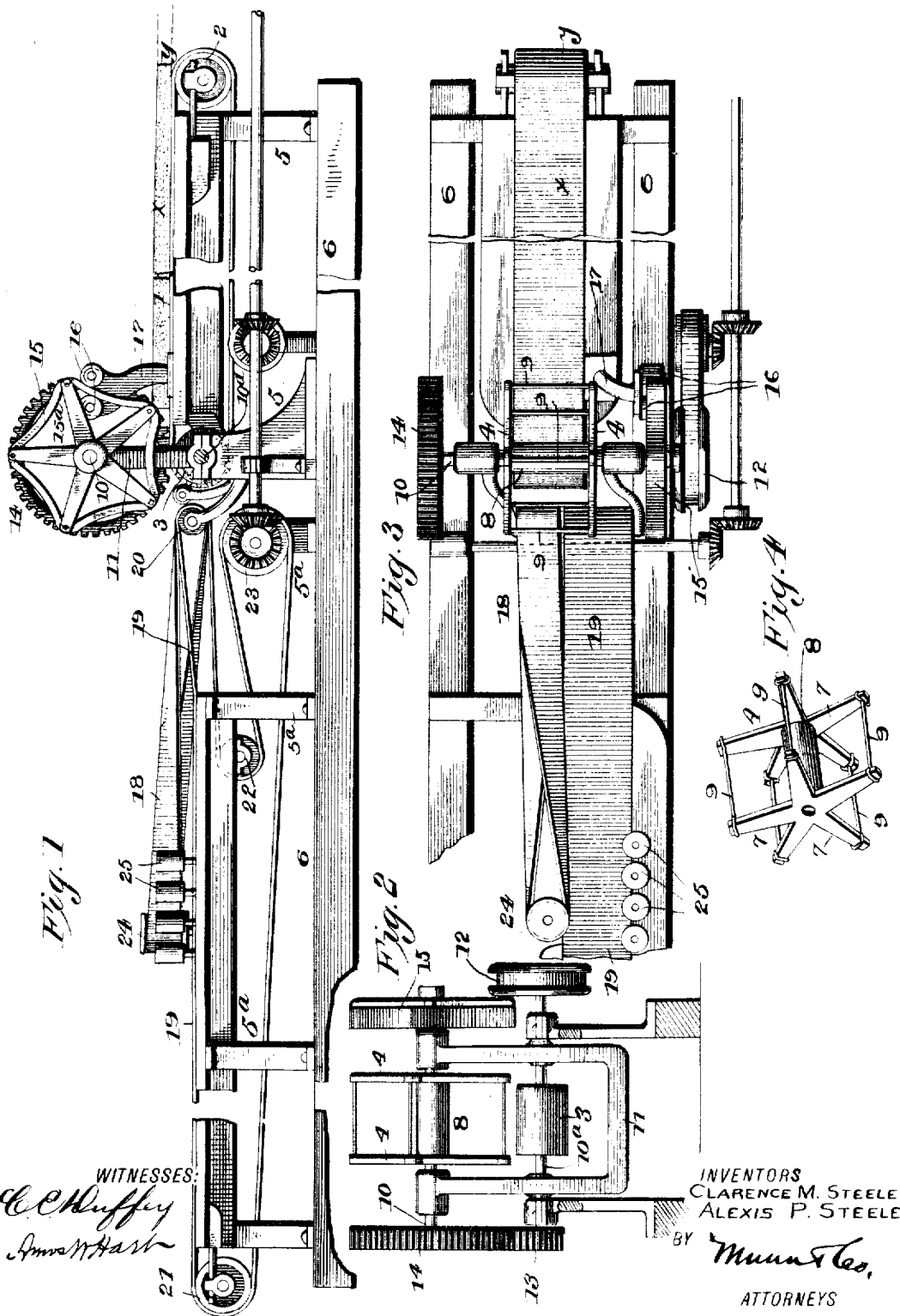


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C. M. & A. P. STEELE.
BRICK CUTTING APPARATUS.

APPLICATION FILED DEC. 20, 1904.



UNITED STATES PATENT OFFICE.

CLARENCE M. STEELE AND ALEXIS P. STEELE, OF STATESVILLE, NORTH CAROLINA.

BRICK-CUTTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 792,941, dated June 20, 1905.

Application filed December 20, 1904. Serial No. 237,627.

To all whom it may concern:

Be it known that we, CLARENCE M. STEELE and ALEXIS P. STEELE, citizens of the United States, and residents of Statesville, in the
5 county of Iredell and State of North Carolina, have invented certain new Improvements in Brick-Cutting Apparatus, of which the following is a specification.

Our invention is an improvement in that
10 class of machines or apparatus which are adapted to divide a continuous clay bar into brick lengths.

The invention is an improvement upon the patent of A. P. Steele, No. 720,751, dated
15 February 17, 1903, in which a pair of toothed gears were employed to transmit motion to the reel or clay-bar cutter, the construction and coaction of the gears being such that the radius of the driving-gear decreases while the
20 radius of the driven gear increases in relative proportion, so that the bar was cut or divided upon vertical lines.

Our invention is embodied in the construction, arrangement, and combination of parts
25 hereinafter described and claimed, the same being illustrated in the accompanying drawings, in which—

Figure 1 is a side view of our apparatus or machine. Fig. 2 is a vertical cross-section
30 taken in front of the cutting apparatus. Fig. 3 is a plan view of a part of the apparatus. Fig. 4 is a perspective view of the reel or clay-bar cutter proper.

