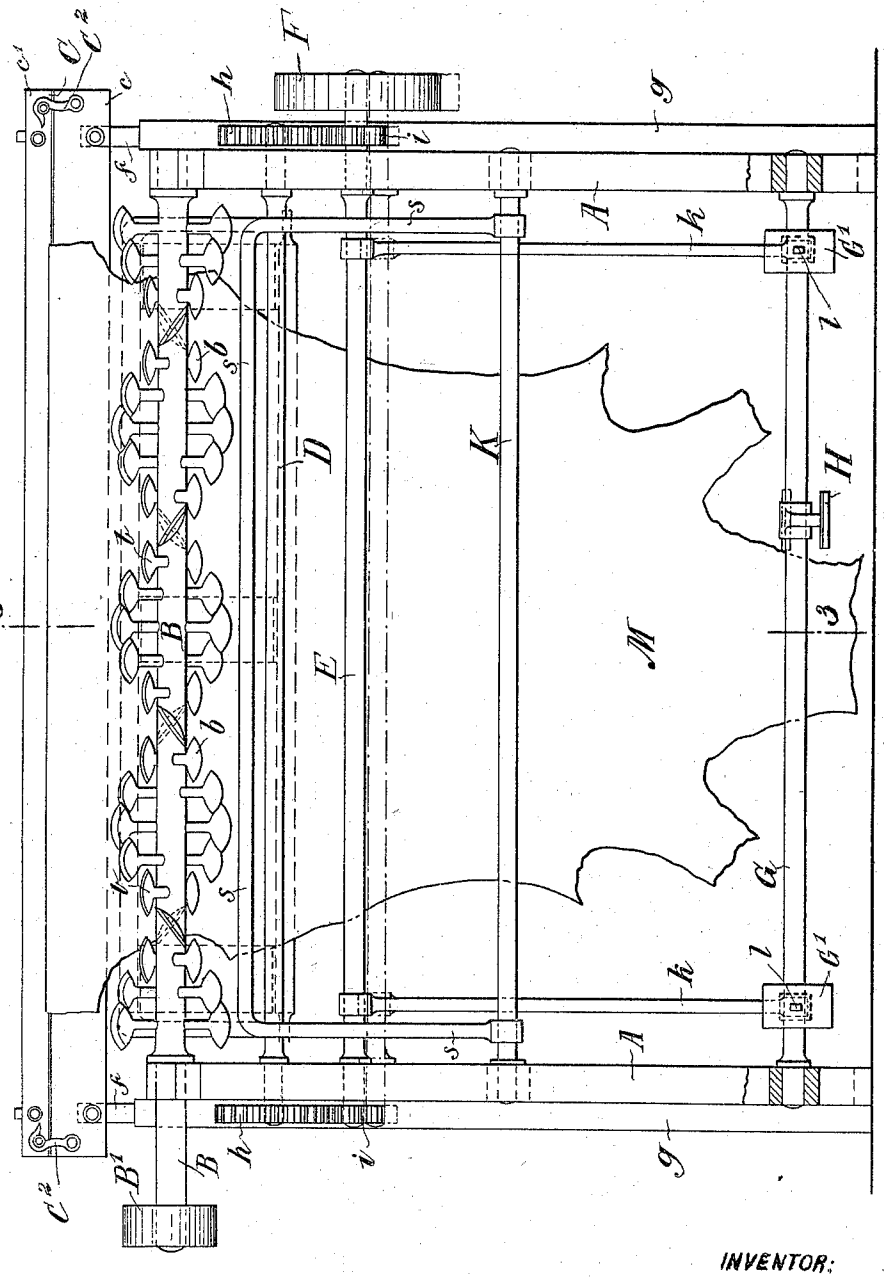
(No Model.) 2 Sheets—Sheet 1.

R. STEYER.

LEATHER WORKING MACHINE.

No. 552,791. Patented Jan. 7, 1896.

Fig. 1.



WITNESSES.

E. Sedgwick

D. D. Owens.

INVENTOR:

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ATTORNEYS

(No Model.) 2 Sheets—Sheet 2.

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LEATHER WORKING MACHINE.

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Fig. 3.

