

(No Model.)

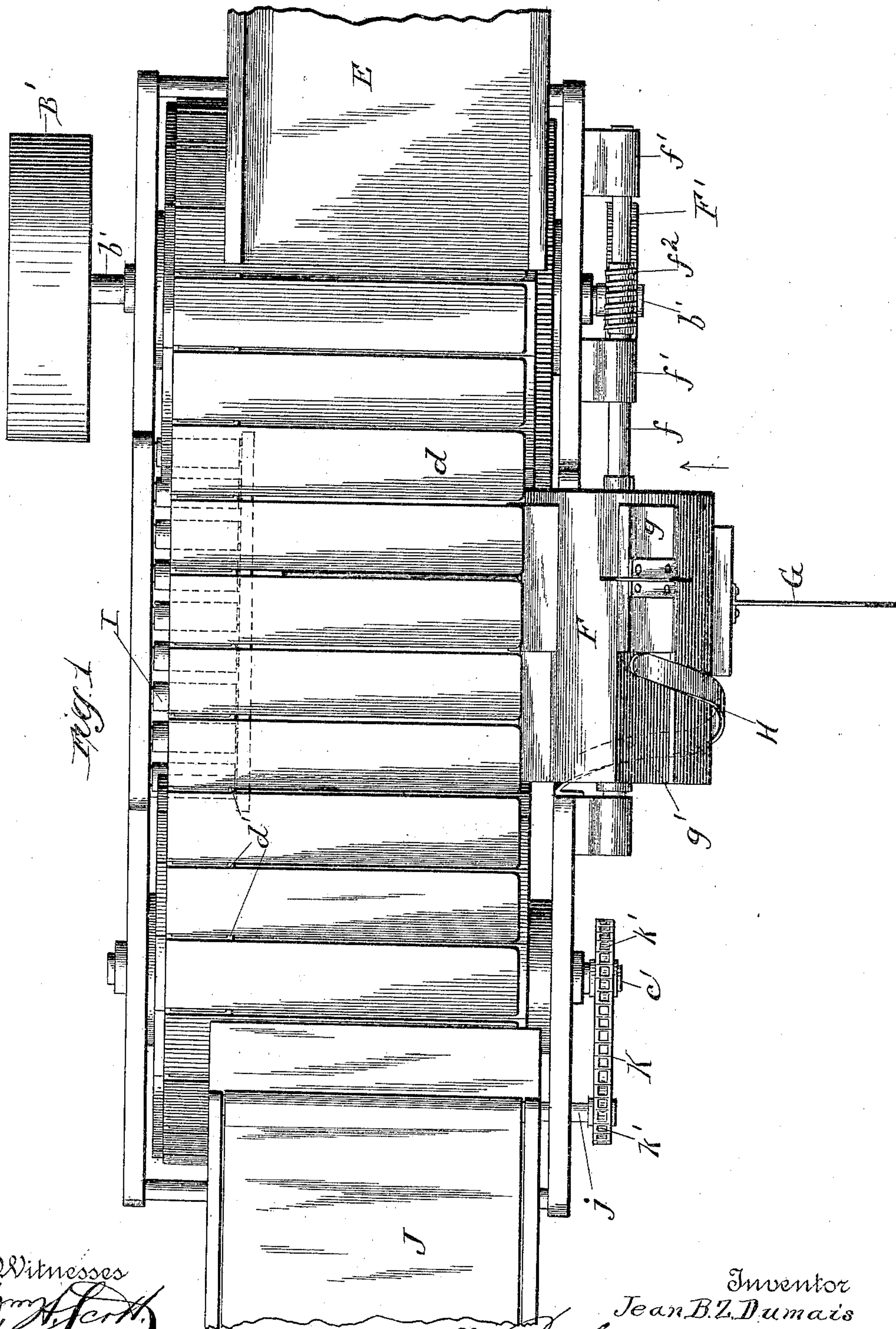
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J. B. Z. DUMAIS.

CUTTER FOR BRICK OR TILE MACHINES.

No. 436,342.

Patented Sept. 16, 1890.



