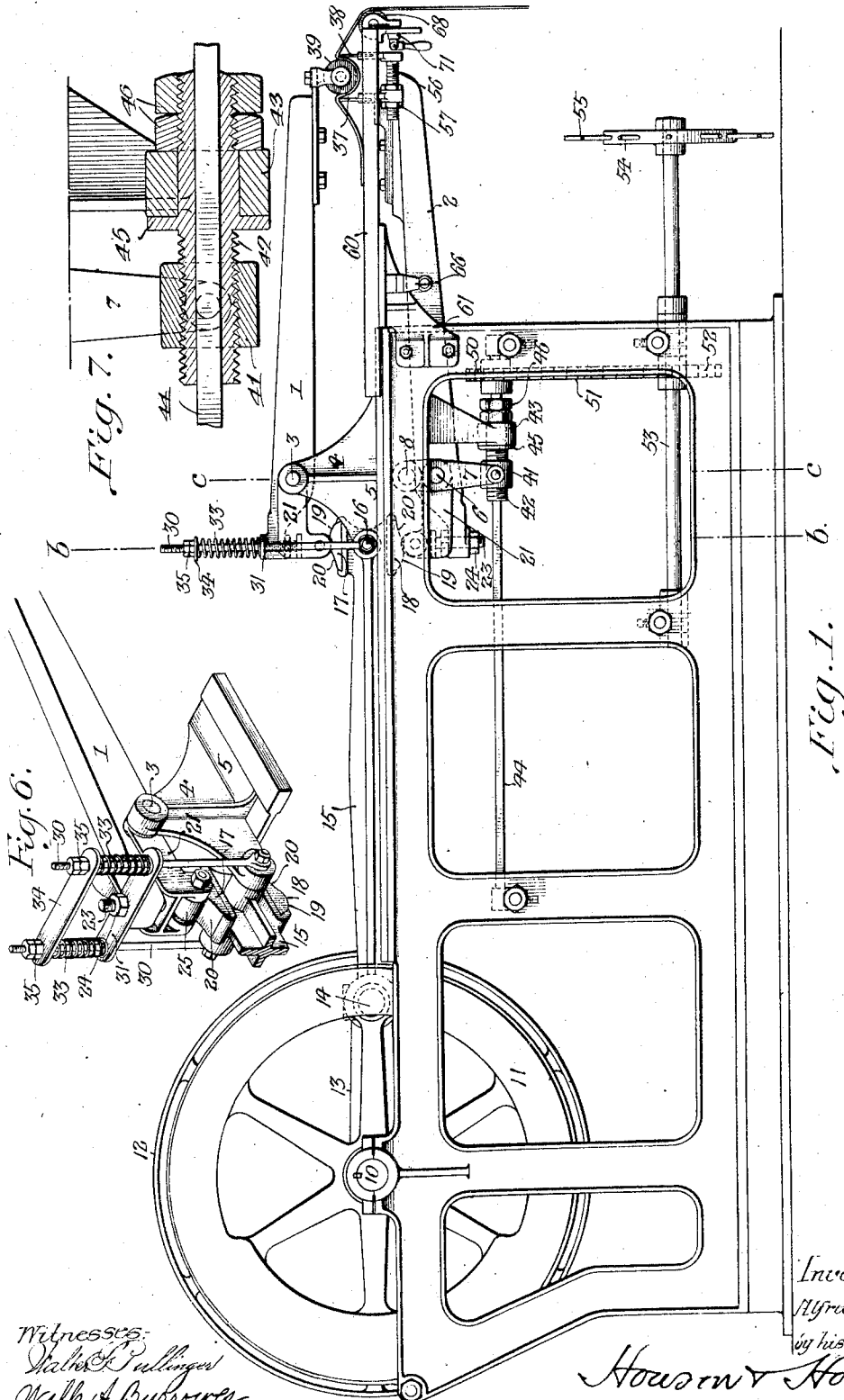


A. C. LAYMAN.
LEATHER STAKING MACHINE.
APPLICATION FILED MAR. 11, 1911.

1,043,050.

Patented Oct. 29, 1912.

3 SHEETS-SHEET 1.



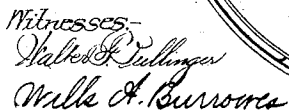
Witnesses:
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Inventor:
A. C. Layman
by his Attorneys.

