

No. 645,948.

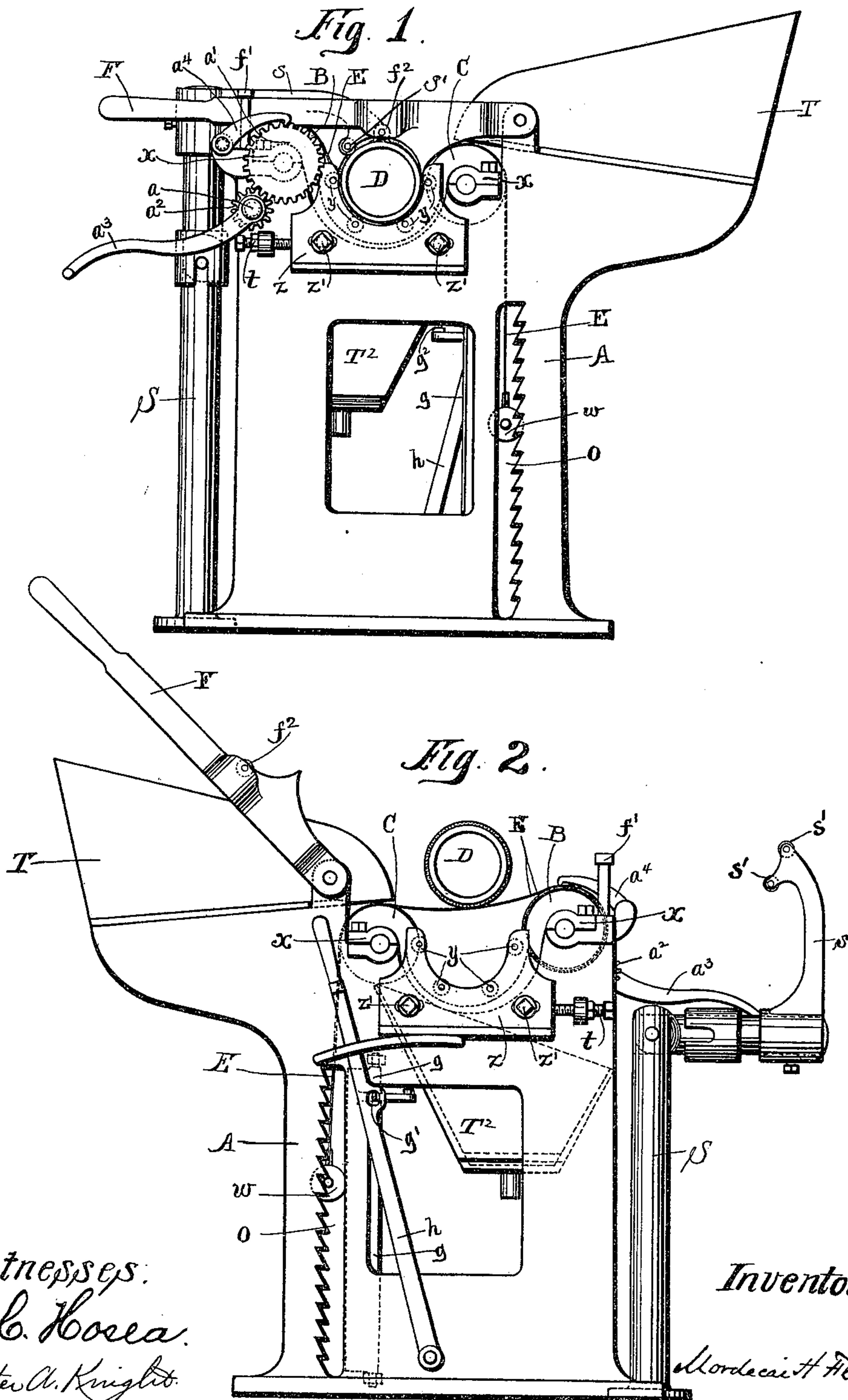
Patented Mar. 27, 1900.

M. H. FLETCHER.  
MACHINE FOR COATING CORE BARS.

(No Model.)

(Application filed June 3, 1899.)

