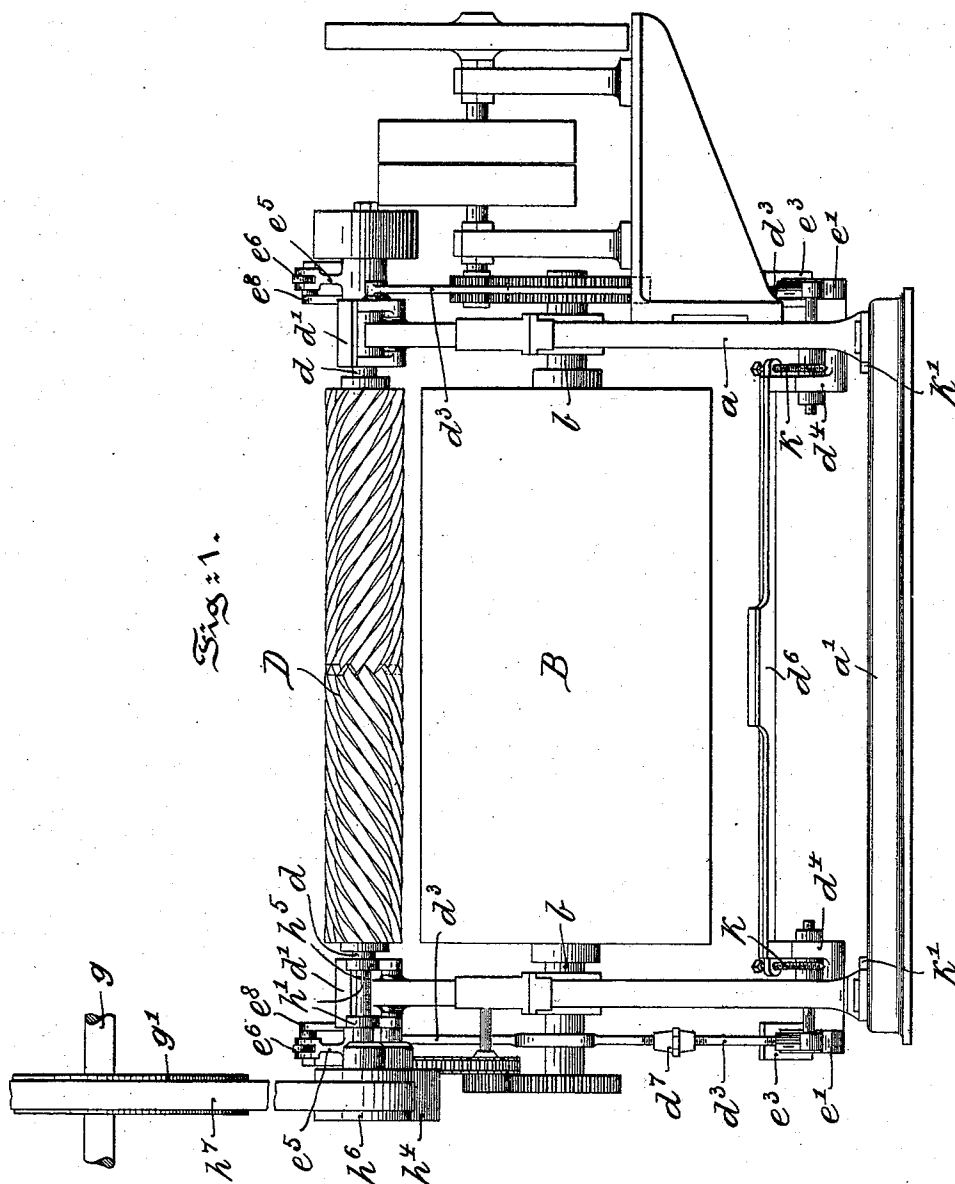


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MACHINE FOR TREATING HIDES, SKINS, OR LEATHER.

No. 572,533.

Patented Dec. 8, 1896.