Houson & Houson.

1,043,050.

3 SHEETS—SHEET 2.



Alfred C. Layman.
by his Attorneys

by his Attorneys
Houson & Houson

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3 SHEETS—SHEET 3.

Fig. 4.

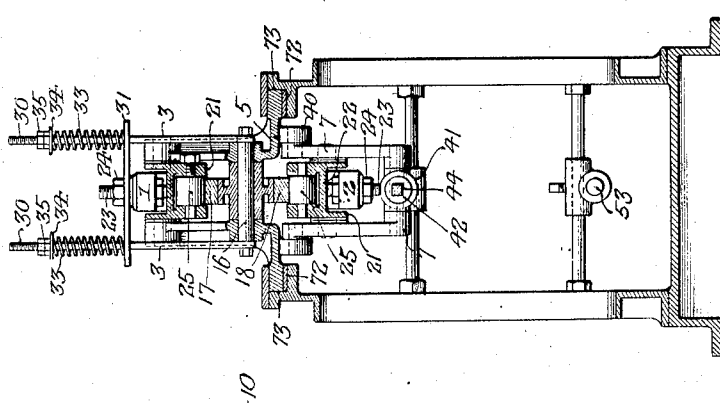


Fig. 5.

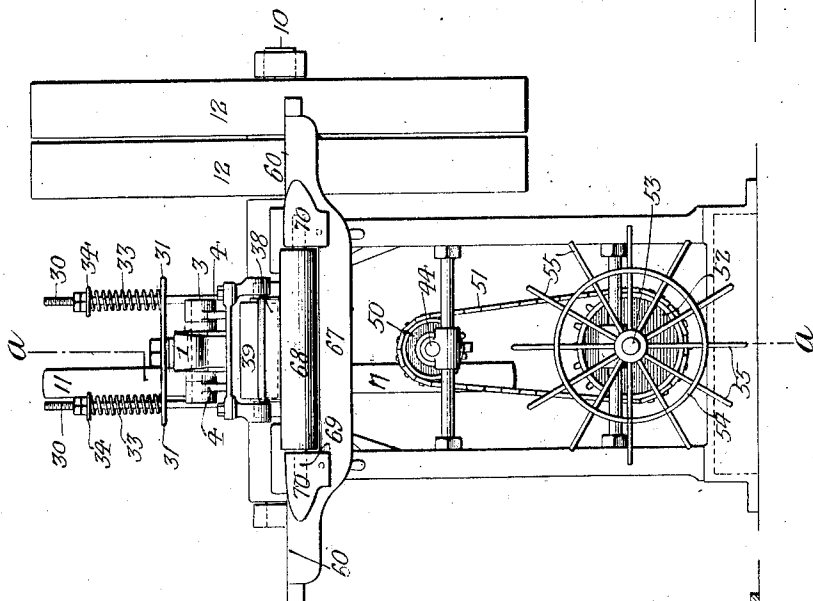
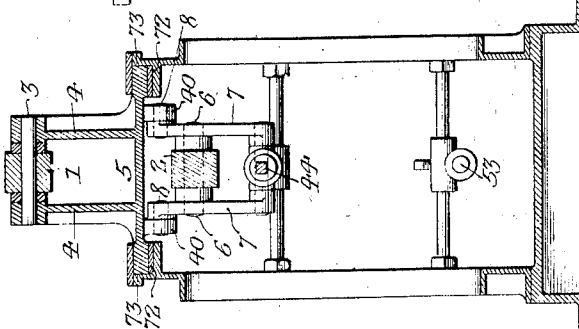


Fig. 5.



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UNITED STATES PATENT OFFICE.

ALFRED C. LAYMAN, OF WILMINGTON, DELAWARE.

LEATHER-STAKING MACHINE.

1,043,050.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed March 11, 1911. Serial No. 613,692.

To all whom it may concern:

Be it known that I, ALFRED C. LAYMAN, a citizen of the United States, and a resident of Wilmington, Newcastle county, Delaware, have invented certain Improvements in Leather-Staking Machines, of which the following is a specification.

My invention relates to machines for treating or working hides, skins and leather; and the object of my invention is to provide an improved form of staking machine capable of carrying out the staking operation in an efficient and satisfactory manner.

