No. 719,100. PATENTED JAN. 27, 1903.

H. FOISY.

MACHINE FOR SOFTENING HIDES OR SKINS.

APPLICATION FILED JULY 5, 1902.

NO MODEL. 4 SHEETS—SHEET 1.

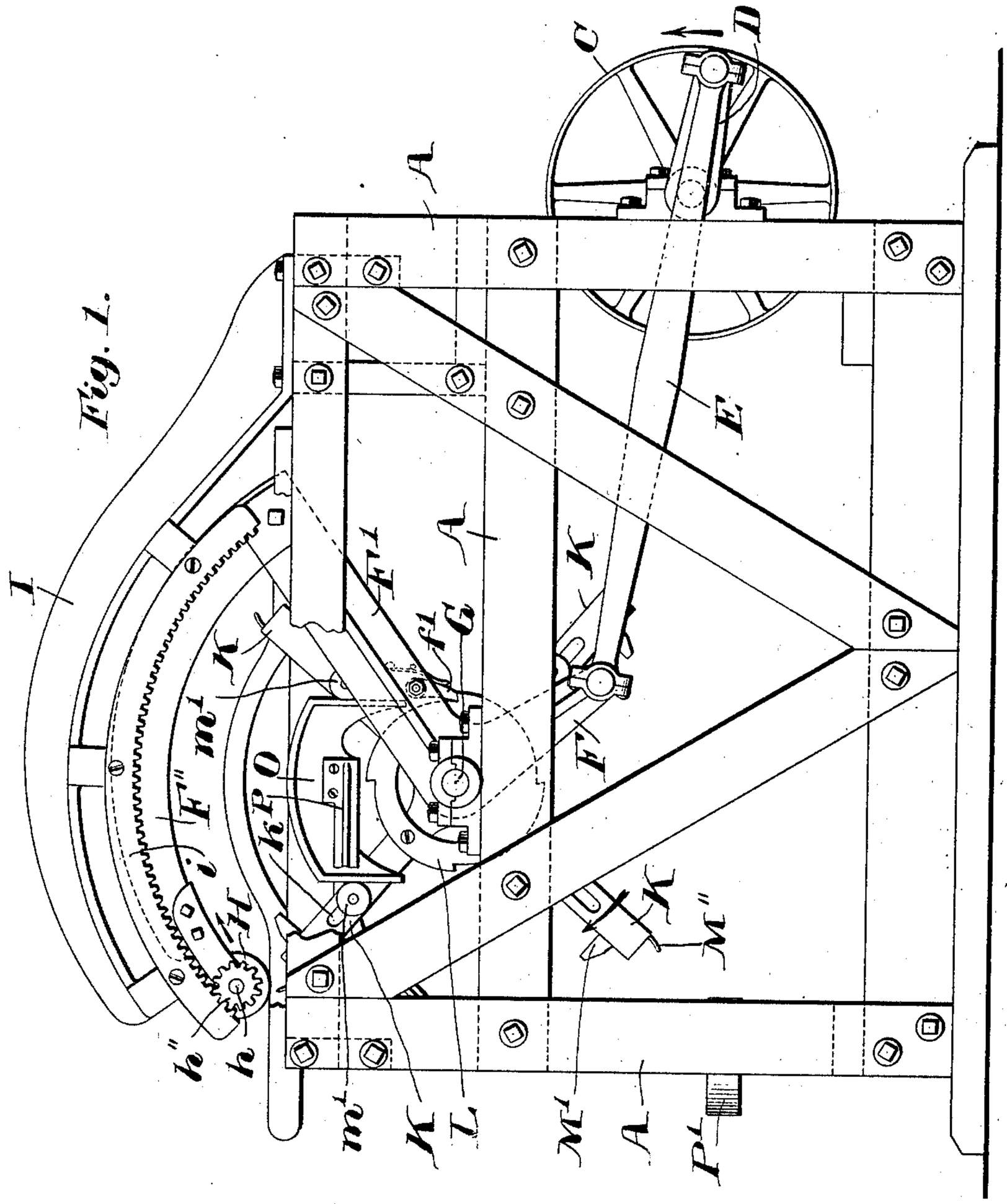

Fig. 1.

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NO MODEL. 4 SHEETS—SHEET 2.