2 Sheets—Sheet 1



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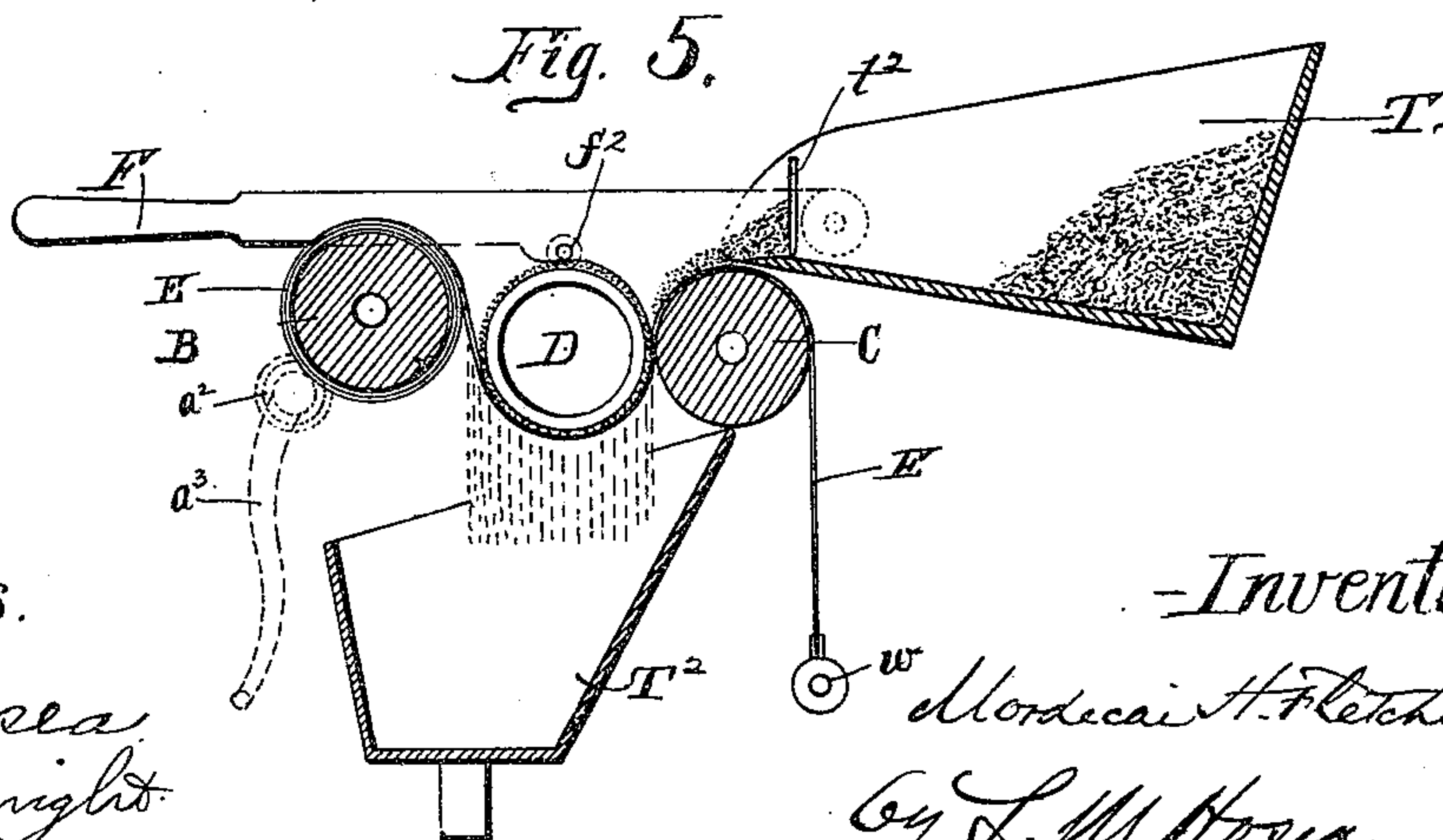
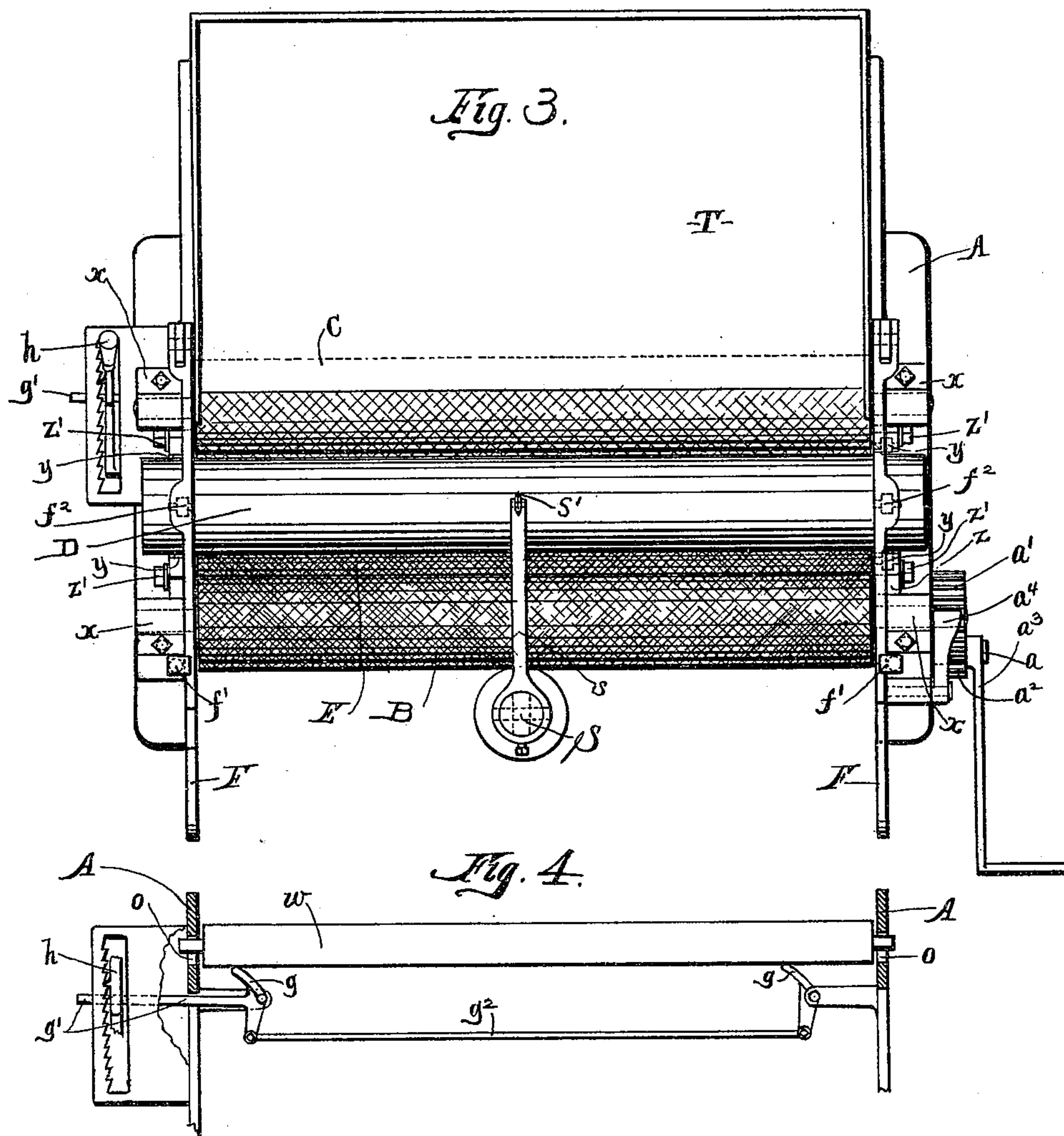
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2 Sheets—Sheet 2.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

