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PATENTED MAR. 28, 1905.

C. R. CODDING.
BRICK OR TILE CUTTING MACHINE.
APPLICATION FILED SEPT. 12, 1904.

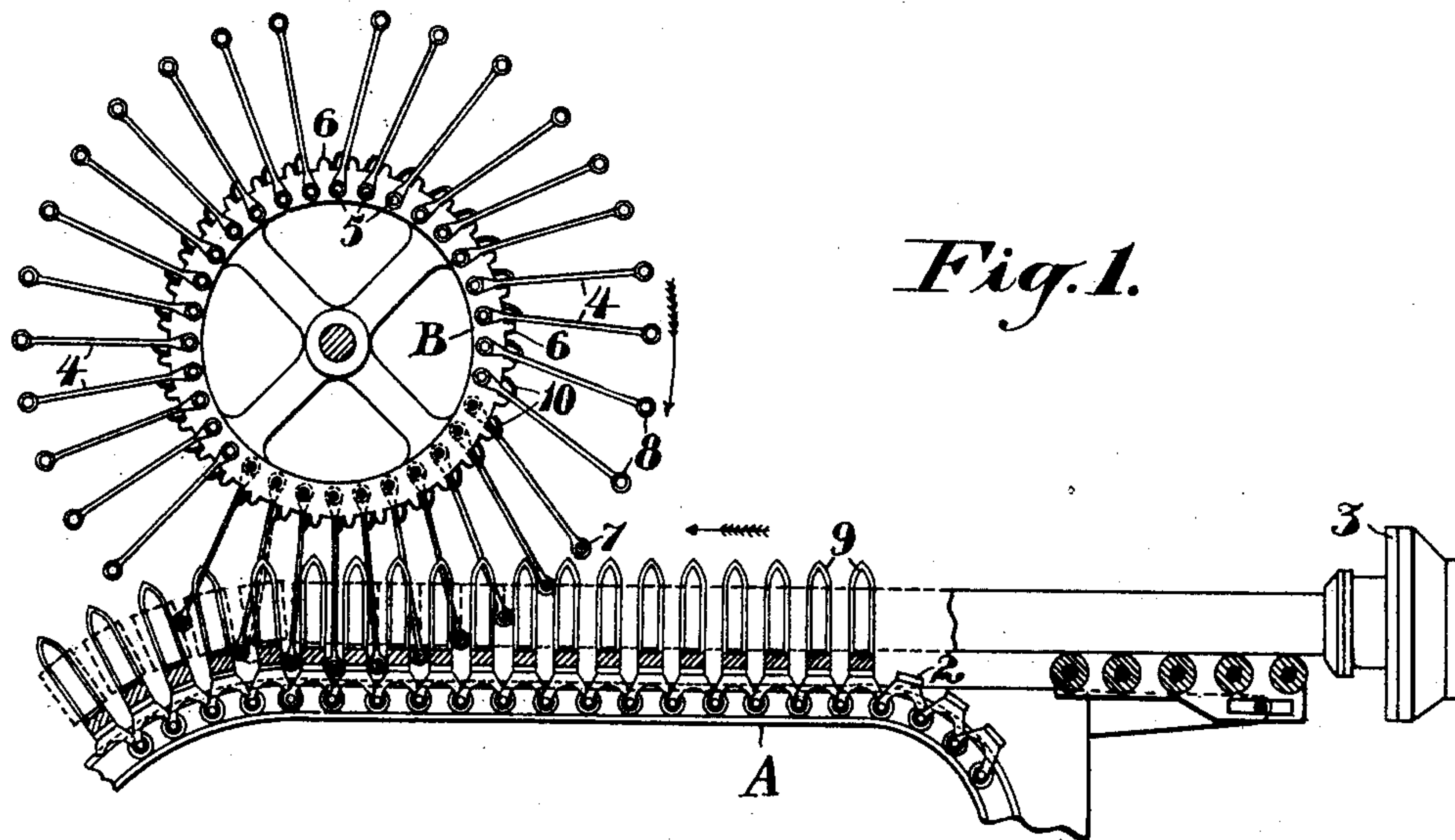
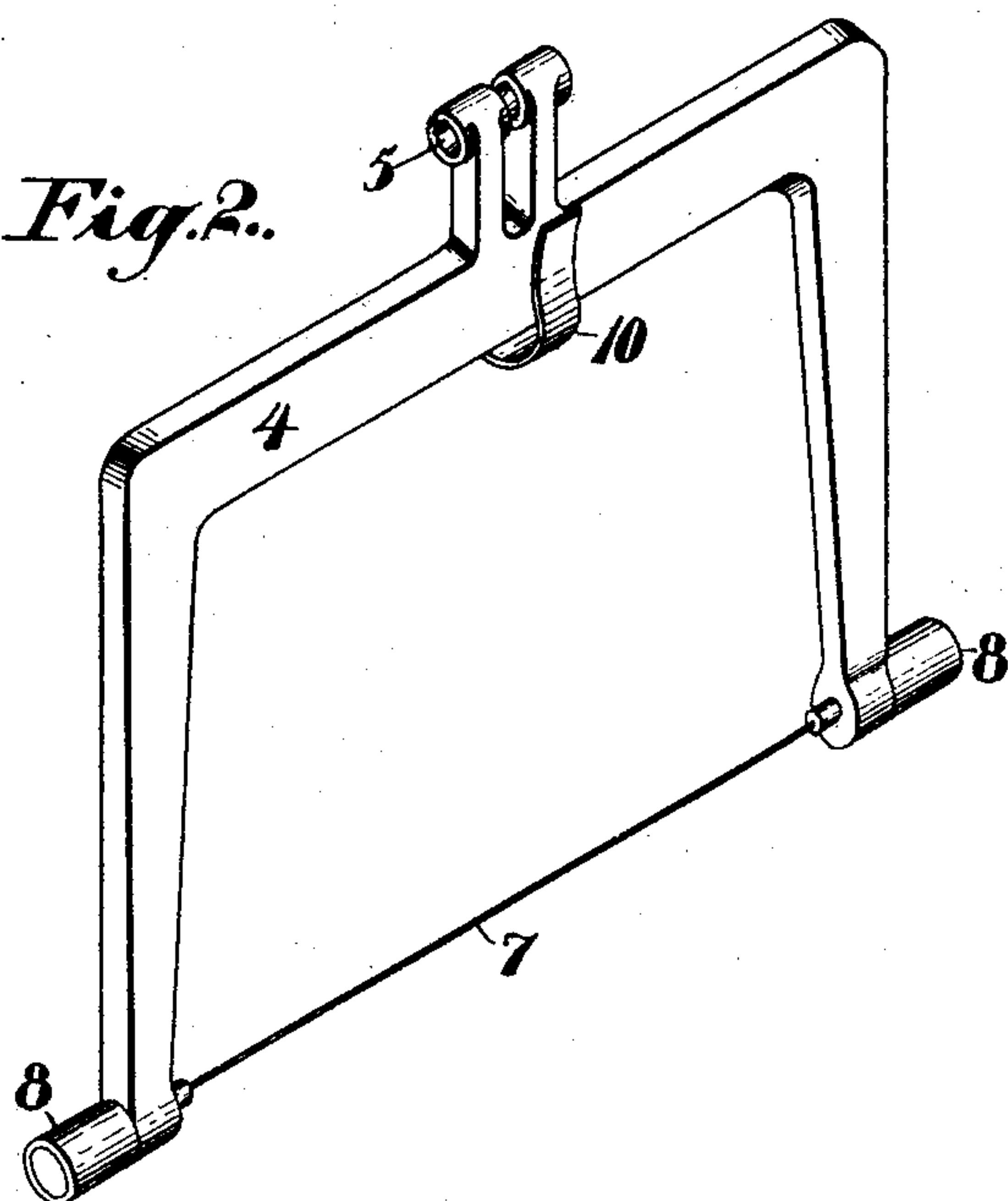


Fig. 2.