The important features of my invention relate to the mounting of the staking arms in connection with the cross-head whereby they are properly cushioned and opened by the cams during the operation of the fly wheel; and a further feature of my invention is the provision of means for ready adjustment of the staking elements with respect to each other.

These and other features of my invention are more fully described hereinafter, reference being had to the accompanying drawings in which:

Figure 1, is a side elevation of a staking machine embodying my invention; Fig. 2, is a sectional elevation on the line *a-a*, Fig. 3; Fig. 3, is an end elevation; Fig. 4, is a sectional elevation on the line *b-b*, Fig. 1; Fig. 5, is a sectional elevation on the line *c-c*, Fig. 1; Fig. 6, is a perspective view illustrating a detail of my invention; Fig. 7, is a sectional view on a larger scale illustrating a detail of my invention, and Fig. 8, is a view on a similar scale of the cams employed in my improved machine.

Staking machines in general comprise suitable frames having guideways in which a cross-head is adapted to slide; said cross-head serving to reciprocate a pair of arms or levers which may be pivotally mounted or hung in a suitable manner; the cross-head being operated by a suitable connection from a fly wheel or crank on a shaft driven from a suitable source of power. The said connection between the driving shaft and the cross-head is usually provided with cams so shaped and bearing such relation to the arms or levers, the latter carrying suitable means for engagement with the cams, that the positioning of the driving connection and the cams controlled thereby will control the position of said arms or levers and the engagement and disengage-

ment of means carried by said arms or levers with the leather in process of being softened.

In the drawings herewith, in which my improved staking machine is clearly illustrated, 1 represents the upper arm or lever, and 2 the lower arm or lever; the upper lever being pivoted at 3 to fixed side members or brackets 4 carried by a cross-head 5, and the lower lever being pivoted at 6 to pendulum links 7 carried by said cross-head and pivotally hung therefrom at 8.

10 represents the main driving shaft, which may carry a fly wheel 11 and suitable fast and loose pulleys 12; said fly wheel having a crank arm 13 or other connection attached at 14 to a connecting rod 15 which in turn is pivotally connected at 16 to the cross-head 5. At or adjacent its engagement with said cross-head, the connecting rod is provided with cams 17 and 18 on opposite sides of its pivotal point; said cams having high and low faces 19 and 20 oppositely arranged on opposite sides of said pivot.

Independent of the arms or levers 1 and 2, but rocking on the same pivots, are links 21 having cross bars 22 upon which bear adjusting screws 23 secured to said arms or levers 1 and 2, by lock nuts 24. These links carry rollers 25 in engagement with the cams 17 and 18, so that movement imparted by said cams in assuming their varying positions under the influence of the connecting rod 15 will be directly transmitted to the arms 1 and 2. It is, of course, necessary that the rollers controlling the position of the arms be maintained in contact with said cams, and for this purpose the following means may be provided: As shown in Fig. 6, the pin forming the pivotal connection for the connecting rod and the cross-head carries at its outer ends rods 30 disposed substantially vertical, which rods pass through a plate 31 connected to the upper arm 1. Above this plate are springs 33 maintained under suitable tension by means of washers 34 and nuts 35, and these springs tend to hold the end of the upper arm 1 so as to cause the roller carried by the link 21 to engage the upper cam of the connecting rod. Any movement of said cam therefore will be imparted to this roller, and the arm will be moved in turn, depending upon the path of said cam.

To keep the lower arm with its rear end

raised in engagement with the cam, I may provide a flat spring 36 carried by the cross-head. As the arms are carried back and forth, the outer end of the same carrying the usual blades 37 and 38 and roller 39 will be separated, permitting the skin to be shifted so that when the arms close again with the roller holding the skin against the blades, a fresh portion of the skin may be operated upon.