Witnesses  
*W. H. Scott*  
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Inventor  
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Attys

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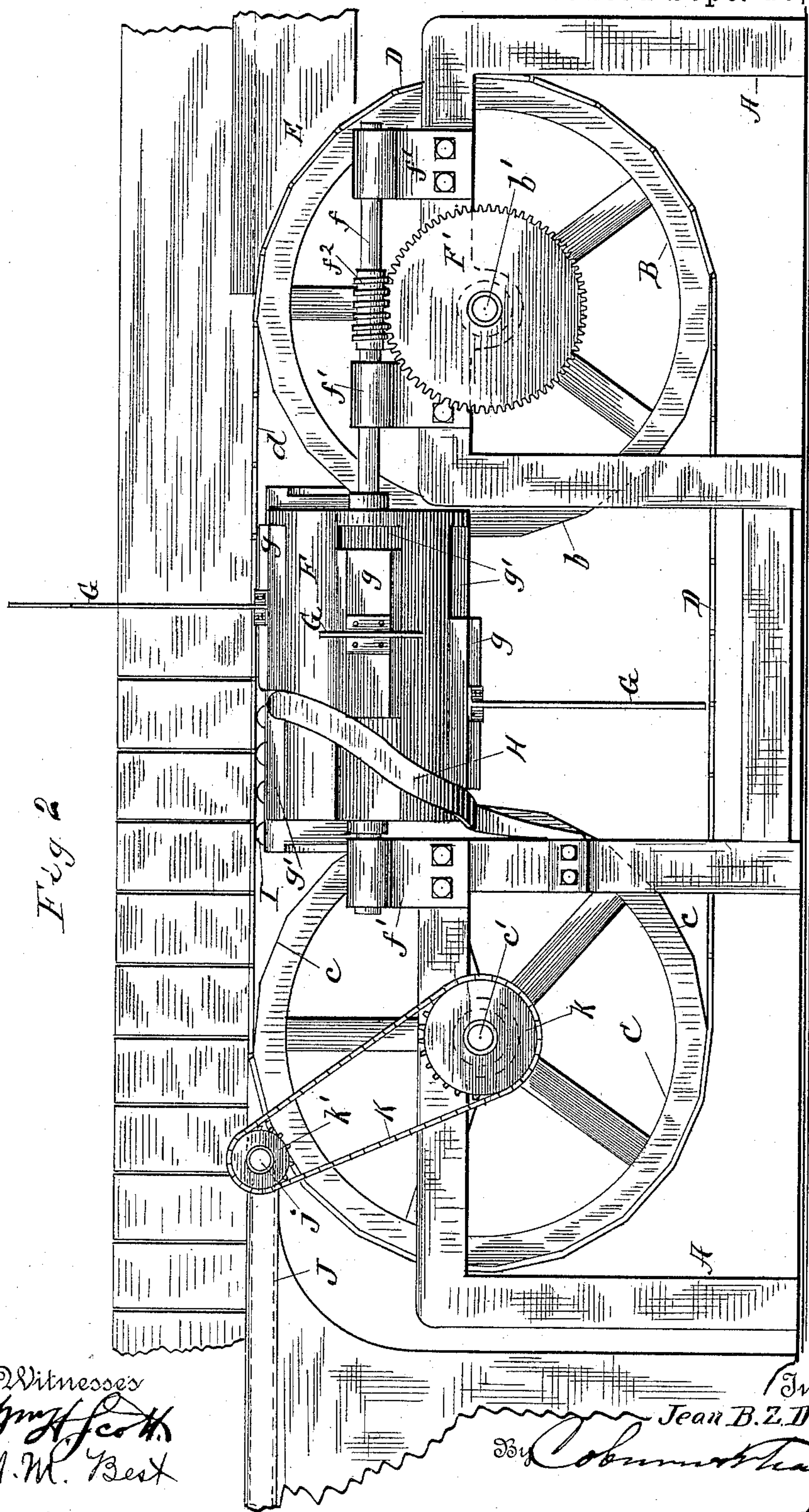
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# UNITED STATES PATENT OFFICE.

JEAN B. Z. DUMAIS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO  
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## CUTTER FOR BRICK OR TILE MACHINES.

SPECIFICATION forming part of Letters Patent No. 436,342, dated September 16, 1890.

Application filed May 14, 1890. Serial No. 351,777. (No model.)