Fig. 2.

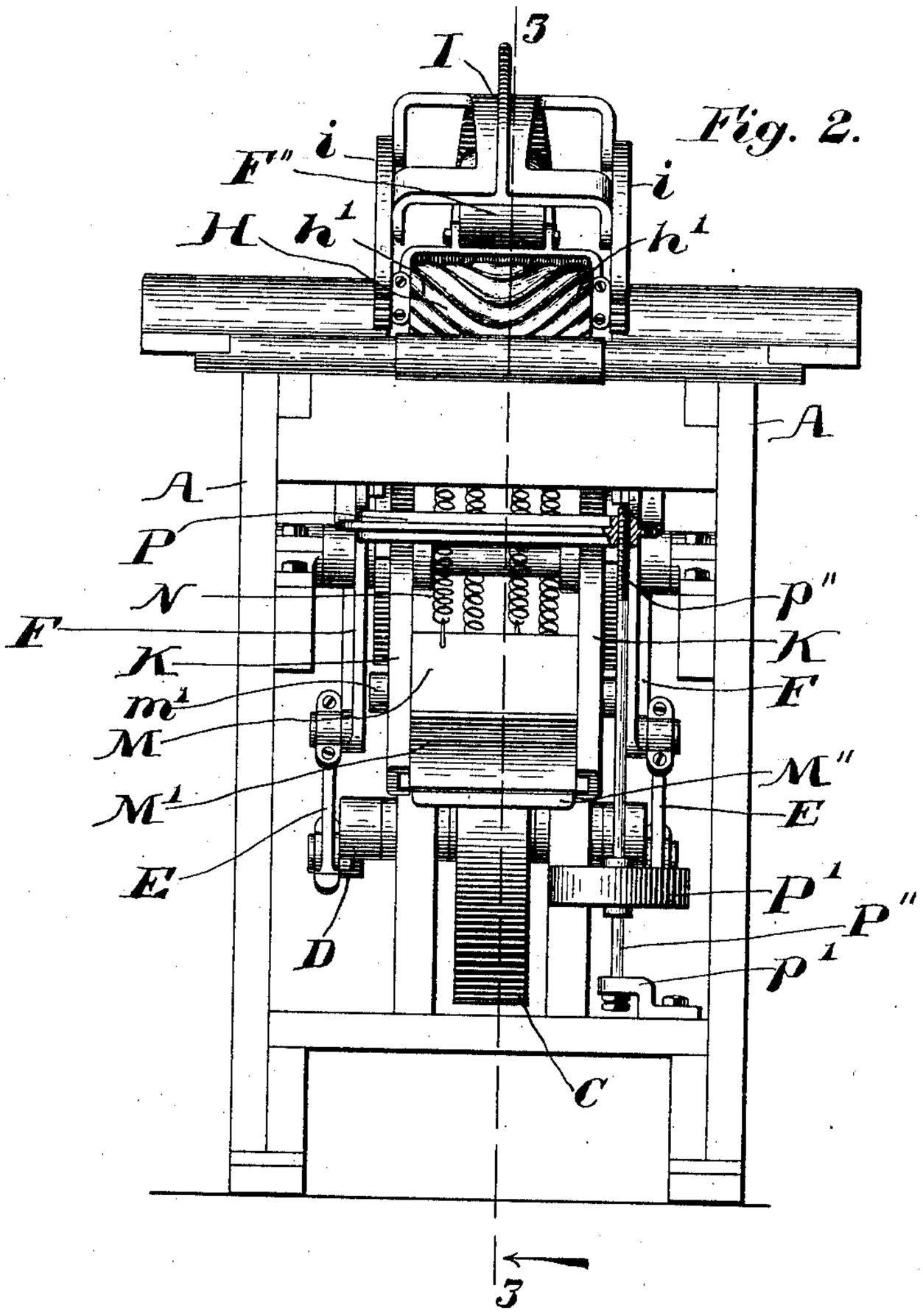
