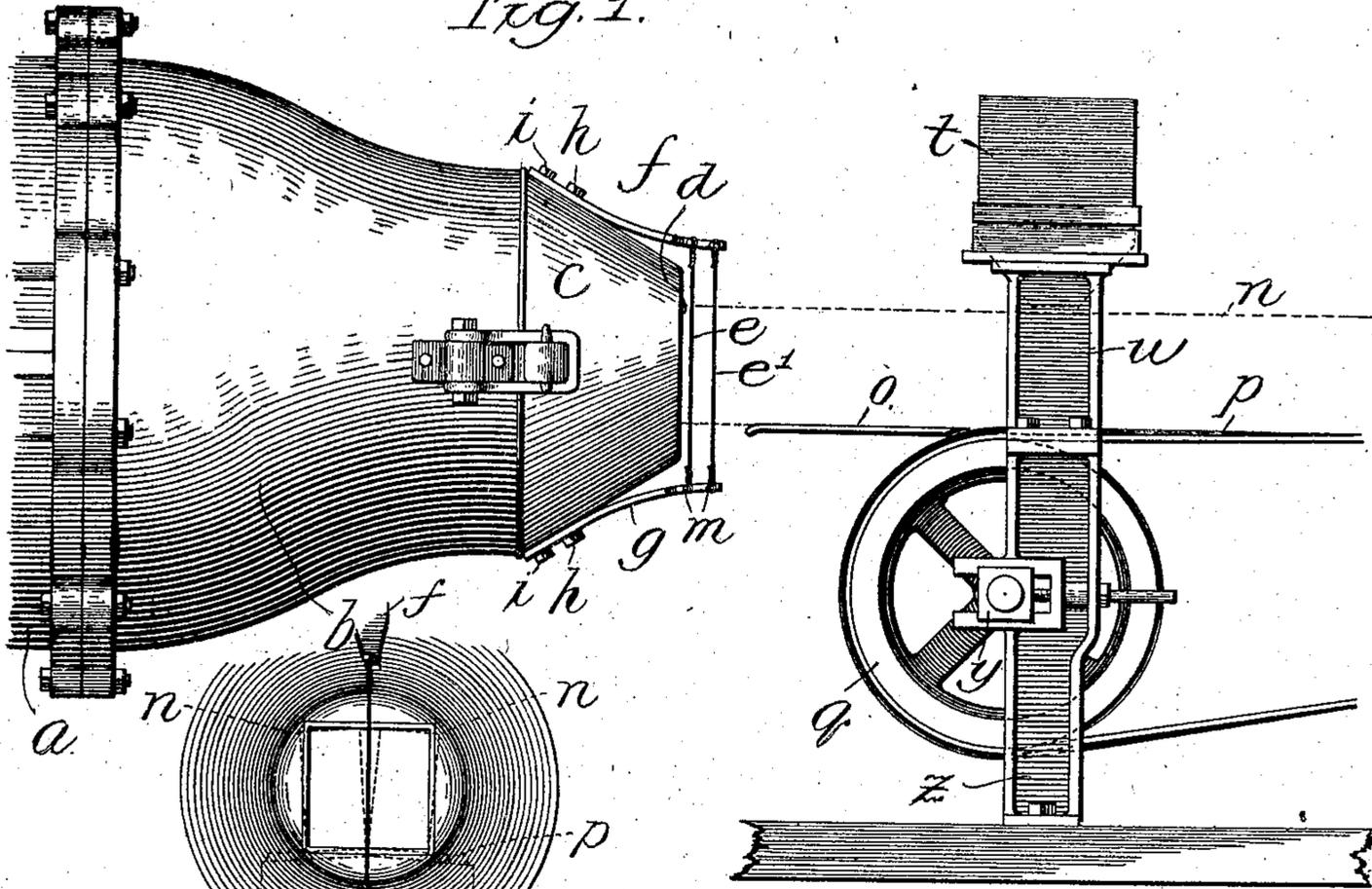


Fig. 5.



Fig. 3.

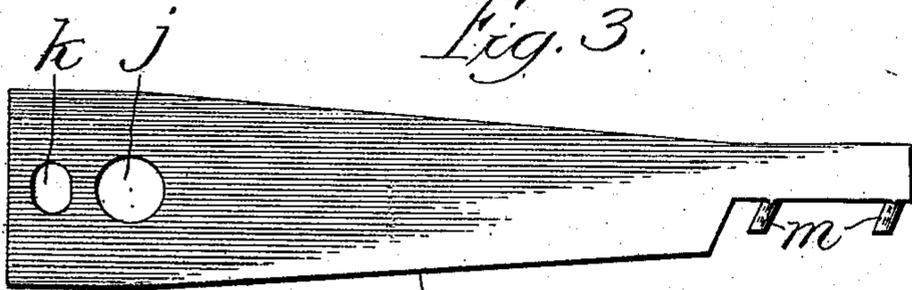


Fig. 4.



