

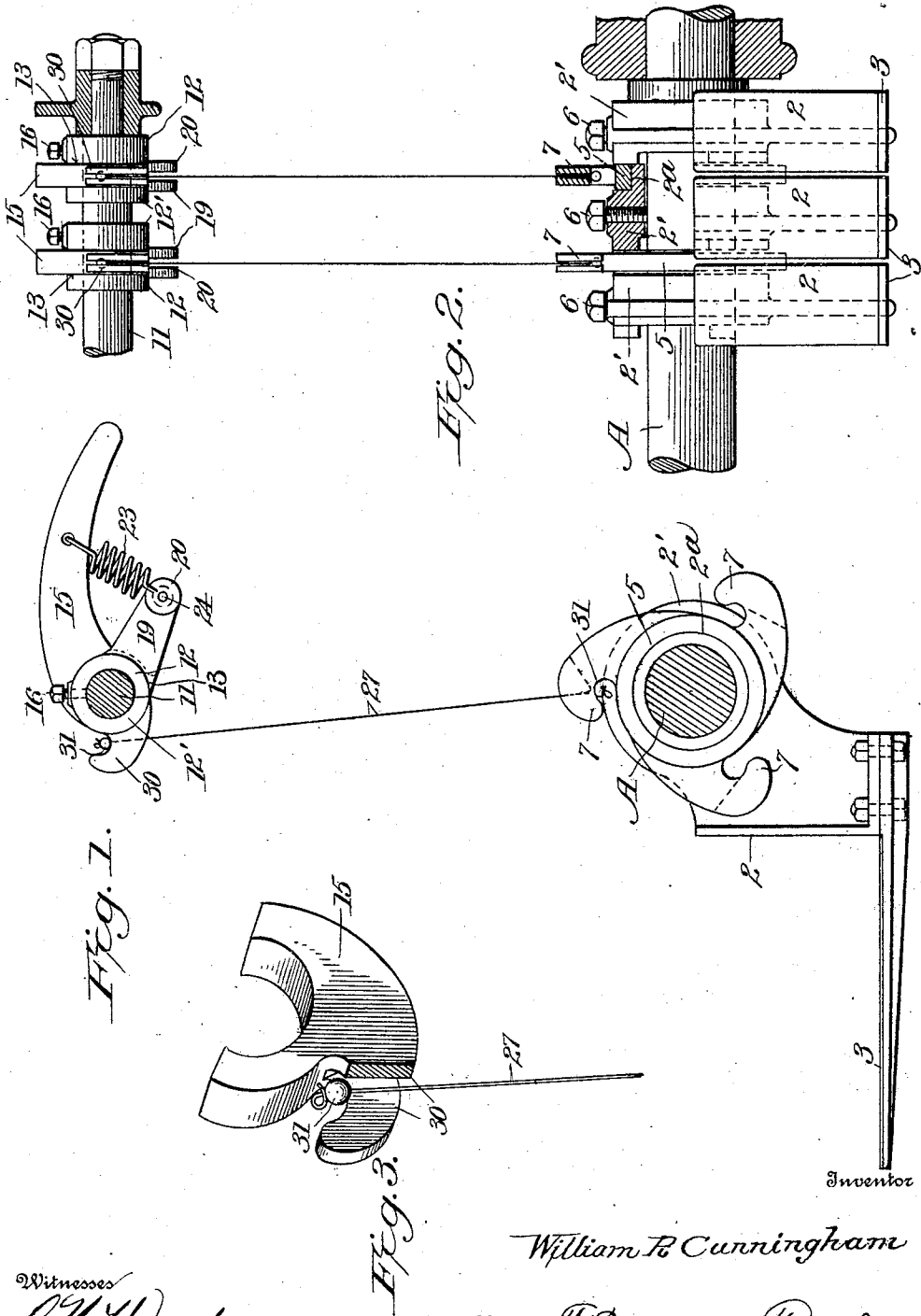
No. 857,603.

PATENTED JUNE 25, 1907.