*To all whom it may concern:*

Be it known that I, JEAN B. Z. DUMAIS, 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 Cutters for Brick-Machines, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

10 Figure 1 represents a plan view of a brick-cutting machine embodying my invention, and Fig. 2 a front side elevation of the same.

My invention relates to a machine for the purpose of severing continuous strips of 15 pressed or molded clay, which are produced by certain brick-machines of a well-known type, whereby the said strips are cut up into suitable brick-lengths, and more especially to a cutting-machine for this purpose, which 20 will suitably sever the strips of clay as they are delivered from the brick-machine without stopping their forward progress, the strips being conducted to the cutter by a suitable carrier, moved along by the latter, and at the 25 same time severed, and the clay bricks thus formed delivered to another suitable carrier, which deposits them as may be desired.

The present invention consists, mainly, in an endless slatted carrier open at one side, 30 and knives mounted on a rotating cylinder arranged at the open side of the said carrier and free to slide back and forth on the cylinder in a line with the travel of the carrier.

I will proceed to describe in detail the construction and operation of a machine in 35 which I have embodied my invention in one practical way, and will then point out more definitely in claims the special improvements which I believe to be new and wish to protect by Letters Patent.

40 In the drawings, A represents a substantially rectangular frame of considerably greater length than width. This is the main supporting-frame for the cutting-machine, upon which the operative devices are mounted. 45 At each end of this frame is a large cylinder or drum B and C, the former at the front end and the latter at the rear. The shafts of these cylinders are mounted in suitable bearings 50 secured to the supporting-frame, and their

circumferential surfaces, instead of being circular, are polygonal, the several faces *b* of the former and *c* of the latter being of a width about equal to the length of a brick, more or less.

The shaft *b'* of the front drum is extended 55 out at one side of the frame and has secured upon it a band wheel or pulley B'. This is the driving-pulley, by means of which a rotary motion is communicated to the cylinder 60 B; but instead of a band-pulley a gear-wheel or any other suitable device may be employed, the power being obtained from the main brick-machine or any other suitable source. An endless carrier D is mounted upon these 65 two drums. This carrier is composed of long metal slats *d*, which are hinged together at one end, the hinges *d'* being located at the ends of the slat on the back side of the machine. 70

The hinge-connections are made long on the adjacent edges of the slats, as seen in Fig. 1 of the drawings, so as to give a strong sustaining vertical support to the slats, which are left open at their other ends at the front 75 side of the machine and all the way between said ends and the hinges. The width of each one of these slats is substantially the same as the length desired for the bricks of clay, so that, if strips of pressed and molded clay are 80 delivered out upon this slatted carrier and then severed along the spaces between the slats, clay bricks of the required length will be produced. The strips of clay are delivered immediately upon this slatted carrier by 85 means of a chute or apron E, extending directly from the brick-machine. This delivering device may also be an endless carrier where it is desirable, the particular construction being an immaterial matter, the only ob- 90 ject being to direct the strips of pressed clay upon the forward end of the carrier.

As the movement of the carrier is continuous, obviously the cutting device must be constructed so as to accommodate the constant 95 forward movement of the strips of clay while being severed. For this purpose a cylinder or drum F is mounted at the front side of the frame, its shaft *f* being at right angles to the shafts of the carrier-drums and mounted in 100



suitable bearings  $f'$ , secured to the front side of the supporting-frame. This shaft is prolonged toward the forward end of the machine, so as to extend over the shaft of the forward carrier-drum B, one of the bearings  $f'$  being mounted near the forward end of the frame A and in front of the shaft of the drum B. This extension of the shaft  $f$  is provided with a worm  $f^2$ , with which engages a worm gear-wheel  $F'$ , secured to the end of the shaft  $b'$  at the front of the machine, as seen in Fig. 2 of the drawings. It will be seen that rotary motion will thus be given to the cylinder F, the movement being inward toward the carrier, as indicated by the arrow in Fig. 1.

The knives G are mounted upon blocks  $g$ , which are in turn mounted in grooves or guideways  $g'$  in the surface of the cylinder F and running lengthwise of the same. The grooves and blocks are dovetailed, so as to hold the latter to the cylinder; but the blocks are perfectly free to slide back and forth in the grooves lengthwise of the cylinder. The knives are spaced upon the cylinder and the movement of the latter so calculated that as one of these knives is brought over to the carrier it will register with one of the spaces between two slats of the latter and so strike into this opening the moment it engages with the carrier; but as the knife-blocks are free to move along the cylinder upon which they are mounted, and this movement is made very easy, the knives and blocks will be slid along by the forward movement of the carrier so long as the knife remains in engagement between the slats.