Witnesses:-

F. C. Fiedner

J. S. Sorce

Inventor,

Charles R. Coddington

By Geo. H. Strong

att.

UNITED STATES PATENT OFFICE.

CHARLES R. CODDING, OF SAN RAFAEL, CALIFORNIA.

BRICK OR TILE CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 786,003, dated March 28, 1905.

Application filed September 12, 1904. Serial No. 224,231.

To all whom it may concern:

Be it known that I, CHARLES R. CODDING, a citizen of the United States, residing at San Rafael, in the county of Marin and State of California, have invented new and useful Improvements in Brick or Tile Cutting Machines, of which the following is a specification.

My invention relates to improvements in brick and tile cutting machines, and especially in attachments to the cutters of such machines of the type shown in Patent No. 563,252, dated July 7, 1896. In machines of this character it is usual to employ an endless slotted or sectional conveyer for the clay column and a revolving cutter having radial pivoted frames operated by the conveyer to cut the brick or tile blanks. The frames of the cutter have a limited movement about their pivots to allow the cutting-wires to accommodate themselves to the travel of the conveyer and blank column. Where these machines have been used for cutting bricks, two serious difficulties have confronted the operator. First and principally, the tendency of the wires when leaving the cut has been to slice off a corner of or otherwise mar the brick immediately in rear of the wire ascending or for the brick frequently to be violently and bodily lifted out of its place in the column. Various devices have been resorted to in order to throw the wire forward and ahead of the advancing brick, but without unqualified success. Secondly, the frames being pivoted on the rotary cutter-support and having a limited movement between fixed stops on this support rest against one stop as they rise, and when passing over the center at the top fall forward and rest in their downward course on the other stop. This movement from one stop to the other being more or less violent and the wires having more or less clay and gravel clinging to them, the clay and gravel are shaken off of the wires onto the smooth finished surface of the brick column beneath. Any lumps of this sort (unless removed, and there is no time for that) only mar the bricks and impair their commercial value, inasmuch as the sides or ends of the bricks are the surfaces exposed in build-

ing, it being understood that the die from which the column of clay issues to the cutter gives a smooth exterior finish to the column, and the cutters which sever the bricks from the column produce the trough top and bottom, so valued for binding purposes in brick-laying.

The object of my invention is to overcome both of these difficulties and by so doing to greatly increase the output of a plant.

The invention consists of the parts and the construction and combination of parts, as hereinafter more fully described, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of a machine, showing application of my invention. Fig. 2 is a perspective view of a frame, showing my spring attachment.

A represents a table having the usual endless sectional carrier 2, supporting the clay column and driven either by the column issuing from the die 3 or by independent means.

B is a rotary support located above the table and carrying the cutter-supporting frames 4. These frames are pivoted to the support B at 5 and extend approximately radial thereto. Their movement about their pivots is limited by suitable means, as the stops 6 between each frame and its neighbor, whereby no two frames can ever come together. Between the outer ends of the arms of each frame is stretched a wire cutter 7, and the arms of each frame carry rollers 8 to engage in proper succession the vertical guides 9 on each end of each section of the carrier 2.

Each pair of guides 9 as it comes along engages a corresponding pair of rollers 8 on a frame, causing a rotation of support B and a downward vertical movement of the wire on the engaged frame to sever a brick-blank from the column. The wire passes into the space or slot between the two adjoining sections of carrier 2 and a succeeding pair of guides 9 engages a succeeding frame to sever another brick-blank, and so on. Immediately or shortly after the traverse of the wire through the column the carrier breaks or drops into a plane inclined downward relative to the plane

of that portion of the carrier conveying the uncut column for the purpose of separating or opening out the cut brick-blanks to allow the withdrawal of the wires. It is at this point that the previously-mentioned difficulty arises by reason of the normal tendency of the rollers 8 to lag or to retain their contact with the face of the guides with which they have been in contact during all the cutting operation.