MORDECAI H. FLETCHER, OF CINCINNATI, OHIO.

## MACHINE FOR COATING CORE-BARS.

SPECIFICATION forming part of Letters Patent No. 645,948, dated March 27, 1900.

Application filed June 3, 1899. Serial No. 719,302. (No model.)

*To all whom it may concern:*

Be it known that I, MORDECAI H. FLETCHER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Machines for Coating Core-Bars, of which the following is a specification.

My invention relates to machines for placing layers of material in a plastic state upon core-bars in building up core-surfaces for casting, and particularly layers of combustible or semicomcombustible material which may be covered by a final coating of loam, its object being to enable such layers to be placed upon core-bars in an economical and expeditious manner by unskilled persons, such as ordinarily employed in similar work in pipe-foundries, &c.

To this end my invention consists in a machine constructed as hereinafter set forth, wherein open-meshed web of textile material weighted at one end and propelled by a take-up roll at the other passes beneath the core-bar, carrying and applying the plastic material to the same.

Certain other elements and features of usefulness are embodied in the machine, all as hereinafter more fully set forth.

Mechanism embodying my invention is illustrated in the accompanying drawings, in which—

Figures 1 and 2 are opposite end elevations of a machine of preferred construction, showing the core-bar in position undergoing treatment. Fig. 3 is a plan view of the same; Fig. 4, a plan of the lever connections for locking the weight attached to the web at any point in its elevation, and Fig. 5 a diagram showing the relative positions and indicating the functions of the parts immediately concerned in applying the layer of plastic material to the core-bar.