The knives are long enough to reach inward nearly to the hinges of the carrier-slats, so that their rotary movement, caused by the revolution of the cylinder F, will project them nearly across the carrier and down through the spaces between the slats, thereby severing the strip or strips of clay lying upon the latter, while at the same time they are caused to partake of the forward movement of the carrier and so cannot disturb the position of the clay strips thereon. The knives will be entirely cleared from the carrier before the blocks reach the rear ends of their guideways, and before they are brought around to the carrier again must of course be pushed back to the forward end of the cylinder on which they are mounted. This is accomplished by means of a spirally-curved cam or guide H, which is fastened at one end to the frame below the rear end of the cylinder F, and is thence curved outward, upward, and forward around said cylinder and as near to the surface of the latter as convenient. The rear ends of the knife-blocks as they are brought around underneath the cylinder F come into contact with this cam, as seen in Fig. 2, and are are thereby gradually pushed forward to their extreme position at the forward end of the cylinder in readiness for work again, as described above. It will be seen, then, that I thus provide

for severing the strips of clay into bricks of the required length while upon the carrier and without stopping their forward movement.

In order to give the slatted carrier additional stiffness during the cutting operation, which of course must occur in the space between the two carrier-drums, I provide a rigid support for the hinged ends of the slats. This support consists of a series of short rollers I, mounted in a suitable frame fastened to the back side of the supporting-frame and arranged in a level position directly under the hinged ends of the carrier-slats, as seen in Fig. 1, so that the latter pass over these rollers in contact with them and are thereby firmly supported, giving greater stiffness to the carrier during this portion of its travel.

The clay bricks may be delivered from the slatted-carrier in any way desired. For illustration I have shown an endless carrier J at the rear end of the machine with an apron, by means of which the bricks are delivered upon the said carrier at the rear end of the cutting-machine, and are carried thence to any required point of delivery, motion being given to the carrier J by any usual means. In the drawings this is done by a chain K, running over a sprocket-wheel  $k$  on the shaft  $c'$ , and a similar wheel  $k'$  on the roller  $j$  of the carrier.

I have not shown the brick-machine and other ordinary parts of machinery used in connection with this art, because they are in common use and well known and may be of any usual construction, it being understood that this cutting-machine may be set up to any of the brick-machines which produce pressed and molded strips of clay, so that such strips may be delivered directly therefrom to the slatted carrier of the cutting-machine.

Changes may be made in details of construction and in some of the devices herein shown and described; and the manner of driving both the carrier-drums and the cutter-cylinder may be changed in a variety of ways without removing the main features of my invention, and therefore I do not wish to be understood as limiting myself to all the details of construction and arrangement as herein described and shown.

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

1. In a brick-cutting machine, an endless slatted carrier with the spaces open between the slats at one edge of the carrier, in combination with a revolving cutter-cylinder mounted at one side of the carrier parallel to the line of motion of the latter, and knives mounted on said cylinder and freely movable lengthwise thereon, substantially as and for purposes specified.

2. In a brick-cutting machine, the endless carrier D, composed of slats  $d$ , hinged together at one end only, in combination with the revolving cylinder F, the blocks  $g$ , mounted in guideways on said cylinder and freely



movable thereon, and the knives G, attached to said blocks, substantially as and for the purposes specified.

3. In a brick-cutting machine, the endless  
5 slatted carrier D open at one edge, in combination with the revolving cylinder F, the knife-blocks g, mounted loosely in guide-ways on said cylinder, and the cam or guide H, substantially as and for the purposes specified.  
10

4. In a brick-cutting machine, the endless slatted carrier D, in combination with the

drums B C, the driving-pulley B' on the shaft of the drum B, the revolving knife-cylinder F, the sliding knives G, mounted on said cylinder, the worm  $f^2$  on the shaft of the cylinder F, and the worm-wheel F', secured to the shaft of the drum B, substantially as and for the purposes specified. 15

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