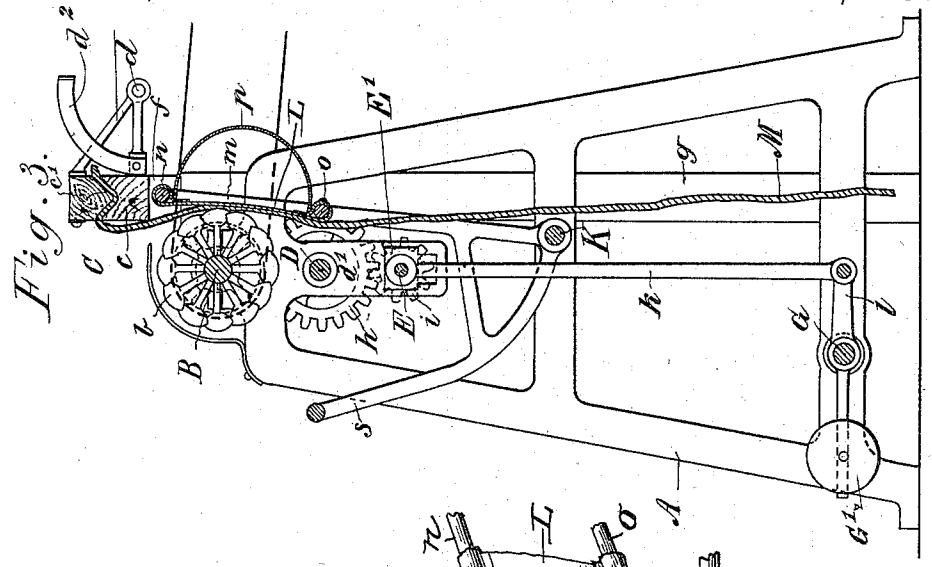


Fig. 4.

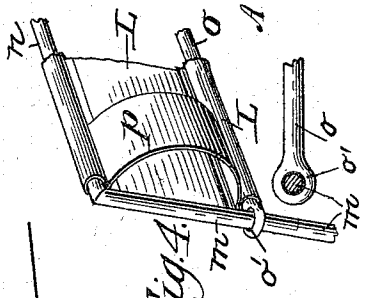
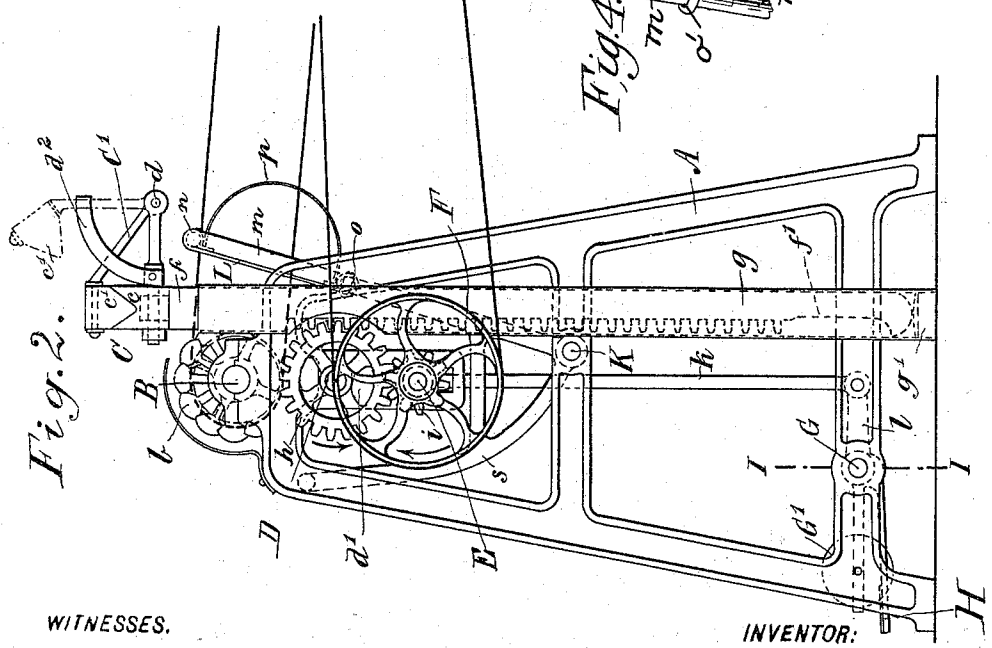


Fig. 2.



WITNESSES.

C. Sedgwick

INVENTOR:

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BY

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UNITED STATES PATENT OFFICE.

ROBERT STEYER, OF DOHNA, GERMANY, ASSIGNOR TO E. MORITZ & CO., OF SAME PLACE.

LEATHER-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 552,791, dated January 7, 1896.

Application filed June 28, 1895. Serial No. 554,326. (No model.)

To all whom it may concern:

Be it known that I, ROBERT STEYER, a subject of the King of Saxony, residing at Dohna, near Dresden, in the Kingdom of Saxony, German Empire, have invented new and useful Improvements in Machines for Treating Skins for Tanning Purposes, of which the following is a specification.

