(No Model.) 3 Sheets—Sheet 1.

G. W. BAKER.

MACHINE FOR WORKING HIDES OR SKINS.

No. 512,088. Patented Jan. 2, 1894.

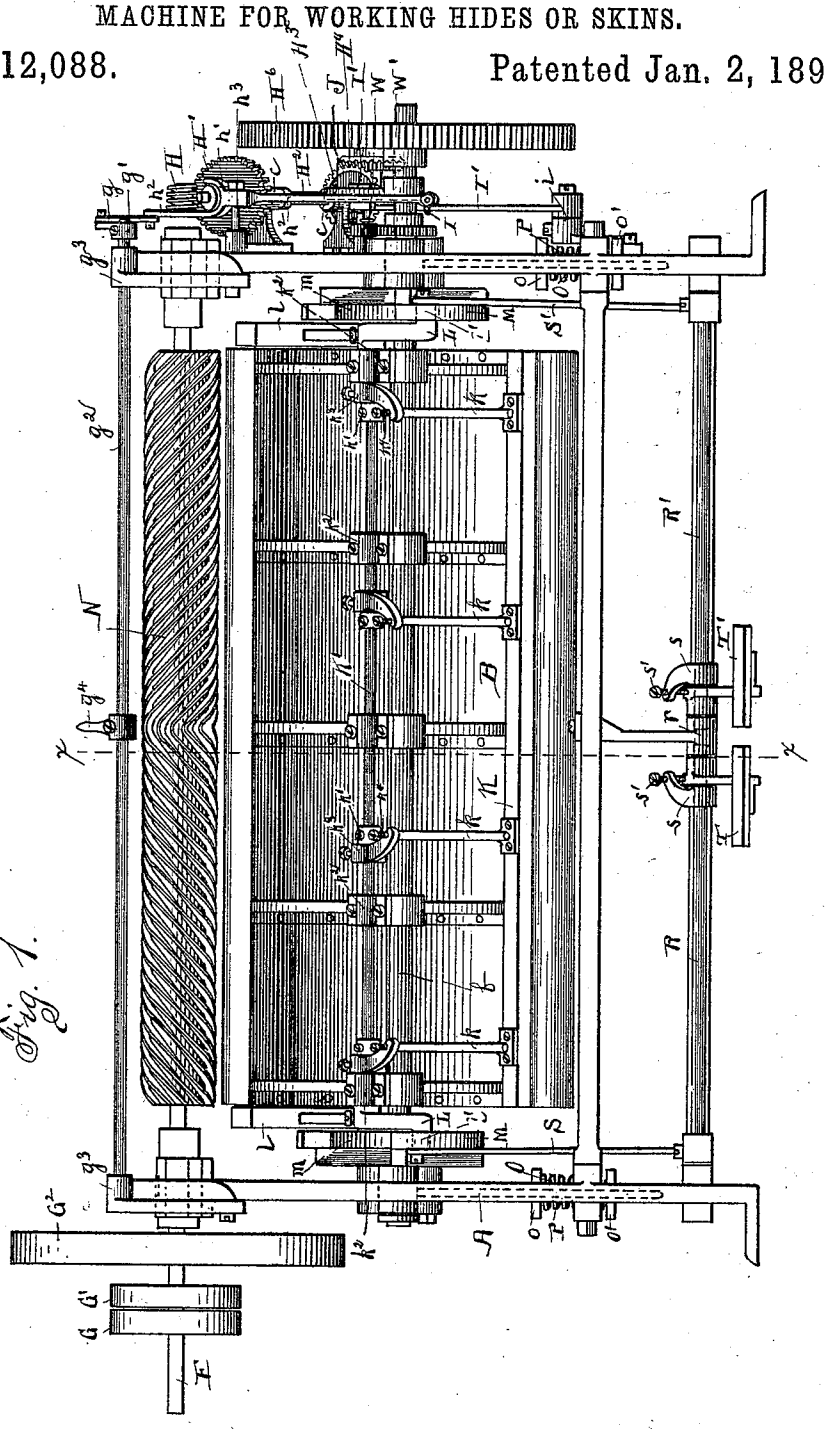

Fig. 1.

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Fig. 3.