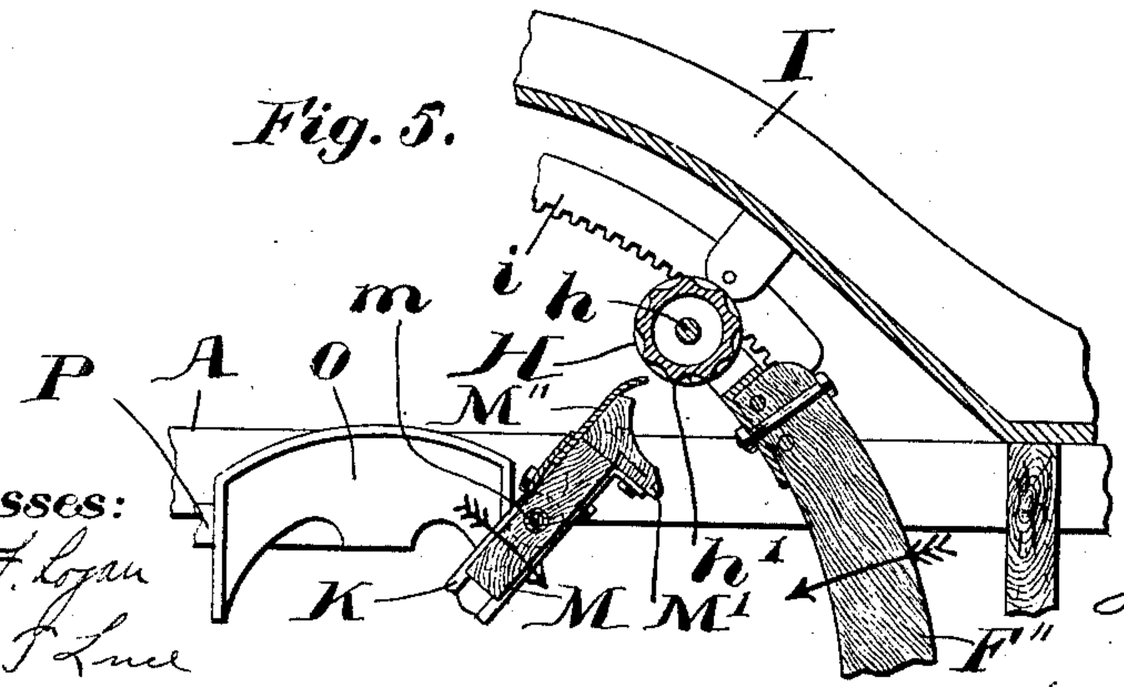