Witnesses:
Thomas M. Smith.
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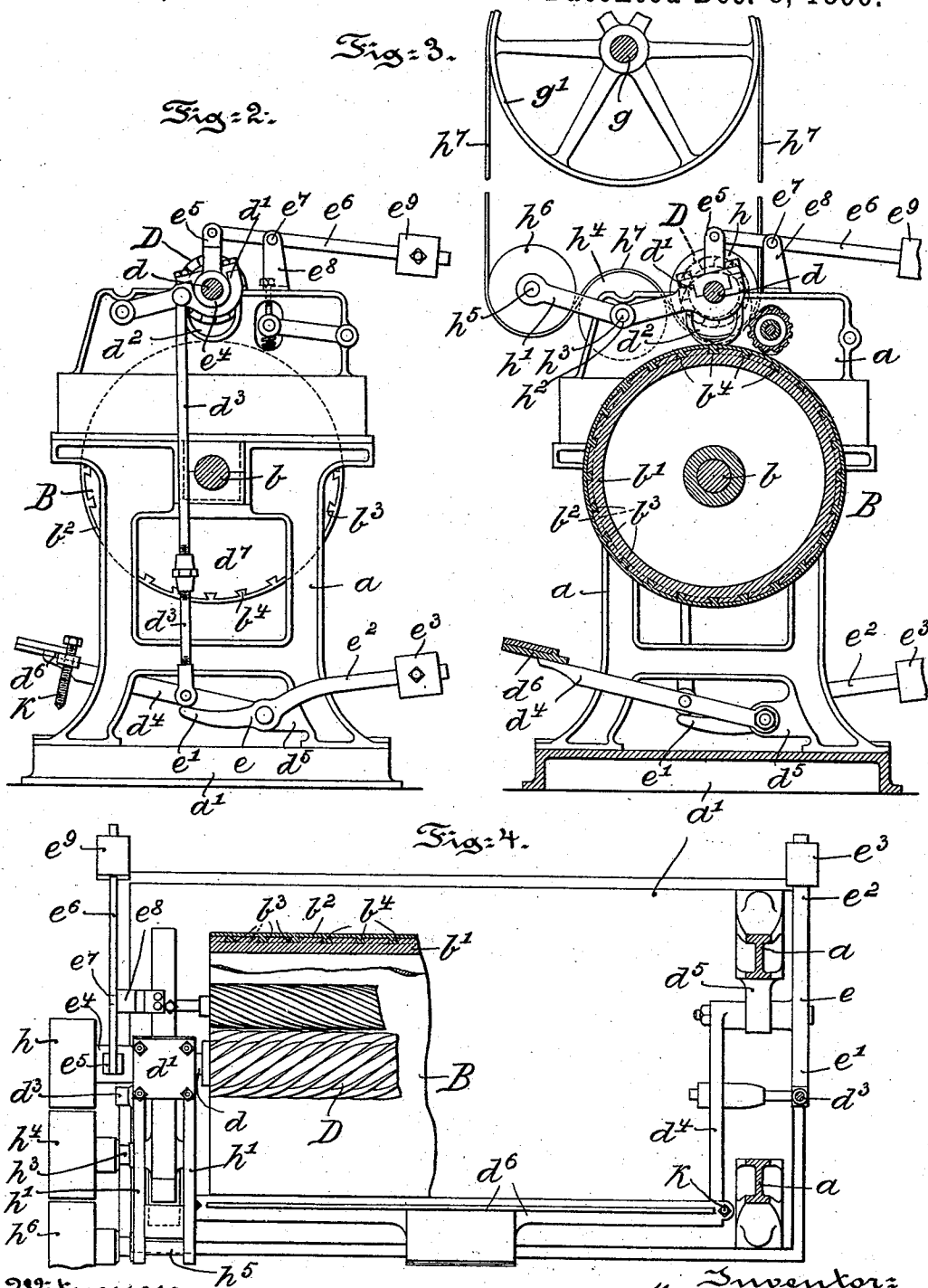
Inventor:
William Evans,
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UNITED STATES PATENT OFFICE.

WILLIAM EVANS, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR TREATING HIDES, SKINS, OR LEATHER.

SPECIFICATION forming part of Letters Patent No. 572,533, dated December 8, 1896.

Application filed June 1, 1896. Serial No. 593,694. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EVANS, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Treating Hides, Skins, or Leather, of which the following is a specification.

My invention has relation to a machine for fleshing, scudding, cleansing, slicking, skiving, unhairing, or laying out hides or skins, and for analogous purposes; and it relates particularly to the construction and arrangement of the drum having a yielding or elastic surface upon which the hide or skin is supported while passing through the machine, to the means for supporting and counterpoising the cutter or operating-cylinder, and to the means for actuating the cylinder directly from the driving-shaft.