W. R. CUNNINGHAM.

WIRE ATTACHMENT FOR BRICK AND TILE CUTTING MACHINES.

APPLICATION FILED MAR. 14, 1907.



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UNITED STATES PATENT OFFICE.

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WIRE ATTACHMENT FOR BRICK AND TILE CUTTING MACHINES.

No. 857,603.

Specification of Letters Patent.

Patented June 25, 1907.

Application filed March 14, 1907. Serial No. 362,345.

To all whom it may concern:

Be it known that I, WILLIAM R. CUNNINGHAM, a citizen of the United States, residing at Bucyrus, in the county of Crawford and State of Ohio, have invented new and useful Improvements in Wire Attachments for Brick and Tile Cutting Machines, of which the following is a specification.

My invention relates to certain new and useful improvements in wire-attachments for brick and tile-cutting machines, or devices for holding wires in a cutting-mechanism for cutting lengths or thicknesses of clay or other plastic products as they issue from the die of the machine.

In a prior patent granted to me on the 21st day of November, 1905, No. 805,266, I have shown, described and claimed a cutting-wire-attachment wherein the ends of a plain wire of uniform thickness are each gripped between a movable jaw and a stationary seat. The present invention relates to the same general class of cutting mechanism as the said prior patent, except that in the present case the wire is provided with spherical or other enlargements and the ends of the wire pass through said enlargements and are then folded back and across the body of the wire where it emerges from the enlargement; this form of cutting-wire forms the subject matter of another application for patent filed by me on the 4th day of March, 1907, Serial Number 360,551.

In the accompanying drawings, I show so much of a well known type of brick and tile-cutting machine as will be sufficient to make the present improvements fully understood by those skilled in this art, said machine being well represented in my former patents No. 704,272, July 5, 1904; No. 775,800 November 22, 1904, and Reissue 12,392, October 3, 1905; but the present improvements are not restricted to either of said machines or to any particular style of machine, because they are capable of a wide range of use and may be successfully used on any design of cutting-table employing a wire for cutting clay or other plastic or semi-plastic products.

Figure 1 represents a cross-sectional view of the cutting-portion of the machine, showing in elevation a set of supports and wire-attachments embodying my invention. Fig. 2 is a side elevation, showing a plurality of supports and wire-attachments and showing certain parts in section. Fig. 3 is an en-

larged view of a portion of one of the cutting-wires, showing the claw-shaped end of one of its holders.

In said drawings the shaft, A, represents the usual longitudinal shaft upon which the well known push-boards, 2, are mounted, each of said boards having secured to it in any usual or appropriate manner the platen, 3, which supports the bar or column of clay, or other plastic material, after it issues from the usual forming-die of the machine. In Fig. 2, I show several of the push-boards and platens; as many may be used as may be found necessary or desirable for given purposes or styles of machines, said push-boards and platens being of the usual width for the thickness desired to be cut, and said push-boards being formed or made rigid with hub-portions, 2', to enable them to receive the longitudinal shaft, A, and to be assembled thereon side by side as shown in Fig. 2.

For the sake of brevity and clearness I will describe in detail but one of the push-boards and one set of cutting attachments, it being understood that as many push-boards and wire-attachments may be used as desired and that there will be a complete wire-attachment associated with each push-board and platen and that the wire will operate through the space between adjacent push-boards and platens.

The hub-portion, 2', of the push-board is turned down at 2^a as shown in Fig. 2, to receive a ring, 5, said ring being retained in place between the vertical wall of the turned-down portion of the hub and the vertical wall of the hub of the adjacent push-bar, and said ring being loosely-mounted so as to be capable of rotation on the hub. Through the hub passes a set screw, 6, by which the hub and its push-board and platen are secured to the shaft.

The ring, 5, has its periphery formed or provided with hook-shaped portions each of which is forked to form a claw 7, as shown in Figs. 2 and 3. The ring may have as many of the hook-shaped claw-members, 7, as may be desired; in the present instance I show three such claw-members for the convenience of the design of the machines on which the wire-attachments are supplied, said hook-shaped claw-members serving as attachments for the inner ends of the cutting-wires.