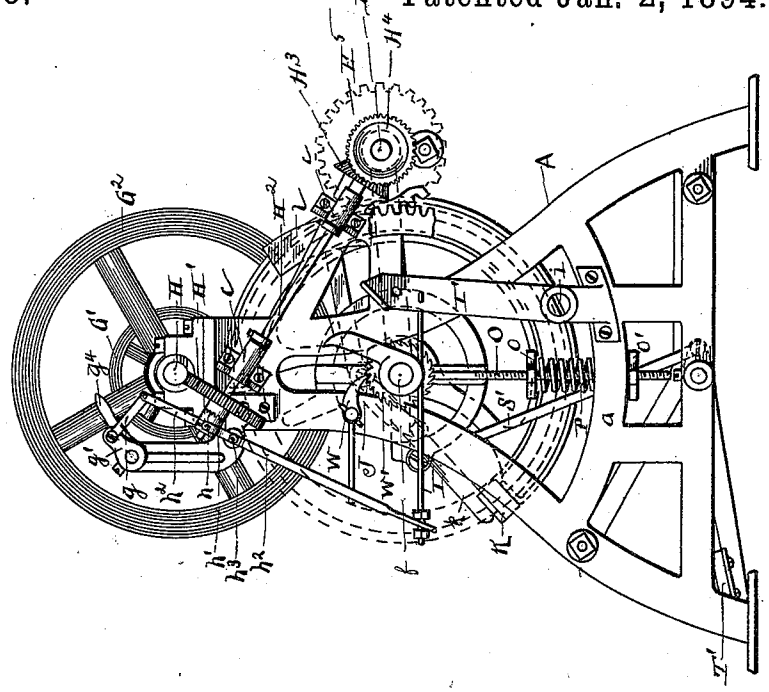

Fig. 4.

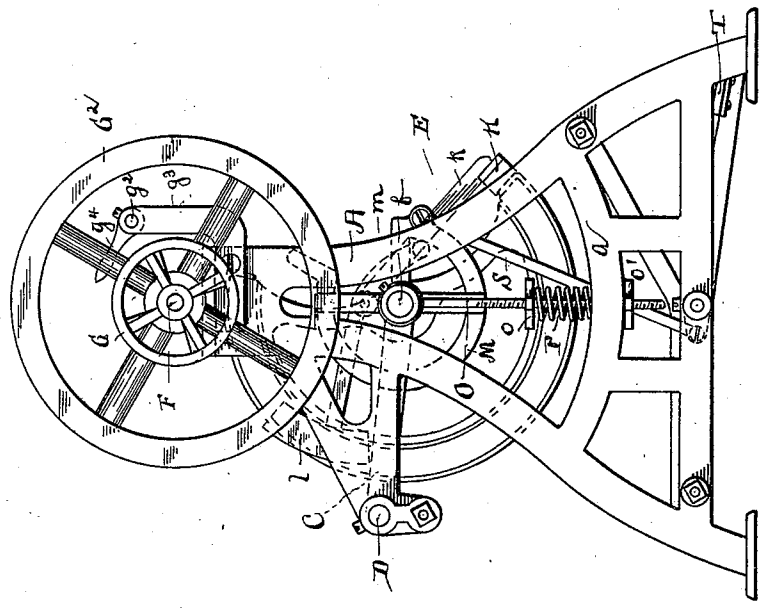

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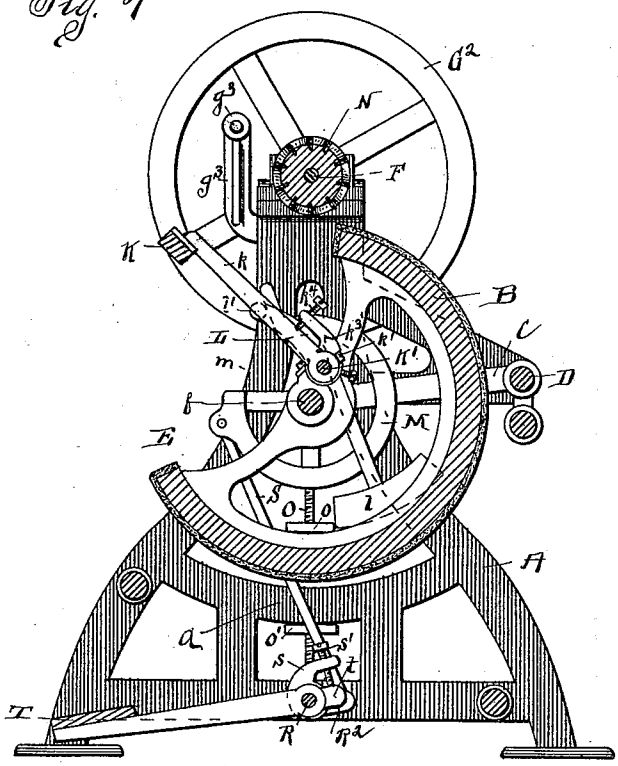
Fig. 4