The upper arm or lever carries the roller 39, while the lower arm carries the blades 37 and 38; the blade 37 being of fiber and more or less blunt, while the blade 38 is of metal and is relatively sharp, and in the present instance is mounted in front of the blade 37 or toward the operator. The position of these blades with respect to the roller should be regulated for skins of varying thickness, and this may be accomplished in the following manner: The forward blade 38 may be fixed with respect to the lever or arm 2 so that the lever itself must be moved in order to change its position, and this movement of the arm or lever may be accomplished in the following manner: As before noted, the lever 2 is pivoted to pendulum links 7 carried by the cross-head, which links are in turn pivotally connected at 8 to fixed ears or lugs 40 carried by said cross-head, while the links carrying said arm or lever are further trunnioned to a nut 41 adapted to a threaded sleeve 42 carried by a bracket 43 depending from the under side of the cross-head; said sleeve sliding on a squared shaft 44 as the cross-head moves back and forth. The sleeve is fixed in position by reason of an annular shoulder 45 thereon abutting the bracket carrying the same, with suitable locking means on the other side of said bracket, which locking means may be suitable set screws or other equivalent devices such as the nuts 46 shown. By turning the threaded sleeve with respect to the nut carried by the links 7 to which the lower arm is pivoted, the longitudinal position of said arm may be adjusted. To effect turning of this sleeve, the following means may be employed: The outer end of said squared shaft on which the threaded sleeve slides carries a sprocket wheel 50 which may be driven by a chain 51 from another sprocket wheel 52 carried by a shaft 53 suitably journaled in the lower part of the frame of the machine, which shaft 53 may be operated by a suitable wheel 54 having spokes 55; the movement of said wheel being usually effected by the operator kicking the same; the spokes extending beyond the rim of the wheel and in relatively easy access of the operator. It will be seen, therefore, that upon rotating the squared shaft, thus turning the threaded sleeve, the nut 41 may be moved back and forth to the desired extent to regulate the position of the forward blade

without materially affecting the operation of said arm by its cam 18 due to the shifting of the position of the roller carried by the links cooperating with said arm with relation to said cam. The rear blade 37 carried by the lower arm or lever is mounted on screw stems 56 carried by the forward end of said arm, and said screw stems may be provided with locking nuts 57 or equivalent means so that when the blade 37 is adjusted, it may be locked in its adjusted position. Similar means may be provided for proper adjustment of the brackets carrying the roller 39 of the upper arm or lever in case it be desired to employ a larger or smaller roller carried by said arm 1.

At the forward end of the machine I provide supporting means in the shape of a pair of tables or shelves, which shelves or tables are removable if desired. These shelves or tables are indicated at 60 and are carried by brackets 61 secured to the side frames of the machine; said brackets having suitable means whereby the shelves may be removably mounted therein and secured by nuts 66. The outer ends of these shelves or tables are preferably connected by a cross piece 67, having its upper central portion cut away for the reception of a substantially cylindrical member or roller 68, over which the skins are passed by the operator. This member is really in the nature of a breast roll against which the operator leans to hold the skin. Constant use in the manner indicated wears the same irregularly, since it is usually and preferably made of rubber, and to provide for adjustment of this member and to effect as nearly as possible an even wear of the same, it is provided with shaft or spindle ends 69 mounted in hinged bearings 70, which bearings may be closed by lock nuts 71 having suitable operating means which serve to frictionally hold said shaft or spindle ends in their journals or bearings. Should wear occur, the bearings may be opened and the member shifted slightly in said bearings so as to bring a fresh face into position for engagement by the operator.

I claim:

1. In a leather staking machine, the combination of a pivotally mounted arm, a swinging support for said arm, a threaded sleeve suitably supported for rotative movement, means for moving said sleeve, and a nut on said sleeve operatively connected with said swinging support whereby movement of said threaded sleeve will effect longitudinal movement of the arm.

2. In a leather staking machine, the combination of an arm carrying staking elements, a swinging support in which said arm is pivotally mounted, a threaded sleeve, a rotatable support for the same, a nut on said sleeve operatively connected to said

swinging support, and means for rotating said threaded sleeve to move said nut and effect longitudinal movement of the arm.

3. In a leather staking machine, the combination of a pivotally mounted arm, a swinging support for said arm, a threaded sleeve, a shaft carrying said sleeve, means for moving said shaft, and a nut on said sleeve in operative engagement with said swinging support whereby movement of said threaded sleeve will effect longitudinal movement of the arm.

4. In a leather staking machine, the combination of an arm carrying staking blades, a swinging support in which said arm is pivotally mounted, a threaded sleeve, a rotatable shaft carrying the same, a nut on said sleeve pivotally connected to said swinging support, and means for rotating said shaft whereby movement is imparted to said threaded sleeve to effect longitudinal movement of the arm.