The object of this invention is to provide a machine for stretching, finishing, and dressing leather, which will do this work as effectively as by hand and which will be more expeditious in its operation.

To this end my invention consists essentially in a frame provided with means for carrying and for regularly moving the hide, and having a revoluble shaft thereon provided with a series of stretching or finishing tools, which are arranged to yieldingly engage the hide and to finish and stretch the same by the revolution of the shaft.

Still further, my invention consists in various details of construction and combination and arrangement of parts, as will be fully described hereinafter, and finally embodied in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 represents a front elevation of a machine constructed after the manner of my invention, showing a hide applied thereto and parts in section on the line I I of Fig. 2. Fig. 2 is an end elevation of the machine, and Fig. 3 is a sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is a detail view of a hereinafter described part.

In carrying out my invention I provide a frame A, having at its upper portion bearings in which the shaft B is revolubly mounted. This shaft B has one end projected beyond the bearing and provided with a drive-pulley B′, by which it is given rotary movement. Projecting radially from the shaft B and disposed in spiral lines around the same are the beating or stretching tools *b*, which comprise straight shanks having oval-shaped enlargements at their ends.

Affixed to the frame A and extending vertically therewith are the tubular guides *g*, which are two in number and which are arranged one at each end of the frame. Movable vertically in the guides *g* are the respective rack-bars *f*, the same being one for each of the guides. These rack-bars are adapted to mesh with the spur-gears *h*, affixed to the shaft D, the same being journaled in downwardly-extending brackets or hangers *d′* affixed to each end of the frame A. The gears *h* mesh with the rack *f* through openings formed in the guides *g*, as best shown in Fig. 2.

The lower extremities of the hangers or brackets *d′* are each formed with a vertically-elongated slot or guideway, in which the boxes E′ of the shaft E are slidably arranged. The shaft E has fixed thereto, just outside of the bearings E′, the pinion-gears *i*, which are adapted, when the shaft E is moved upwardly, to engage with the respective spur-gears *h*. One end of the shaft E is extended beyond the corresponding pinion *i* and provided with a pulley *f*, over which a drive-belt operates, as best shown in Fig. 2.

To each outer portion of the shaft E are connected the rods *k*, which are two in number and which have their lower ends pivotally connected to the respective levers *l*, and these levers are each fulcrumed on the transverse shaft G and have their free ends provided with weights G′. The shaft G is also provided with a treadle H, which is secured at approximately its middle, and it is provided to enable the attendant of the machine to move the shaft E and its pinions *i* upwardly, so that the latter will engage with the respective spur-gears *h*. The levers *l* and their weights G′ are provided to counterbalance the tendency which the shaft E and its connected parts have to drop, and by means of these levers and their weights the said shaft E and its parts are prevented from dropping with a jar, which would injure the machine.

Rigidly secured to the upper extremities of the rack-bars *f* and extending transversely from one to the other is the section *c* of the hide-frame C, and this section *c* has its upper side formed with a V-shaped groove therein, which receives the correspondingly-formed lower side of the frame-section *c′*, and this frame-section *c′* is connected to the section *c* by means of two arms C′ which are respect-

ively pivoted to the arms d in turn projecting from the section c. The rods C′ are guided in their movements on the rods d by means of segmental guides d^2, which are fixed to the inner extremities of the rods d and curve upwardly and outwardly therefrom.

The section c is provided with hooks C^2, which are two in number, and which are arranged at each end of said section c, the said hooks being adapted to swing into engagement with the corresponding pins carried by the section c', and by these means the two sections are secured in close engagement. Figs. 1 and 3 illustrate the operation of the frame C with the hide, and in these figures the letter M indicates the hide, which has its upper edge secured between the sections c and c' and which is allowed to hang therefrom.

Rigidly mounted approximately midway the frame A and extending transversely therein is a shaft K, which has a U-shaped bar s, rockably mounted thereon, and the said bar has its horizontal portion extending parallel with the shaft K and normally located at the upper part of the frame. The shaft K has connected thereto the rods m, which are two in number, one for each vertical portion of the bar s, and which extend upwardly to a point directly below the section c of the frame C, and are provided at said upper ends with a cross-bar n, which is secured rigidly in place, and which has fixed thereto the sheet of leather L, which sheet is of a width equal to the distance between the rods m and has its lower edge fixed to a cross-rod o, the same having eyes o' respectively sliding on the rods m, and the rod o is given a tendency downward by means of the bow-shaped springs p, the same being two in number and arranged one at each of the rods n. It will be seen that upon rocking the bar s the rod m will be moved in unison therewith, which will cause the sheet of leather L to move toward and from the shaft B, and by these means the leather M may be pressed into yielding contact with the beating or stretching tools of the said shaft B, as best shown by Fig. 3.