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MACHINE FOR WORKING HIDES OR SKINS.

SPECIFICATION forming part of Letters Patent No. 512,088, dated January 2, 1894.

Application filed October 7, 1893. Serial No. 487,455. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BAKER, a citizen of the United States, and a resident of Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Machines for Working Hides or Skins; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a front elevation of the invention. Fig. 2 is an end view of the same. Fig. 3 is a similar view from the opposite end and Fig. 4 is a transverse vertical section on line *x x* Fig. 1.

This invention has relation to certain new and useful improvements in machines for working hides or skins, and it consists in the novel construction and combination of parts, all as hereinafter described and pointed out in the appended claims.

The invention, while particularly designed for "fleshing," is also designed for "working out" unhairing, and other treatment, and has for its object the provision of improved means for clamping the hide or skin to the revolving drum or cylinder, and for automatically operating the clamp at the proper time.

A further object consists in the provision of means whereby all parts of the hide or skin may be given equal treatment by the knives or scrapers. As is well known hides and skins are much thicker at certain portions than at others, and great difficulty has been experienced in the provision of practical means for effecting a uniform treatment of both the thicker and thinner portions at a single operation. This difficulty I largely obviate by the means hereinafter described. A further object consists in the provision of means for automatically stopping the drum or cylinder at the proper time.

Other minor features of improvement embraced in the invention will hereinafter appear.

Referring to the accompanying drawings illustrating the invention, the letter A, designates the supporting frame which should be of such design as to provide proper bearings and support for the parts now to be described.

B designates the drum or cylinder which is supported longitudinally between the ends of the frame by means of its central shaft *b* with which it is fast. Said shaft at its end portions has bearings in arms C, C, which are loosely sleeved or pivoted upon a longitudinal rod or stationary shaft D. The drum or cylinder has a longitudinal segment E removed therefrom to permit the proper insertion of the hide or skin to be operated upon.

F designates the main or driving shaft which is supported in boxes in the upper portion of the frame, parallel with and above the drum or cylinder. On one end portion of this shaft are fast-and-loose pulleys G, G′, and a balance wheel G^2, and on the other end portion is a worm H which is arranged to mesh with and drive a worm wheel H′, on the upper portion of an oblique shaft H^2 journaled in boxes *c*, *c*, and extending downward and rearward. On the lower portion of this shaft is a bevel gear wheel H^3, which meshes with and drives a corresponding wheel H^4 journaled loosely on the stationary rod or shaft D before referred to. Fast with the gear wheel H^4 is a pinion H^5 which gears into a large toothed wheel H^6 rigidly mounted on the end portion of the drum shaft, thus providing for the rotation of the drum.

The worm wheel H′ is loosely journaled on the shaft H^2, and is provided with a clutch, the movable section *h* of which has a sliding but fast connection with the said shaft and is engaged by the fork *h′* of a clutch-lever h^2, pivoted to the end frame at h^3. The upper and shorter arm of this lever is connected by a link *g* with a crank-arm *g′* of a longitudinal rock-shaft g^2, journaled in arms g^3 of the frame, over the drum, and operated by a handle lever g^4, by means of which the clutch may be thrown into and out of gear to stop or start the drum. The lower and longer arm of the lever h^2 has an adjustable connection with a rearward extending rod or link I which at its rear portion is adjustably connected to an arm or lever I′ pivoted to the lower portion of the frame at *i*. Fast to the drum shaft, in-

side the large gear wheel H^6, is a cam arm J so situated that when the drum has made its proper revolution, said arm contacts with the arm or lever I', rocking the latter rearwardly on its pivot, and through the link I and lever h^2, throws the clutch-section h out of gear with the worm wheel, in this manner providing for the automatic stoppage of the drum.