Fig. 5.



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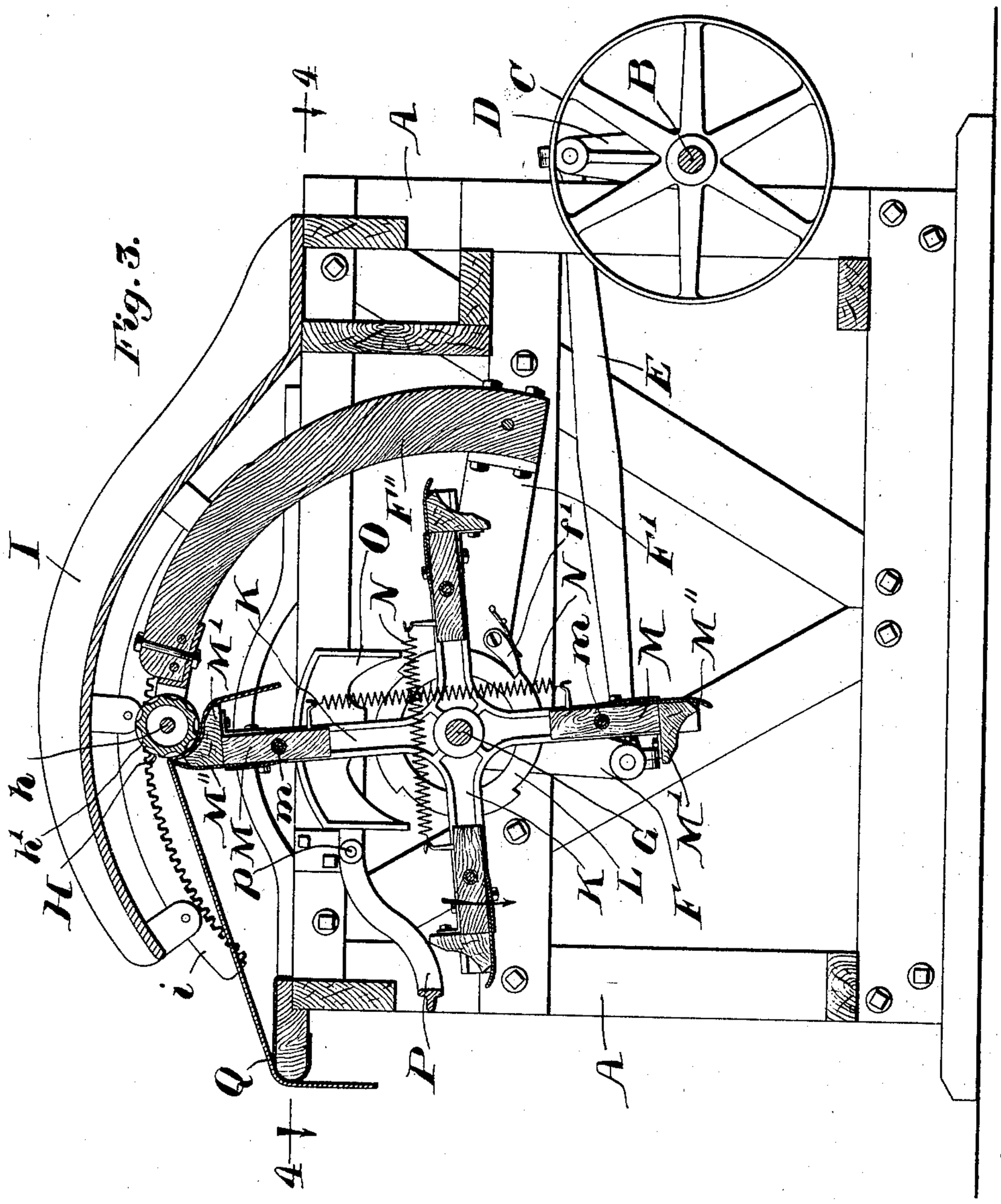
NO MODEL. 4 SHEETS—SHEET 3.

Fig. 3.



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H. FOISY.

MACHINE FOR SOFTENING HIDES OR SKINS.

APPLICATION FILED JULY 5, 1902.

NO MODEL. 4 SHEETS—SHEET 4.