In the operation of my invention the hide M has its upper edge secured between the sections c and c' of the frame C, and the rack-bars f are moved downwardly in their respective guides g, as shown in Figs. 2 and 3 of the drawings. Assuming now that the shafts D and E are driven in the direction of the arrows in Fig. 2 and that it is desired to start the operation of the machine, the attendant should press the treadle H downward, which will raise the shaft E and cause the pinions i of the said shaft to mesh with the respective spur-gears h, whereupon the rack-bars f will be moved upwardly and the hide M fed to the shaft B and its tools b. Immediately after starting the operation of the rack-bars f the bar or shaft s should be moved outwardly, which will result in a forward movement of the sheet of leather L and in a pressing of the hide M into engagement with the tools b of the shaft B. When this has been accomplished the action of the tools b on the hide M, the same being in a downward direction, will cause the hide to be stretched and finished, as will be understood; and it will be observed that owing to the spiral arrangement of the tools b on the shaft B the hide will be treated with both a downward and lateral influence, thereby more effectively stretching and finishing it. When the rack-bars f have been moved upwardly as far as possible they may be permitted to drop or be returned and the hide treated for a second time, if this is necessary. The lower ends of the guides g are provided with buffers or cushions g', which receive the impact attending the downward movement of the rack-bars f. To prevent excessive upward movement of the rack-bars f the lower ends of said bars are provided with smooth portions f', (shown in Fig. 2,) and these portions being without teeth make it impossible for the spur-gears h to positively engage with the respective rack-bars beyond the point where it is toothed.

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

1. In a machine of the character described, the combination of a supporting frame, a hide-carrying frame, racks connected thereto, tubular guides in which the racks slide, a rotary shaft, stretching tools secured thereto, a second rotary shaft, spur gears fixed to said shaft and respectively meshing with the rack bars, a third rotary shaft capable of meshing with the spur gears on the second rotary shaft, a treadle for moving said third rotary shaft, a stationary shaft fixed in the frame, arms rockably mounted thereon, and a flexible backing sheet carried by said arms and located opposite the shaft having the stretching tools, substantially as described.

2. In a machine for stretching hides, the combination with a supporting frame, of mounted beaters, a hide carrying frame, gearing connected with the hide-carrying frame and the beaters, a vertically movable driven shaft, a gear on said shaft, and means for moving the shaft into engagement with the gearing and beaters of the hide-carrying frame, substantially as described.

3. In a machine for stretching hides, the combination with a supporting frame, of operated beaters, and a driven hide carrying frame, comprising a beam, arms projecting outwardly from the beam, second arms respectively pivoted to the first arms, a curved guideway carried by each first arm, and a second beam fixed to the pivoted arms and capable of being clamped against the first beam, substantially as described.

4. In a machine for stretching hides, the combination of a supporting frame, operated beaters, a driven hide-carrying frame, piv-

oted arms, a rod sliding on said arms, a spring for actuating said rod, and a backing connected to the rod, substantially as described.

5. In a machine for stretching hides, the combination with a supporting frame, of a hide-carrying frame movable vertically thereon, operated beaters, pivoted arms rigidly connected and arranged one on each side of the beaters, and a yielding backing carried by one arm, substantially as described.

6. In a machine for stretching hides, the combination with a frame, of an operated beater, a hide carrying-frame comprising a rack bar movable past the beater, and a tubular guide in which the rack bar moves, the said guide having an opening therein and driven gearing meshing with the rack through the opening of the guide, substantially as described.

7. In a machine for stretching hides, the combination with a frame, of a beater, a hide-carrying frame movable transversely past the beater, a yieldingly mounted backing capable of pressing the hide against the beater as the hide is moved by the hide-carrying frame, and means for transmitting operating movement to the beater and hide-carrying frame, substantially as described.

8. In a machine for stretching hides, the combination with a frame, of a beater, a hide-carrying frame movable transversely past the beater, two arms rigidly connected and rocking on a common axis, and a backing carried by one arm and capable of pressing the hide to the beater as the former is fed by the hide-carrying frame, the remaining arm being adapted to furnish means for applying operative power to the backing, substantially as described.

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

ROBERT STEYER.

Witnesses:

EDUARD MORITZ,

ANTHONY MORITZ.