In order that the wires when they are withdrawn upward from between the bricks be prevented from contacting with and possibly injuring or pulling out the immediately-succeeding brick, they must be suddenly advanced, or, in other words, the moment the space between two bricks widens the corresponding frame should be given an accelerated forward movement about its pivot. For this purpose I employ a suitable spring on the support B, such as is shown at 10 and which is on tension during the period of cutting the clay column, but operates immediately on the separating of two bricks to press its frame forward ahead of the rear brick and to cause the rollers 8 on the frame to ride up on the rear edges of the guides 9 immediately in advance instead of the rollers traveling upon the rearward guides, as in the machine of usual construction. The springs for this purpose may be of various styles and shapes and variously arranged so long as they produce the desired result. I have found that a compression-spring, as 10, having one end secured to a frame and the other engaging a stop 6 behind the frame, is very satisfactory, the tendency of this spring at all points in the arc of travel of the frame being to throw the frame forward toward the stop in advance or in the direction of movement of the support B and independent of the force of gravity. In fact, the spring actually operates on the upward movement of the wire and in opposition to gravity. When the frame is engaged by the guides and clay column, the spring is compressed and the frame is supported by the rear stop; but the moment the break in the table occurs to open out the bricks the spring acts immediately to throw the wired end of the frame forward, as before mentioned.

The advantage of an advancing medium on the frame-support to cause this accelerated and instantaneous movement of the frames is that it does not require the frames to pass below the carrier, since the advance of the frame may be made to occur, and in the present case does occur, as soon as any space offers between the bricks; and, again, the rollers 8 are carried away from all further contact with the previously-pushing guides, which results in a great saving of wear both on the guides and on the rollers. A worn guide or a worn roller means a crooked brick. Furthermore, by the

use of a spring acting between a frame and a suitable stop the free movement of the frame as it passes over center at the top may be reduced, so that practically no jar occurs as the frame engages the front stop on its downward movement, and consequently the clay and other matter clinging to a wire will not be jarred off onto the bricks underneath, but will be deposited on the column in the very line of cut.

By securing the spring to the frame both are removable from the support together and while the machine continues in motion, since wires are breaking frequently, necessitating each time a frame being taken out and another put in. For this reason the distance between the free end of a spring and the opposite side of its frame is a trifle less than the distance between two adjacent stops.

It is manifest that the foregoing construction is capable of various changes and modifications without departing from the principle of the invention, and I do not wish to be understood as limiting myself beyond the requirements of the prior art and the reasonable constructions of my claims.

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

1. In a brick and tile cutting machine, a cutter comprising a rotatable support, radially-disposed frames pivoted on said support, cutting-wires carried by said frames, means for limiting the arc of movement of the frames about their pivots and springs fixed to and removable with the frames as a unitary structure, said springs coacting with the support to turn the frames on their pivots.

2. In a brick and tile cutting machine, a cutter comprising a rotatable support, radially-disposed frames pivoted on said support, cutting means carried by the frames, stop means intermediate of the several frames to limit the movements of each frame about its pivot, and springs fixed to and removable with the frames as a unitary structure and coacting with the said stop means to turn the frames about their pivots.

3. In a brick and tile cutting machine, a cutter comprising a rotary support having radially-disposed pivoted frames, cutting means carried by the frames, said frames having a limited arc of movement about their pivots independent of the movement of their support and spring-actuated means fixed to and removable with the frames as a unitary structure and coacting with the frames and support and independent of the force of gravity to turn the frames about their pivots in the direction of rotation of the support.

4. In a brick and tile cutting machine, a cutter comprising a rotary support having radially-disposed pivoted frames, cutting means

carried by the frames, said frames having a limited arc of movement about their pivots independent of the movement of their support and springs fixed to and removable with the
5 frames as a unitary structure and coacting with the support and independent of the force of gravity to turn the frames about their pivots in the direction of rotation of the support.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES R. CODDING.

Witnesses:

EUGENE W. SMITH,
MARTIN JOHANSEN.