The clay bar *a* (see Fig. 1) is fed at constantly-varying speed from die of brick-machine, located at *y* upon an endless traveling
35 belt 1, that runs upon horizontal pulleys or rollers 2 3, the latter being located directly under the cutting device or reel 4. The tension of the belt 1 is regulated, as required, by the usual means to wit, adjustable bearings for one of the pulleys. The said bearings are supported by a suitable frame or super-
40 structure 5, attached to and resting upon sills 6.

As shown best in Fig. 4, the reel 4 is composed of two sets of radial arms 7, attached to a hub 8, the same being arranged in vertical planes and their outer ends connected by

wires 9 and separated by a distance greater
50 than the width of the belt 1. The aforesaid hub 8 is keyed upon a horizontal shaft 10, (see Fig. 2,) having its bearings in the ends of a U-shaped frame 11. The latter is mounted to swing upon a counter-shaft 10^a, where-
55 on the belt-pulley 3 is mounted. The shaft 10^a is provided with a flanged belt-pulley 12, to which in practice a belt will be applied in a suitable manner. The opposite end of the
60 said shaft is provided with a pinion or small spur-gear 13, that meshes with a large gear 14, (see also Fig. 1,) the gear 14 being keyed upon the shaft 10, carrying the reel 4. Upon
65 the opposite end of the shaft 10 is mounted a cam 15, the same being formed of a series of radial arms 15^a and a flanged rim, the portions of the flange that intervene the ends of
70 the arms 15^a being bent slightly inward, as shown in Fig. 1. This flange 15 runs between rollers 16, which are journaled on horizontal pins attached to a vertical standard or bracket
75 17, which is firmly secured to the upper portion of the frame 5.

Since the U-shaped frame 11 is adapted to swing on the shaft 10^a, it is apparent that as
75 the said shaft is driven the cutting-reel 4 and the flanged cam-wheel 15 will swing in a vertical plane, since the curvilinear flange travels between the two fixed rollers 16. In other words, the frame 11 oscillates in a vertical
80 plane corresponding to the degree of curvature of the flange of the cam 15. It will be seen that the proportion and arrangement of parts are such that one of the transverse wires
85 9 of the reel 4 will begin to cut the clay bar *a* when the rollers 16 approach or begin to traverse one of the outwardly-extending curves of the flange 15, the angle of the curve in-
90 creasing as the wire passes through the clay bar, so that the wire is caused to make a vertical cut, and thereby a brick length is severed in a vertical plane. If the upper portion of the swinging frame be held against or
95 in any manner pressed toward the right-hand roller 16, (see Fig. 1,) the above-described operation will always result. In other words, the left-hand roller 16 is employed and is only necessary for the purpose of holding the cam

15 in due engagement with the right-hand roller 16, upon which the due action of the cutter depends.

It will be seen that the above-described construction and arrangement of parts are exceedingly simple and that the desired operation and result are attained with but a small expenditure of power.

The brick lengths severed from the clay bar *x* are delivered upon two receiving-belts 18 and 19, the latter being the delivery-belt proper and mounted upon pulleys or rollers 20 21 22 23, having their bearings in the frame 5". These pulleys are arranged and driven in an obvious way, as illustrated in the patent of A. P. Steele, No. 720,751, before referred to, and therefore require no special description. The belts travel at the same speed. At their front ends they are horizontal, side by side, and the adjacent end of the feed-belt 1 is opposite both or opposite a part of each of said belts 18 19. When a brick length is delivered upon them, it rests partly upon one and partly upon the other. The belt 18 is horizontal at the end nearest the reel; but its outer end runs upon a vertical pulley 24, the bights of the belt being twisted intermediately a quarter-way around. It is obvious that by this construction and arrangement of parts the brick lengths will be turned from a horizontal to a vertical position, which they will maintain until delivered from the belt 19 at the end of the apparatus. In order to prevent the brick lengths from being tilted too far over as they leave the increasing slope of the belt 18, we provide rollers 25, (see Figs. 1, 3,) which are arranged vertically on suitable journals alongside the belt 19.

It is to be understood that various changes may be made in the form, construction, and arrangement of the several parts described without departing from the spirit and scope of our invention.

What we claim is—

1. In a brick-cutting apparatus of the class described, the combination, with means for

carrying the clay bar, of a rotating cutting-reel, a frame supporting the same and adapted to swing in a vertical plane, a cam also supported in said frame and adapted to swing therewith, and a fixed part or device with which said cam works in contact, and means for imparting rotation to both the reel and cam, substantially as shown and described.

2. The combination, with means for carrying a clay bar, of an oscillating rotatable cutter, means for supporting and rotating it, and means for imparting a movement bodily thereto in the direction in which the clay bar moves, substantially as described.

3. The combination, with means for carrying a clay bar, of a frame adapted to swing in a vertical plane, a wire reel, and a cam having a curvilinear outline, mounted upon and adapted to swing with said frame, a rotatable shaft upon which the reel and cam are keyed, a rotatable counter-shaft serving as the fulcrum of the swinging frame, and gearing applied to the respective shafts and meshing in the manner described, a fixed part with which the cam coacts as it revolves so that the reel is oscillated in a vertical plane, and means for driving the counter-shaft, substantially as described.

4. The combination, with the cutting mechanism, of the two endless horizontal belts 18 and 19 running on the adjacent pulleys at the same speed, the belt 19 being arranged flat and the belt 18 twisted from the horizontal at the receiving-point to the vertical at the opposite end, and the horizontal feed-belt 1 having its delivering end opposite adjacent portions of the two belts 18 and 19, so that a brick length is delivered partly upon one and partly upon the other, and gradually turned from the twisted belt onto the flat belt, as specified.

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Witnesses:

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