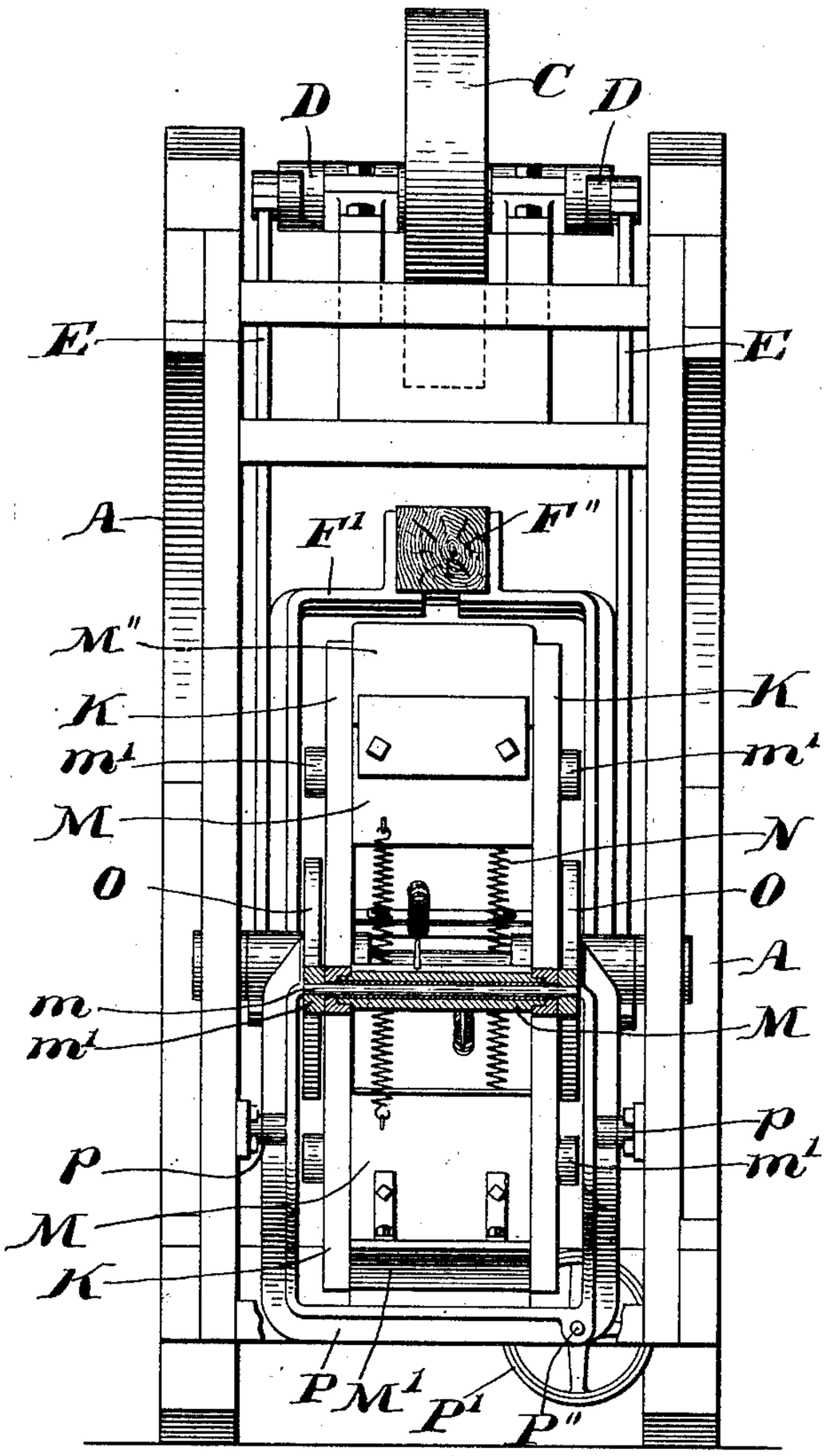

Fig. 4.

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UNITED STATES PATENT OFFICE.

HYACINTHE FOISY, OF LYNN, MASSACHUSETTS, ASSIGNOR TO CHARLES H. BRADSHAW, OF SOMERVILLE, MASSACHUSETTS.

MACHINE FOR SOFTENING HIDES OR SKINS.

SPECIFICATION forming part of Letters Patent No. 719,100, dated January 27, 1903.

Application filed July 5, 1902. Serial No. 114,394. (No model.)

To all whom it may concern:

Be it known that I, HYACINTHE FOISY, a citizen of the United States, and a resident of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Softening Hides or Skins, of which the following is a specification.

This invention relates to improvements in machines for softening hides or skins, generally termed "staking-machines," and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 is a side elevation of the machine, showing a portion of the frame removed for the better illustration of the working parts of the machine. Fig. 2 is a front elevation of Fig. 1. Fig. 3 is a longitudinal section on the line 3 3 in Fig. 2, showing the roller-carrying arm in position during its backward motion and showing one of the staking-tools in contact with the roller on the roller-carrying arm. Fig. 4 is a top plan of the machine, partly shown in section, on the line 4 4 shown in Fig. 3; and Fig. 5 is a detail sectional view showing one of the staking-tools moved inwardly out of contact with the roller on the roller-carrying arm to permit the said roller to move forward free of the staking-tool, as will hereinafter be more fully described.

In the drawings, A A represent the sides of the frame of the machine secured at proper distances apart by means of stays or braces, as usual.

B is the driving-shaft, journaled in bearings in the frames A A and set in a rotary motion by belt-power applied to a pulley C on said shaft or in any well-known or suitable manner. On the shaft B is secured a crank D, to which is pivotally connected a rod or link E, the other end of which is pivotally connected to an arm F, which is loosely journaled on a shaft G, journaled in bearings in the frames A A in any suitable manner.

Preferably integral with the arm F is made an arm F′, to which is secured a segmental arm F″, in bearings in the forward end of which is journaled a spindle *h*, to which is secured a grooved spreader-roll H, provided with a series of inclined or curved peripheral ribs *h′ h′*, oppositely inclined or curved from the center outward, as shown in Figs. 2 and 3, which ribs serve to spread out the skin from the middle portion of the roll outward during the staking operation.