Witnesses:

Edw. C. Gaylord,
John Enders.

Inventor:

Frank Alsip,
By Thomas F. Sheridan,
Att'y.

UNITED STATES PATENT OFFICE.

FRANK ALSIP, OF CHICAGO, ILLINOIS.

CLAY-WORKING MACHINE.

No. 815,398.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed April 24, 1905. Serial No. 257,188.

To all whom it may concern:

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

My invention relates to that class of clay-working machines employed in the making
10 of bricks or bricks and tiles and having a nozzle provided with or forming a die or matrix, through which a column of clay in a plastic condition passes, such column of clay being
15 molded by the die or matrix into the desired form and adapted to be cut into sections or bricks in any ordinary and well-known manner.

It relates particularly to that class of clay-working machines known as "brick-making"
20 or "brick-molding" machines having a nozzle provided with a die or matrix integral therewith or secured thereto through which the column of clay passes to be cut into bricks after
25 emerging therefrom, being first separated into a plurality of columns and then cut into bricks of the desired size.

The principal object of my invention is to provide a simple, economical, and efficient
30 brick-making machine.

A further object of the invention is to provide a brick-making machine having a nozzle
35 provided with a die or matrix through which the column of clay operated upon passes and provided with means for separating the column of clay into a plurality of columns as it
40 emerges from such die or matrix, such column being adapted to be cut into sections of the desired dimensions to form bricks and the like.

A further object is to provide a suitable
45 cutter arranged outside the die or matrix through which the column of clay passes and adapted to be adjusted and supported in operative position to separate the column of
50 clay into a plurality of columns as it emerges or after it emerges from the die or matrix.

A further object is to provide cutter mechanism extending across the outside of the
55 mouth of the nozzle or die adapted to cut the column of clay emerging from the die into a plurality of columns and adapted to be readily renewed or replaced when broken.

Other and further objects of the invention will appear from an examination of the drawings and the following description and claims.

The invention consists in the features, com-

binations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1
60 is a side elevation of a portion of a brick-making machine provided with my improvements, showing the nozzle of the machine with my improved cutter mechanism mounted
65 thereon and extending across the discharge-opening or mouth of the nozzle or die and showing the mechanism for sanding the columns of clay and the carrier-apron and
70 its supporting-wheel mechanism; Fig. 2, a view in elevation of the apron-supporting wheel shown in Fig. 1, showing the adjacent sides of the columns of clay separated and
75 resting upon the carrier belt or apron; Fig. 3, a detail view of one of the cutter-supporting arms; Fig. 4, an edge view of the cutter-supporting arms shown in Fig. 3, and Fig. 5 a
80 detail view in elevation of one of the cutters.

In the art to which this invention relates it is well known that it is very desirable to form
85 a plurality of columns of clay, so that they may be simultaneously cut into sections or bricks of the desired dimensions, thus affording a great saving of time and greatly increasing the capacity of a machine. In order
90 to accomplish this, machines have been constructed which force the clay through a plurality of dies or matrices or through a die or matrix having a plurality of openings, the
95 clay emerging from such dies or matrices into two columns. It is found, however, in practice that the columns of clay thus formed cannot be caused to move at exactly the same rate of speed, and it is well known that
100 this is essential in order to accomplish the best results. By causing a plurality of columns of clay to move at the same rate of speed it becomes possible to cut such columns into sections or bricks of exactly the
105 same dimensions and by means of the same operation of the cutting device. The cutting may be accomplished in any ordinary and well-known manner. To accomplish these
110 objects and to overcome the above objections, instead of forcing the clay through a plurality of dies, so that it emerges from the dies in two columns, I provide a machine adapted to force the clay from the die in a single column and provided with cutter mechanism adapted to cut such single column of clay into a plurality of columns after it emerges from the die. By this means the columns are caused to be produced and to move at exactly the same rate of speed.

In constructing a brick-making machine provided with my improvements I provide a clay-containing cylinder *a*, forming a receptacle for containing clay to be operated upon 5 and having a concave or tapered member *b* and a nozzle *c* secured thereto in any ordinary and well-known manner. The nozzle may be of any ordinary and well-known type. It has a tapered axial passage or opening there- 10 through communicating with the receptacle for containing the clay and is provided with a die or matrix either integral therewith or secured thereto in any ordinary and well-known manner, forming top, bottom, and side mold- 15 ing-surfaces of the desired form for molding the column of clay *d*, which is forced through such die or matrix. The die or matrix member or members may be of any ordinary or known type, and as these dies are well known 20 in the art it is not deemed necessary to illustrate or describe them here.