The means for attaching the outer ends of the cutting-wire comprise what is usually

known in these machines as the "wire-bar," 11, on which bar the attachments are mounted side by side, said bar being attached to the revolving wire frame of the cutting-portion of the machine; as the attachments for the outer ends of the cutting-wire are alike I shall only refer to one set of such attachments in the further description of said parts.

A casting, 12, has a hub-portion, 12', which is bored to fit the shaft or "wire-bar," 11, said hub-portion being forked to form the opening, 13, and said casting having an arm, 19, the inner end of which is forked at 20.

Between the forks of the hub-portion of the casting, 12, is mounted the curved wire-holding lever, 15, said lever passing between the forks of the hub of the said casting and being bored to receive the shaft or "wire-bar," 11, and being loosely mounted so that it may rotate thereon and yet be held in position by the forks of the hub-portion, 12', said hub-portion being fixedly secured to the shaft or "wire-bar," by means of a set-screw, 16.

The wire-holding lever, 15, comprises a long arm which extends inwardly and to this arm the hooked end of a spring, 23, is attached, the other end of said spring being entered between the forked-portion 20 of the inner end of the arm, 19, of the casting, 12, and being secured thereon by a pin, 24, or other well known and appropriate means, said spring tending to pull the long arm of the lever, 15, toward the arm, 19, of said casting, and to move the outer or reversely curved end, or short arm, 30, of the lever in an opposite direction.

The short arm, 30, of the lever, 15, is of substantially hook-shape and it is bifurcated or forked to form a claw substantially corresponding to and arranged in the plane of the before mentioned hook-shaped claw-member, 7, for attaching the inner end of the cutting-wire, 27, which wire extends between and through the two claw-members, 7, 30, and has spherical or other enlargements, 31, at its ends to be engaged by the hook-shaped portions, 7 and 30, of the lever, 15, and ring, 5.

The operation of the foregoing described devices will be understood from the following: As the spring, 23, has one end attached to the fixed arm, 19, and the other end attached to the long arm of the loosely-mounted lever, 15, it is manifest that said spring forms an adjustment for applying the necessary tension to the wire when said wire has been placed between the claws, 7 and 30, with the balls or enlargements resting in the curved seats formed by the hook-portions of the ring 7, and lever, 15, said balls or enlargements preventing the wire being pulled through the claws. As the lever, 15, is loose on the shaft or "wire-bar," 11, the spring is permitted to apply the proper tension to the wire at all times.

When it is necessary to renew a wire, the operator pulls on the end of the lever, 15, thereby rotating the lever on the shaft or "wire-bar," 11, and distending the spring and shortening the distance between the claws, 7 and 30, sufficient to permit said wire with its balls or enlargements to be placed in position, when the operator releases the lever to permit the spring to pull the long arm thereof toward the fixed arm, 19, and to apply the proper tension on the wire. The slots in the claw-members, 7 and 30, are for receiving the opposite ends of the wire and keeping the wire properly spaced from the adjacent wires so as to insure the cutting of wire of uniform thickness or length, and to further insure said wire accurately passing through the space between adjacent push-boards and platens.

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

1. In a wire attachment of the character described, the combination with a wire having an enlargement, the end of the wire being extended beyond said enlargement and being looped across itself to form a retaining means for the enlargement, of means for holding one end of the wire, and a claw-shaped member for detachably engaging the enlargement on the opposite end of said wire.

2. In a wire attachment of the character described, the combination with a wire and balls at the opposite ends thereof, said wire being passed through the balls and having its projecting ends looped backwardly transversely across the wire and thereby retaining the balls in place on said wire, of means for holding one end of the wire, and a pivotally-mounted claw-shaped member for engaging and holding the ball on the opposite end of said wire.

3. In a wire attachment of the character described, the combination with a wire having enlargements on its outer ends, said wire being passed through the enlargements and the ends looped backwardly transversely across the wire at substantially the junction of the wire with the outer surface of the ball, of claw-shaped members to receive the outer ends of said wire, said members having curved seats for said enlargements.