K designates the clamp which holds the hide or skin to the drum during treatment, and which consists of a bar parallel with the forward edge of the cut-away portion of the drum against which it is arranged to clamp. Said bar is carried by arms k which at their inner ends are secured, usually by set screws k', to a longitudinal shaft K', parallel with the drum shaft, but eccentrically thereof, the bearings k^2 for said shaft being in the frames and heads of the drum. Secured on each end portion of said shaft K', outside of its bearings k^2, is a cam-arm L, the rear portion of which is weighted sufficiently heavy, as shown at l, to more than counterbalance the clamp-frame. On the forward end portion of each of said cam-arms is a cam-lug or roller l' which is adapted to engage or travel upon the inner face of a cam-ring M. One of these cam-rings is provided at each end, and is made rigid with the frame, or as shown, with the bearings of the drum-shaft, and in eccentric relation to the clamp-shaft K'. These cams do not form a complete circle, but are open at m.

In order to provide for the adjustment of the clamp-frame to render its action more or less positive, the shaft K' is provided with lugs k^3, provided each with an adjusting screw k^4 which engages the respective arms k which as above stated are usually sleeved upon the said shaft and secured by set screws k'.

On the driving shaft F, above the drum, is the fleshing or working roll N, shown as provided with the customary spiral arrangement of cutters or scrapers. The normal distance of the drum from this roll is regulated by the adjusting devices O, which consist of a vertical rod at each end engaging and supporting the bearings for the drum shaft, and extending downwardly through the bar a of the frame A. Said rods are provided with threads to receive the nuts o, o', one above and one below the bar a. Confined between the upper nut o and the said bar, and coiled around each of said rods, is a spring P, the tension of which is rendered adjustable by means of the said nuts, thus providing an adjustable and a yielding support for the drum.

Hides and skins, as is well known are much thicker along the back and central portions than at the flanks, and the hides being usually split longitudinally along the center before treating, each section so formed is thicker at one edge than at the other. Owing to this fact it has been a matter of considerable difficulty to provide means for uniformily treating all parts of the hide in machines of this character. The means which I employ to obviate this difficulty to a large extent will now be described.

Journaled in the base of the frame underneath the drum are two independent shafts R, R' placed end to end, and having a common bearing r at the center. Each of said shafts near its outer end is provided with a rearwardly projecting crank arm R^2, and connecting these crank-arms with the forward, projecting end portions of the respective arms C, C, are links or levers S, S'.

Each shaft R, R' is provided near its inner end with a treadle T or T', said treadles being shown as sleeved on the said shafts and engaged therewith by means of lugs s having set screws s' which are arranged to bear upon rearward projections t of the treadles, whereby when said treadles are depressed, their respective shafts are rocked.

The two shafts R, R' being independent of each other, and being each connected with its own end of the drum in the manner described, it follows that when either treadle is operated, the corresponding end portion of the drum will be raised into closer relation to the working roll, and that when both treadles are depressed the drum will be raised uniformily to the roll. By this arrangement it will be apparent that at whichever side the thinner portion of the hide or skin may come, that side may be raised so that it shall be uniformly treated.

The operation is as follows: The hides or skins are worked for length, and are inserted underneath the clamp bar K, about one-half the length lying inside the drum in the cut-away portion thereof. The drum is thrown into gear, and by its revolution brings the hide or skin to the action of the roll, the treadles in the meantime being properly operated. As the drum commences to revolve the cam-arms L engage with the cam-rings M rocking the shaft K' and forcing the bar K down into clamping contact until the required revolution has been completed, when the open portions m of the rings releases the arms, and their weighted rear portions act to throw the clamp upwardly and release the hide or skin. At the same time the cam arm J acts upon the arm or lever I' and the clutch lever h^2 to throw the drum out of gear, and stop it while the hide or skin is reversed end for end, or a fresh one is inserted, when it is again thrown into gear by means of the handle lever g^4 and the operation repeated. A gravity pawl W which engages with a toothed wheel W' on the drum shaft prevents the drum from backward movement, and thereby prevents injury to the machine should the gear give way.