To the upper portions of the frames A A is secured a segmental arm I, to which is suitably secured a pair of toothed segmental racks *i i*, as shown in Figs. 1, 2, 3, and 5.

To the ends of the spindle *h* of the grooved spreader-roll H are secured pinions *h″ h″*, which engage the teeth of the stationary segmental racks *i i*, as shown in Fig. 1, causing the spreader-roll H to rotate in one direction during the forward motion of the oscillating arm F″ and in an opposite direction during the backward motion of said oscillating arm F″.

It will be noticed that an oscillating motion is imparted to the arm F by the rotary shaft B and the crank-arm E during the operation of the machine as above described.

On the shaft G is secured a staking-tool-carrying frame, composed of a series of radial arms K K, to one side of which is secured a ratchet-wheel or toothed disk L, which is actuated by a spring-pressed pawl *f′*, pivotally connected to the oscillating arm F′ and adapted to engage the said toothed disk L during the backward motion of the segmental arm F″, by which arrangement an intermittent rotary motion is imparted to the staking-tool-carrying frame during the oscillating motion of the segmental arm F″, as shown.

In radial guides on the arms K are radially movable the slides M, each one being laterally perforated for the reception of a spindle *m*, to the ends of which are secured rollers *m′ m′*. (Shown in Figs. 1 and 4.)

k represents radial slots in the arms K to permit a radial movement of the spindles *m m* during the radial motion of the slides M during the operation of the machine, as will hereinafter be described.

The slides M are automatically moved toward the axis of the shaft G by the influence of springs N N, connecting one slide to the one diametrically opposite, or in any other suitable or well-known manner, as shown in Figs. 2, 3, and 4. During the rotary motion of the arms K the slides M are intermittently expanded by the slide-rollers *m′* coming in

contact with track-plates O O, secured to a forked lever or arm P, pivoted to the frames at *p p*, as shown in the drawings. The said track-plates are vertically adjustable for different thicknesses of leather, so as to obtain the desired pressure on the skin, &c., between the staking-tool M′, secured to or forming part of the slide M, and the grooved spreader-roll H during the operation of the machine. The staking-tool M′ is rigidly secured to the outer end of the radially-movable slide M, so as to cause a proper tension against the spreader-roll H and the hide or skin held between them by the action of the rollers *m′* engaging the adjustable tracks O O during the staking operation.

In practice I adjust the position of the track-plates O O by means of a wheel P′, secured to a vertical spindle P″, the lower end of which is suitably journaled in a bearing or bracket *p′*, secured to the frame of the machine and having its upper end screw-threaded, as shown at *p″* in Fig. 2, and connected to the outer end of the forked lever P, which is screw-threaded to receive the upper end of the spindle P″. By this arrangement the track-plates may be vertically adjustable relative to the rollers *m′* on the slides M as may be desired for the regulation of the position of the staking-tools M′ relative to the grooved spreader-roll H and the skin held between them during the staking operation.

To the rear of staking-tool M′, on each of the slides M, is secured a rigid or partially-yielding metal staking-blade M″ of the kind used in rotary staking-machines, as shown in Figs. 3 and 4.

The operation of the machine is as follows: The roller-carrying arm or segment F″ is set in an oscillating motion by any suitable or well-known mechanism, and during such oscillating motion of said segmental arm its grooved spreader-roll H is rotated intermittently in opposite direction by the engagement of the pinions *h″ h″* with the stationary segmental toothed racks *i i*, as described. During the oscillating motion of the segmental roller-carrying arm F″ an intermittent rotary motion is imparted to the staking-tool-carrying arms K K by the pawl *f′* engaging the teeth of the disk L, that is secured to the shaft G and arms K K, as described.