Referring now to the drawings, A A designate the end pieces of the supporting-frame, having corresponding bearings  $x$  for the journal ends of rolls B C, leaving space between for a core-bar D, which intervenes in parallel relations. The journal of roll B at one end is extended beyond its bearings and provided with means for rotation. In the construction shown this consists of a spur-

gear  $a'$ , meshing with a spur-pinion  $a^2$ , set upon an adjacent stud  $a$ , projecting from the frame and provided with a hand-crank  $a^3$  and with a pawl  $a^4$  to be used as occasion requires.

Midway between and below the bearings  $x$  upon each end piece A and covering a suitable recess in the latter is an open socket-plate  $z$ , secured adjustably to the end piece by bolts  $z'$  and having a semicircular recess into which project antifriction-rolls  $y$ , pivotally carried by the plate, all as shown in Figs. 1 and 2. These antifriction-rolls furnish a rolling support for the core-bar D while the latter is undergoing treatment.

Secured at one end to the roll B, upon which it winds, is a web E, preferably of wire-cloth, of suitable width to cover the space desired. Winding forward over the roll B the web passes thence backward under the core-bar D, thence over the roll C, which is an idler, and downward to a weighted bar  $w$ , to which it is secured and by which it is held normally in tension and in constant upward pressure against the core-bar D.

To resist the lifting tendency upon the core-bar, there is provided at each end a lever F, pivoted at the rear of the end pieces A, passing over the core-bar, with which they contact through the medium of antifriction-rolls  $f^2$ , journaled in the lever, the forward end of each lever being engaged under catch projections  $f'$  to hold the core-bar in position during the operation. A further provision for this purpose may be used when necessary to prevent the bending of the core-bar at the center, consisting of an arm  $s$ , adjustably secured to the frame of the machine or to an independent standard S, as shown, and adapted to project over the core-bar and carry one or more friction-rolls  $s'$  contacting with it.

At the rear and secured to the end pieces A is a trough T, extending the entire length of the machine, to contain the material used. Its bottom is an apron whose front edge is about over the center of the rear roll C, a charge of material being brought forward by the attendant by means of a suitable hand-board or elongated scraper  $t^2$ .

The ends of the weight-bar  $w$  are extended outward to enter approximately vertical slots  $o$  in the end frames A, the rear walls of each slot being formed into downwardly-inclined



teeth, as shown. These slots are placed slightly to the rear of the normal path of the weight-bar  $w$ , which therefore ordinarily passes up and down without interference with the teeth, but may be locked by moving the weight-bar rearward, so as to engage the teeth. This locking is accomplished upon occasion by two cams or flaps  $g$ , vertically pivoted in front of the bar  $w$ , which by their rotation crowd the bar back and engage it with the toothed wall of the slots. The flaps are moved by a projecting arm  $g'$  of one of the flaps engaging a hand-lever  $h$  and by a connecting-rod  $g^2$ , extending from one flap to the other, to cause motion of both simultaneously.

The remaining parts and the functions of the parts described will be understood from the following description of the mode of operation: The core-bar  $D$  is placed in its roller-bearing between the rolls  $B$   $C$ , and the plates  $z$  are set forward or backward by set-screws  $t$  to bring the core-bar into the proper relations with the roll  $C$  to secure the desired thickness of the layer to be formed upon the core-bar. The levers  $F$  are then brought down and secured and the weight-bar  $w$  released and allowed to hang normally free, said bar being of suitable weight to give the desired tension upon the web  $E$  for the work to be performed. The pawl  $a^4$  is then thrown off and the web  $E$  unwound to its full length. The material in the trough  $T$ —such, for example, as the mixtures of combustible or semi-combustible material heretofore described by me in previous Letters Patent—is then brought forward in sufficient quantity by the hand-scraper  $t^2$ , Fig. 5, upon the web  $E$  between the roll  $C$  and core-bar  $D$ , and as the roll  $B$  is rotated, winding the web forward, the latter rotates the core-bar and the roll  $C$ , and the material is gradually carried with it under the core-bar  $D$ , against which it is held with increasing pressure, which presses out all surplus moisture from the material and forces its particles into close contact and enables the cementing agent to properly act in holding them together and to hold the layer firmly to the core-bar. The excess of liquid is caught in a suitable trough  $T^2$ , whence it may be drawn off and used again. When the layer is completed, the lever  $h$  is thrown back, which causes the flaps or cams  $g$  to crowd the bar  $w$  back into the notches of the slots  $o$ , there locking the same. The fastening-levers  $F$  are released and the roll  $B$  being then rotated the web lifts the core-bar  $D$  into the position shown in Fig. 2 convenient for removal. By substituting new plates  $z$  of proper size smaller-sized core-bars may be covered in the same machine; but in large plants a separate machine for each standard size of core-bar will be desirable.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. In a machine for applying layers of plastic material to core-bars, the combination of a take-up roll, an idler or web suspending