The principal objects of my invention are, first, to provide in a machine of the character described a drum upon which the hide, skin, or leather is supported, said drum consisting of an inflexible core or barrel having a series of undercut grooves arranged longitudinally, peripherally, or both longitudinally and peripherally, in the outer face of the core or barrel, and an endless elastic covering secured to the outer surface of said core or barrel by means of said grooves; second, to provide in such a machine a fleshing, shaving, or cutting cylinder adapted to be brought down upon the hide, skin, or leather upon the drum by a treadle or other suitable mechanism, said cylinder being normally held above the drum out of engagement with the hide, skin, or leather by a system of counterweighted levers so arranged as to permit of the downward movement of the cylinder without backlash or slip thereto, and, third, to provide in such a machine, in connection with the main driving-shaft and the cylinder, a link pivoted to the shaft of an idle-pulley and supporting at either end a pulley, whereof one is secured to the cylinder-shaft, and a belt passing over the driving-pulley under the pulleys supported by the link and over the idle-pulley in such manner that when the pulley of the cylinder is depressed or elevated the pulley at the other end of the link is correspondingly elevated or depressed to thereby permit the

cylinder to move vertically without increasing or decreasing the tension upon the belt.

My invention, stated in general terms, consists of a machine for treating hides, skins, or leather, constructed and arranged in substantially the manner hereinafter described and claimed.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is a front elevational view of a machine embodying the main features of my invention. Fig. 2 is a side elevational view of the machine with certain parts removed to more clearly illustrate the construction and arrangement of the same. Fig. 3 is a cross-sectional view of the machine; and Fig. 4 is a top or plan view, partly broken away, of the machine.

Referring to the drawings, *a* represents the standards of the machine, preferably mounted upon a base *a'*. In the standards *a* and at preferably the center thereof is supported a shaft *b*, carrying the drum *B*, upon which the hide, skin, or leather to be treated is supported. The drum *B* consists of a core or barrel *b'*, preferably of metal, over the outer surface of which is drawn a tight-fitting sleeve or roll *b²* of rubber or similar yielding or elastic material. This sleeve or roll *b²* is held to the core or barrel *b'* in the following preferred manner: Upon the outer face of the core or barrel *b'* is formed a series of undercut grooves *b³*, which may be arranged longitudinally on the core, peripherally thereon, or both longitudinally and peripherally. The last arrangement is preferred. Upon the core or barrel thus grooved is introduced a layer of elastic material in a plastic or dough-like form, and this layer is pressed into the grooves *b³*, the layer being thereby provided on its under face with a series of ribs *b⁴*, dovetailing in the undercut grooves *b³*. Where the plastic substance is rubber, the layer thus formed is suitably baked until hard, and thereafter an outer layer of vulcanized rubber is applied thereto by means of cement or other suitable substance.

When formed as above described, the elastic face of the drum *B* is securely united to

the metal core and will not under heat, pressure, or atmospheric changes separate or peel off therefrom. Directly above the drum B is mounted the cutter, fleshing or slating cylinder D, the shaft d of which is journaled in suitable separable boxes d' , having a range of vertical or up-and-down movement in suitable recesses d^2 of the standards a . To the lower half of each box d' is pivotally secured a vertically-arranged link d^3 , the other end of each of which is pivotally secured to a treadle-arm d^4 , as clearly illustrated in Fig. 2 of the drawings. The treadle-arms d^4 are each by preference pivoted at one end upon a bracket or extension d^5 of the standards a of the machine and near the base a' thereof. The free ends of the arms d^4 are connected by a foot-piece d^6 , upon which the foot of the operator is adapted to rest to depress the treadle-arms and, through the links and boxes, to depress the cylinder D toward the drum B. The links d^3 by preference are made in two pieces connected together by a threaded sleeve d^7 to form a means of adjusting the length of said links. Upon the brackets d^5 and at either side of the machine is pivoted a counterpoising lever e , the front ends e' of which abut directly against and under the pivotal connection of the links d^3 with the treadle-arms d^4 , while the rear ends e^2 of the levers e are provided with adjustable weights e^3 , designed to elevate the front ends e' of the levers and to thereby elevate the treadle-arms d^4 , the links d^3 , and consequently the boxes d' and cylinder D.

Upon the outer ends of the cylinder-shaft d are also located the sleeves e^4 , each provided with an upwardly-projecting forked arm e^5 , to the forks of which one end of a counterpoising or weighted lever e^6 is in pivotal connection. These levers e^6 are by preference pivoted, as at e^7 , to a bracket or extension e^8 at the upper end of the standards a . The free end of each lever e^6 is provided with an adjustable weight e^9 , adapted to elevate the end of the lever pivoted to the sleeve e^4 , surrounding the shaft d , and to thereby elevate or raise said shaft, its boxes, and the cylinder D. By the arrangement of the two levers e and e^6 the cylinder D is balanced in such a manner that the cylinder is depressed positively by the treadle, and no backlash or slip can therefore occur.