5. In a leather staking machine, the combination of a frame, a cross-head reciprocable therein, means for moving said cross-head, a swinging support carried by said cross-head, an arm pivotally hung on said swinging support, a threaded sleeve suitably supported means for rotating said sleeve, and a nut on said sleeve in operative engagement with said swinging support whereby movement of said threaded sleeve will effect longitudinal movement of the arm.

6. In a leather staking machine, the combination of a pivotally mounted arm or lever, a swinging support for said arm, a squared shaft, a threaded sleeve thereon, a nut on said sleeve, and a connection between said nut and the link supporting the arm whereby movement of said squared shaft may effect longitudinal movement of the arm.

7. In a leather staking machine, the combination of a cross-head, links carried thereby, an arm pivotally hung in said links and carrying a pair of blades, a squared shaft, a threaded sleeve thereon, a nut trunnioned to said links and threaded on the sleeve whereby movement of said squared shaft may effect longitudinal movement of the arm and the blades carried thereby, and means for turning said squared shaft.

8. In a leather staking machine, the combination of a frame, a cross-head arranged to slide in said frame, means for moving said cross-head, pivot pins carried by said cross-head, a pair of arms journaled on said pins and movable with the cross-head, cams pivotally connected to said cross-head, links journaled on the pins carried by the cross-head, rollers carried by said links, means for maintaining said rollers in engagement with the cams whereby the arms may be caused to open and close by the change in position of said cams during movements of

the cross-head, a pair of blades carried by one of said arms at the forward end of the same, a swinging support between said arm and the cross-head, a threaded sleeve suitably supported for rotative movement, means for moving said sleeve, a nut on said sleeve operatively connected with said swinging support whereby movement of said threaded sleeve will effect longitudinal movement of said arm, and a roller carried by the other arm for coaction with said blade.

9. In a leather staking machine, the combination of a frame, a cross-head arranged to slide in said frame, means for moving said cross-head, pivot pins carried by said cross-head a pair of staking arms, one of said arms being journaled on one of said pins and both of said arms being movable by the cross-head, cams pivotally connected to said cross-head, a swinging support for the other staking arm, a plurality of links, one of said links being journaled on one of the pins carried by the cross-head and the other link being journaled on the swinging support, rollers carried by said links, means for maintaining said rollers in engagement with the cams whereby the arms may be caused to open and close by the change in position of said cams during movements of the cross-head, a pair of blades carried by one of said arms at the forward end of the same, a threaded sleeve suitably supported for rotative movement, means for moving said sleeve, a nut on said sleeve operatively connected with said swinging support whereby movement of said threaded sleeve will effect longitudinal movement of the arm carried by the swinging support, and a roller carried by the other arm for coaction with said blades.

10. In a leather staking machine, the combination of a frame, a cross-head arranged to slide in said frame, means for moving said cross-head, pivot pins carried by said cross-head, a pair of arms, one of said arms being journaled on one of said pins and movable with the cross-head, a swinging support journaled on the other pin and carrying the other arm, cams pivotally connected to said cross-head, links journaled on the same axis as the arms, rollers carried by said links, and means for maintaining said rollers in engagement with the cams whereby the arms may be caused to open and close by the change in position of said cams during movements of the cross-head.

11. In a leather staking machine, the combination of a frame, a cross-head arranged to slide in said frame, means for moving said cross-head, pivot pins carried by said cross-head, a pair of arms, one of said arms being journaled on one of said pins and movable with the cross-head, cams pivotally connected to said cross-head, a plurality of

links, rollers carried by said links, means for maintaining said rollers in engagement with the cams whereby the arms may be caused to open and close by the change in position of said cams during movements of the cross-head; and a swinging support connecting one of said arms with the cross-head whereby the said arm may have movement with and independently of said cross-head, said roller-carrying links being journaled on the same axis as the arms.

12. In a leather staking machine, the combination of a frame, a cross-head arranged to slide in said frame, means for moving said cross-head, pivot pins carried by said cross-head, a pair of staking arms, one of said arms being journaled on one of said pins, and both of said arms being movable

by the cross-head, a swinging support for the other staking arm, a plurality of links, one of said links being journaled on one of the pins carried by the cross-head, and the other link being journaled on the swinging support, rollers carried by said links, and means for maintaining said rollers in engagement with the cams whereby the arms may be caused to open and close by the change in position of said cams during movements of the cross-head.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ALFRED C. LAYMAN.

Witnesses:

MURRAY C. BOYER,
WM. A. BARR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."