roll, a web secured to the take-up roll and passed over said suspending-roll, a weight on the free end of said web, catch mechanism for said weighted end of the web, and adjustably-mounted antifriction roller-bearings located beneath a portion of said web, between and below the take-up roll and suspending-roll, for the reception and rotation of a core-bar to be placed on said web, substantially as set forth.

2. In a machine for applying layers of plastic material to core-bars, the combination of a frame, a take-up roll and a web-suspending roll mounted in said frame in the same horizontal plane, roller-bearings adjustably mounted on the end pieces of said frame between and below the take-up roll and suspending-roll, a web secured to the take-up roll and passed over said suspending-roll, a weighted bar attached to the free end of said web, and lever mechanism for holding down a core-bar placed on said web and roller-bearings, substantially as set forth.

3. In a machine for applying layers of plastic material to core-bars, the combination of a take-up roll, a web-suspending roll mounted in the same horizontal plane with said take-up roll, a web secured to the take-up roll and passed over the suspending-roll, a weight attached to the free end of said web, open socket-plates adjustably mounted below said rolls and provided between the same with antifriction-rollers for reception and rotation of a core-bar to be placed on said web, and adjustable holding-down levers for securing the core-bar against the lifting tension of the web, substantially as set forth.

4. In a machine for applying layers of plastic material to core-bars, the combination of the take-up roll, the web-suspending roll, a web having one end secured to the take-up roll and its other end weighted and passed over said suspending-roll, the said take-up roll and suspending-roll being journaled in the same horizontal plane, adjustable roller-bearings mounted below and intermediate said take-up roll and web-suspending roll for reception and rotation of a core-bar, means for locking the weighted end of the web at any position, levers for holding down the core-bar on the said web and roller-bearings, and means for rotating the take-up roll, substantially as set forth.

5. In a machine of the character indicated, the combination of the take-up roll, the suspension-roll, the web having one end attached to the take-up roll and its other end depending from the suspension-roll, the weight-bar attached to the free end of said web, the toothed guideway to be engaged by said weight-bar, and means for moving the weight-bar into engagement with the teeth of the guideway as a holding-catch for the web, substantially as set forth.

6. In a machine of the character described, the combination of the take-up roll and suspension-roll mounted in the same horizontal



plane, the intervening adjustable roller-bearings for reception and rotation of a core-bar, a web secured at one end to the take-up roll and having its other end passed over the suspension-roll and provided with a weight-bar, means for locking said weight-bar at any position, the feed-trough discharging onto said web over the suspension-roll, and the catch-trough located below the web, substantially as set forth.

7. In a machine of the character indicated, the combination of the frame having end pieces provided with vertical toothed guide-slots, the take-up roll, the suspension-roll, a web secured to the take-up roll and passed over the suspension-roll and provided at its suspended end with a weight-bar, cams for acting on said weight-bar to engage it with the teeth of said guide-slots, and a hand-lever and connections for operating said cams, substantially as set forth.

8. In a machine of the character indicated, the combination of the take-up roll and idler-roll mounted in the same horizontal plane, a woven-wire web secured to the take-up roll and passed over the idler-roll, a weight-bar

attached to the free end of said web-roller, bearings located below the web and between the take-up and idler rolls for reception and rotation of a core-bar, a feed-trough discharging on said web, and a catch-trough located below the web, substantially as set forth.

9. In a machine of the character indicated, the combination of the take-up roll and the idler-roll mounted in the same horizontal plane, an open-mesh web secured to the take-up roll and suspended over said idler-roll, roller-bearings intermediate said take-up roll and idler-roll for reception and rotation of a core-bar, a feed-trough discharging on said web, a catch-trough located below said web, and means for pulling the web in tension to press plastic material against the core-bar and squeeze out surplus moisture, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MORDECAI H. FLETCHER.

Witnesses:

FREDK. E. NIEDERHELMAN,  
L. M. HOSEA.