The form of clamp above described is a superior one for the purpose in that it is automatic in its action, which is secure, simple and positive; in that no backward movement of the drum is required after each operation

to bring it back to the starting point, and in that it requires the use of no springs or geared weights.

The treadles being adjustable, by means of the arrangement described, they can be set so that the foot pieces will come in contact with the floor, or with suitable stops therein, so that the operator cannot raise the drum sufficiently to damage the machine or the hide or skin being treated.

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

1. In a hide working machine, the combination with the drum or cylinder having a cut-away portion, of the clamp frame acting in said cut-away portion, a rock-shaft carrying said frame, weighted cam arms on said shaft, and cam rings engaged by said arms, substantially as specified.

2. In a hide working machine, the combination of the drum or cylinder having a cut-away portion, the clamp frame working in said cut-away portion, the shaft journaled in the drum frame eccentrically of the drum shaft, and carrying said frame, the weighted cam arms on said shaft, and stationary cam-rings engaged by said arms and having open portions arranged to release said arms at a given time, substantially as specified.

3. In a hide working machine, the combination of the drum having a segment removed therefrom, its driving mechanism, the clamp frame within said drum, the rock-shaft carrying said clamp frame and journaled in the drum frame, the arms on the end portions of said shaft, the cam-rings engaged by said arms, and having open portions to release said arms at a given time, and mechanism for automatically throwing the driving mechanism of the drum out of gear at or about the time said arms are released by said rings, substantially as specified.

4. In a hide working machine, the combination of the drum A, the clamp bar K, the shaft K′ journaled in the drum frame, the arms *k* secured on said shaft and to the bar K, the arms L on said shaft and having the weights *l* and the cam-lugs or rollers *l′*, and the cam-rings M arranged to be engaged by said arms, said cams being open at *m*, substantially as specified.

5. In a hide working machine, the combination with the main driving shaft, the drum, the drum-shaft, and intermediate driving gear between the main shaft and the drum shaft, of the clutch for throwing the said intermediate gear into and out of driving relation, the clutch lever, the pivoted arm or lever having a connection with said clutch lever and means on said drum shaft for operating said arm or lever to actuate the clutch mechanism and throw the drum shaft out of gear at a given time, substantially as specified.

6. In a hide working machine, the combination of the drum shaft, the driving shaft, the intermediate gear between said drum and driving shafts, the clutch for throwing the intermediate gear into and out of driving relation, the clutch lever, the rock-shaft and lever having a connection with one arm of said clutch lever, the pivoted arm or lever having a connection with the other arm of said clutch lever, and a cam arm or projection on the drum shaft arranged to contact with said pivoted arm or lever at a given time and actuate the said clutch to throw the drum shaft out of gear, substantially as specified.

7. In a hide working machine, the combination with a drum or cylinder, its shaft, and vertically movable and independent bearings for the end portions of said shafts, of a pair of independent treadles connected each with one of said bearings, whereby the end portions of said cylinder may be independently or conjointly raised by the operation of one or both of said treadles, substantially as specified.

8. In a hide working machine, the combination with a drum or cylinder, its shaft, the independently pivoted or swinging arms C, C, in which said shaft has its bearings, the yielding and adjustable supports for said arms, the independent treadle rock-shafts and treadles, and a connection between each of said shafts and the respective arm C, whereby the operation of either treadle will raise the corresponding end portion of said cylinder, substantially as specified.

9. In a hide working machine, the combination with the working roll, the drum, its shaft, the independent, pivoted or swinging arms in which said shaft has its bearings, the rods engaging said arms and extending down through arms of the frame, the nuts threaded on said rods, the springs, the independent treadle shafts and treadles, and connections between said treadle shafts and the respective pivoted or swinging arms, substantially as specified.

10. The combination with a treadle shaft, of a treadle-lever loosely sleeved thereon, a lug secured on said shaft adjacent to the treadle, and an adjusting screw carried by said lug and adapted to engage the treadle, substantially as specified.

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

GEORGE W. BAKER.

Witnesses:
PHILIP C. MASI,
GEO. H. PARMELEE.