My improved cutter mechanism, consisting of a plurality of cutters *e* and *e'* and cutter-supporting arms *f* and *g*, is secured in posi- 25 tion so that the cutter extends across the mouth of the nozzle and across the mouth of the die or matrix secured to or formed by such nozzle. The cutter-supporting arms are secured, preferably, to the nozzle by 30 means of bolts *h* and *i*. The bolts *h* pass through perforations *j* in the upper and lower cutter-supporting arms, respectively, and each of such cutter-supporting arms is provided with slots *k*, elongated transversely of 35 such arms and of the nozzle to which the arms are secured. The cutters *e* and *e'* are formed, preferably, of wire, having their opposite ends provided with loops *l*, which are mounted upon studs *m* of the cutter-support- 40 ing arms, such studs being preferably inclined backward in the direction of their outer ends, so as to hold the cutter-wires removably in position. The cutter-wire-sup- 45 porting arms are made of flexible material, preferably tempered steel, being curved or bent sufficiently so that they normally extend outward from the outer surface of the nozzle.

When the cutter-wires are attached to these resilient cutter-supporting arms, the arms 50 are pressed inward toward the outer surface of the nozzle and held at a tension by the wires, the cutter-wires being in turn held at the desired tension so as to efficiently cut the column of clay as it emerges from the die or 55 matrix into a plurality of columns each adapted to be cut into sections or bricks of the desired dimensions.

In order to enable the cutter-wires to be readily adjusted, it is only necessary to loosen 60 the bolts *h* and *i* sufficiently to permit the cutter-supporting arms to be moved transversely of the nozzle or die to the desired position, such movement being permitted by the elongated slot *k* in each of such cutter- 65 supporting arms. The cutters having been

adjusted to the desired position, the bolts are tightened and the cutters are held stationary in operative position.

When in operative position, the cutter *e* ex- 70 tends across the outside of the mouth of the die or matrix or the nozzle forming the die or matrix, so that the column of clay emerges from the mouth of the die, and after emerging therefrom it is cut into a plurality of columns 75 by the cutter. The plurality of columns *n* thus formed passes onto a supporting-plate *o* and from such supporting-plate to a carrier apron or belt *p*, which is mounted upon sup- 80 porting-wheels *q*, the supporting-wheel near the nozzle being cambered or of larger diameter at its peripheral center *r* than at its outer edges *s*, so as to cause the adjacent side sur- 85 faces of the columns of clay to be separated as shown in Fig. 2, and thus prevented from sticking together.

To further insure the continued separation of the columns of clay formed by cutting the column *d* into a plurality of columns as or 90 after it emerges from the molding surfaces and mouth of the die *v*, a sand-box *t*, which may be of any ordinary and well-known form, is provided and mounted over the column of 95 clay upon a supporting-bracket *u*. The sand-box is provided with suitable openings for permitting the sand to pass therefrom be- 100 tween the separated columns of clay, so as to sand their adjacent sides and the surface of the carrier-apron, so as to prevent the clay from sticking to the apron and also prevent the separated columns of clay from adhering 105 together. The cutting of the column of clay is performed by forcing the clay through the die *v*, which molds it into a single column, and the same power which molds it forces it 110 against the cutter-wire arranged in its path of movement, and thus cuts it into a plurality of columns. The mechanism for thus forcing the clay against the cutter and through the 115 mold may be of any ordinary or known type. The carrier-apron wheels *q* may be rotatably 120 mounted in bearing-boxes *y* upon standards *z*, forming portions of a brick-making machine, which may be of any ordinary and well-known type.

I claim— 115

1. In a machine of the class described, the combination of a shell forming a receptacle for containing clay to be operated upon, a nozzle connected with such receptacle and provided with a die or molding-surface por- 120 tion for molding a column of clay and permitting such column of clay to emerge from the mouth of such nozzle, a cutter extending across the outside of the mouth of the nozzle for cutting such column of clay into a plural- 125 ity of columns, and means for separating the adjacent sides of such columns of clay.

2. In a machine of the class described, the combination of a shell forming a receptacle for containing clay to be operated upon, a 130

nozzle connected with such receptacle and provided with a die or molding-surface portion for molding a column of clay and permitting such column of clay to emerge from the mouth of such nozzle, a cutter extending across the outside of the mouth of the nozzle and molding-surface for cutting such column of clay into a plurality of columns, means for separating the adjacent sides of such columns of clay, and means for sanding the adjacent sides of such columns of clay.

FRANK ALSIP.

Witnesses:

C. H. ALSIP,
HARRY I. CROMER.