Q is the skin or hide that is to be staked. This is placed between the grooved spreader-roll H and one of the radially-movable staking-tools M′ at the time the roll H is at the end of its forward stroke, (shown in Fig. 1,) at which time the staking-tool is held stationary and away from contact with said roll by the influence of its spring or springs N. As the staking-tool-carrying arms are rotated in the direction of the arrow shown in Fig. 1 its rollers *m′* engage the tracks O O, causing the staking-tool to be forced radially outward again against the spreader-roll H, so as to hold the hide or skin with proper frictional resistance between the said staking-tool and rotary spreader-roll as long as the rollers *m′ m′* on the slide M are in contact with the tracks O O. During such operation the skin or hide Q is held by the operator with a proper tension, causing the grooved roll H to spread out, soften, and stretch the skin or hide by contact with the staking-tool M′ and coincidently by the staking-blade M″ causing the hide or skin to be kneaded and made soft and pliable. As the staking-tool-carrying arm during its rotation reaches the position shown in Fig. 5 its staking-tool and slide are released from the tracks O O and moved inward by the action of the springs N N, causing the hide or skin to be released from the roller H and the staking-tool to allow of its adjustment and so as to allow the spreader-roll H to move forward toward the operator without contacting with the staking-tool between which and the spreader-roll the hide or skin has been held and operated on. The arm F″, that carries the spreader-roll, now moves forward to its initial position, (shown in Fig. 1,) during which movement the staking-tool-carrying arms remain stationary, and during such time the operator adjusts the skin or hide so as to engage a new portion thereof with the staking devices, and thereby to gradually soften, spread out, stretch, and smooth the entire portion of the skin or hide.

In practice I may employ a suitable friction or brake device applied to the shaft G or a drum or pulley thereon, like the one arranged on winches or hoisting devices, so as to prevent the arms K K from being moved beyond the place in which they are left by the pawl *f′* on the oscillating arm F′ and to to be frictionally held in such position until such pawl again engages with the ratchet-disk L on the shaft G. This friction or brake device is, however, not shown in the drawings, as it is a well-known friction retaining device in machinery of various kinds.

What I wish to secure by Letters Patent and claim is—

1. In a leather-staking machine, in combination an oscillating roller-carrying arm having journaled at its free end a grooved spreader-roll, provided with pinions, toothed segmental racks, engaging the said pinions, an intermittently-rotating staking-tool carrier provided with radially-actuating staking devices, and means substantially as described for oscillating said roller-carrying arm, and for intermittently rotating said carrier and intermittently moving its staking devices radially during the operation of the machine as and for the purpose set forth.

2. In a leather-staking machine, provided with segmental racks in combination, an oscillating roller-carrying arm, a spreader-roll, mounted thereon and geared to the segmental racks, an intermittently-rotating staking-device-carrying frame actuated by said oscillating arm, radially-movable staking devices, mounted on said tool-carrying frame, springs for intermittently moving said devices away

from contacting with the spreader-roll and adjustable tracks engaging rollers or projections on the staking devices for intermittently moving said devices outward and holding them in contact with the spreader-roll substantially as and for the purpose set forth.

3. In a leather-staking machine, in combination, an oscillating spreader-roll, a carrying-arm, and means for rotating said spreader-roll alternately in opposite directions, an intermittently-rotating staking-device-carrying frame, radially-movable staking devices mounted in said frame, adjustable tracks for intermittently expanding said staking devices during the staking operation, and means for moving said staking devices free of the spreader-roll when released from the said tracks, substantially as and for the purpose set forth.

4. In a leather-staking machine, in combination, an oscillating spreader-roll-carrying arm, an intermittently-rotating staking-device-carrying frame, having radially and intermittently movable staking devices, a pawl on the spreader-roll carrier adapted to engage a toothed wheel on the staking-device-carrying frame for intermittently rotating the staking-device carrier, and means substantially as described for automatically and intermittently moving the staking devices to and from the rotary spreader-roll substantially as and for the purpose set forth.

5. In a leather-staking machine, in combination, a rotary spreader-roll, a rotary staking-tool-carrying frame, slides radially movable in said frame and staking-tools M′ rigidly secured to said slides, substantially as and for the purpose set forth.

6. In a leather-staking machine, in combination, a rotary spreader-roll, a rotary staking-tool-carrying frame, slides radially movable thereon, staking-tools rigidly secured to said slides and adjustable tracks O, O, engaging rollers on said slides for automatically clamping the hide or skin between said staking-tools and rotary spreader-roll during the staking operation, substantially as and for the purpose set forth.

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

HYACINTHE FOISY.

Witnesses:

ALBAN ANDRÉN,

OTIS N. RUBLER.