4. In a wire attachment of the character described, the combination with a wire having enlargements at opposite ends, the ends of the wire being extended beyond the enlargements and thence looped backwardly across the wire to form a retaining means for the enlargements, means for engaging and holding one of said enlargements, a pivotally-mounted claw-shaped member for engaging and holding the opposite enlargements, and a spring acting upon said member to cause it to hold the wire under tension.

5. In a wire attachment of the character

described, the combination with a wire having enlargements at opposite ends, said wire being extended beyond the enlargements and thence bent backwardly to form a retaining means for the enlargements, of claw-shaped members at opposite ends of the wire and into engagement with which the enlargements are substantially hooked.

6. In a wire attachment of the character described, the combination with a wire having enlargements at the ends, said wire being extended beyond the enlargements and thence looped backwardly across itself, of oppositely-turned hook-shaped members adapted to engage said enlargements, said members being forked to admit the wire and form spacing guides therefor.

7. In a wire-attachment of the character described, the combination with the cutting wire having an enlargement on the inner end thereof, said wire being passed through the enlargement and the end looped backwardly transversely across the wire to thereby retain the enlargement in place on said wire, the push-board, the platen fixed thereto, and the shaft upon which the push-board is fixedly mounted, said push-board having a hub-portion for the shaft, of a ring mounted upon said hub-portion said ring having a hook-shaped member the outer end of which is forked to form a claw into engagement with which the inner end of the wire is hooked, the slot of said claw forming a spacing and guiding means for the inner end of the wire, and wire-holding means for the outer end of the wire.

8. In a wire-attachment of the character described, the combination with a wire and means for attaching the inner end thereof, said wire having an enlargement on its outer end, the wire being passed through the enlargement and the end looped backwardly transversely across the wire to thereby retain the enlargement in place on said wire of a wire-attachment for the outer end of the wire, said attachment comprising a shaft or "wire-bar," and a lever turnably-mounted on the shaft having a short arm with a hook-shaped extremity, said extremity being forked to form a claw over which the wire is adapted to engage.

9. In a wire-attachment of the character described, the combination with a wire and means for attaching the inner end thereof, said wire having an enlargement on its outer end and the outer end of the wire being passed through the enlargement and then looped backwardly transversely across the

wire to thereby hold the enlargement in place, of a wire-attachment for the outer end of the wire, said attachment comprising a shaft or "wire-bar," and a lever turnably-mounted on the shaft having a short arm with a hook-shaped extremity, said extremity being forked to form a claw over which the wire is adapted to engage, and a spring acting upon the lever to normally hold the wire under tension.

10. In a wire attachment of the character described, the combination with a wire and means for attaching the inner end thereof, said wire having an enlargement on its outer end and the outer end of the wire being passed through the enlargement and then looped backwardly transversely across the wire to thereby hold the enlargement in place, of a wire-attachment for the outer end of the wire, said attachment comprising a shaft or "wire-bar," and a lever turnably-mounted on the shaft having a short arm with a hook-shaped extremity, said extremity being forked to form a claw over which the wire is adapted to engage, and a spring connected to the long arm of the lever, and to a fixed point said spring normally holding the wire under tension and yielding to allow the short arm of the lever to be moved relative to the attaching means for the inner end of the wire to thereby permit the wire to be placed in position.

11. In a wire attachment of the character described, the combination with a wire having enlargements fixed to its opposite ends, means including a claw-shaped member engageable with the enlargement on the inner end of the wire, and an attaching means for the outer end of the wire, said means comprising a shaft or "wire-bar," or member fixed to said shaft and having a forked hub-portion and a projecting arm, a lever pierced to loosely receive the shaft, said lever passing through the fork of said hub-portion and having a hook-shaped short arm the extremity of which is forked to form a claw which receives the wire and is engageable with the enlargement at the upper end thereof, and a spring connecting the lever with the said projecting fixed arm and normally holding the wire under tension.

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

WILLIAM R. CUNNINGHAM.

Witnesses:

SAMUEL E. AUCK,
R. O. PERROTT.