The cylinder D is driven directly from a main driving-shaft g in the following preferred manner: Upon the shaft d of the cylinder D is keyed or otherwise secured a pulley h , moving upward and downward with the shaft d and boxes d' . The boxes d' are suspended from one end of an arm h' , pivoted, as at h^2 , to a stud h^3 , upon which an idle-pulley h^4 is adapted to revolve. The other end of the arm h' carries a stud h^5 , upon which a pulley h^6 is adapted to rotate. A belt h^7 is passed around the driving-pulley g' , keyed to the shaft g , under the pulley h^6 , over the idle-

pulley h^4 , and under the pulley h , which drives the shaft d . From this description it is apparent that when the shaft d and pulley h move downward the pulley h^6 will be elevated a corresponding distance by the movement of the arm h' , and that if the shaft d and pulley h' are elevated the pulley h^6 will be moved downward a corresponding distance by the movement of the arm h' , and hence the belt h^7 will maintain its normal tension irrespective of the movement of the shaft d , pulley h , and cylinder D.

To prevent the foot-piece d^6 and treadle-arms d^4 from being depressed too far, and hence to prevent the cutter-cylinder D from cutting too deeply into the skin or into the flexible surface of the drum B, a gage or gages may be used consisting, preferably, of an adjustable screw or screws k , adapted to impinge upon a stop k' , formed upon the base a' or upon any part of the standards or frame of the machine.

It will be apparent to those skilled in the art to which my invention appertains that change in details of the mechanical constructions hereinbefore explained may be made without departing from the spirit and general scope of my invention, and hence,

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the character described, a drum upon which the hide, skin or leather is adapted to be supported, said drum consisting of a metal core or barrel of cylindrical form, upon the outer periphery of which are formed two series of undercut grooves, one series being arranged longitudinally of the drum and the other at right angles to the first series, a layer of plastic material surrounding said core or barrel and pressed into the grooves, and an outer layer of rubber or analogous material united to the layer of plastic material but not entering said grooves, substantially as and for the purposes described.

2. In a machine of the character described, a fleshing or analogous cylinder, vertically-movable boxes supporting the same, a treadle mechanism pivotally secured to said boxes and adapted to lower said boxes and cylinder, a series of counterpoising weighted levers adapted to elevate said treadle and thereby to indirectly elevate the boxes, and a series of counterpoising weighted levers pivotally secured to the boxes and adapted to directly elevate the same, substantially as and for the purposes described.

3. In a machine of the character described, a fleshing or analogous cylinder, vertically-movable boxes supporting the same, vertically-disposed links pivotally connected at one end to said boxes, treadle-arms pivoted at one end in the frame of the machine and pivotally connected at the other ends of said links, counterpoising weighted lever-arms

adapted to impinge upon the treadle-arms below the pivotal connection of said arms with said links to normally raise said arms and links, and counterpoising weighted lever-arms pivotally connected with said boxes and normally adapted to directly elevate the same and said cylinder, substantially as and for the purposes described.

4. In a machine of the character described, a working roll or cylinder, vertically-movable boxes supporting the same, an arm pivoted in the frame of the machine, one end of said arm being secured to the boxes, a pulley adapted to rotate at the other end of said arm, a main driving-pulley, a pulley secured to and adapted to directly drive the working roll or cylinder, and a belt passing around the main driving-pulley, the driving-pulley of the roll or cylinder and the pulley on the pivoted arm, all arranged so that the driving-pulley of the roll or cylinder may be driven directly from the main driving-pulley and the roll or cylinder may be vertically mov-

able with respect to said driving-pulley, substantially as and for the purposes described. 25

5. In a machine of the character described, a fixed driving-shaft, a pulley actuated thereby, a fleshing or analogous cylinder having a range of movement vertically, an arm pivoted in the frame of the machine and carrying at one end a pulley adapted to drive the cylinder, a pulley supported on the other end of said arm, an idle-pulley supported intermediately between said two pulleys and a belt in engagement with said driving-pulley located under the two pulleys carried by said arm and over said idle-pulley, substantially as and for the purposes described. 30 35

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses. 40

WILLIAM EVANS.

Witnesses:

J. WALTER DOUGLASS,
THOMAS M. SMITH.