(No Model.)

M. GARNIER.

LEATHER DRESSING MACHINE.

No. 306,737. Patented Oct. 21, 1884.

Fig. 1.

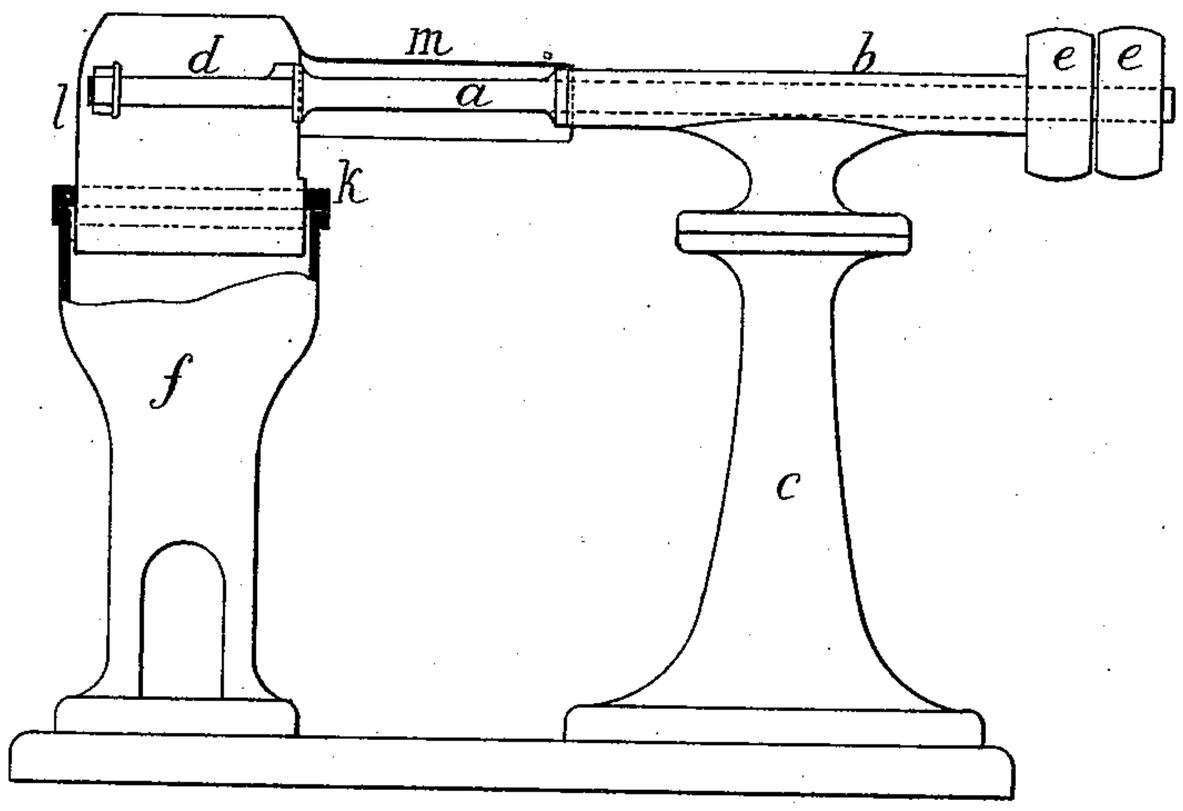


Fig. 2.

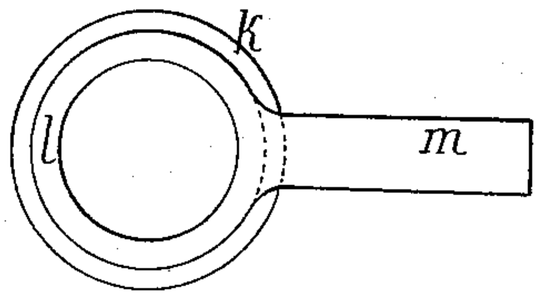


Fig. 3.

Fig. 4.

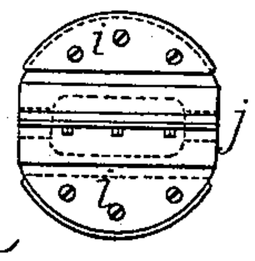


Fig. 5.

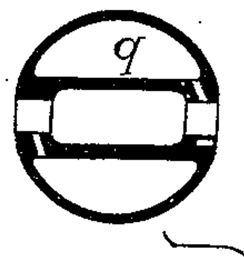


Fig. 6.

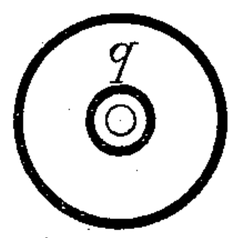


Fig. 7.

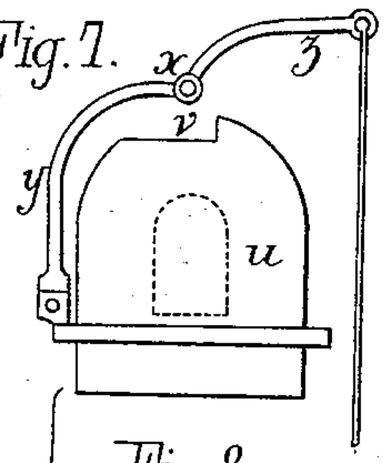


Fig. 9.

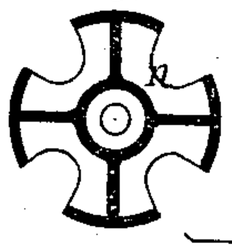


Fig. 10.

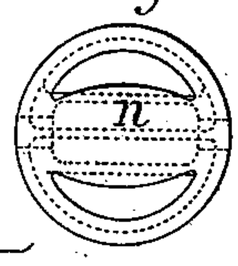
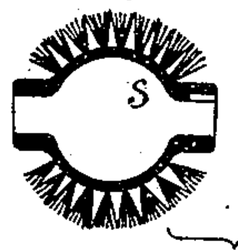


Fig. 11.



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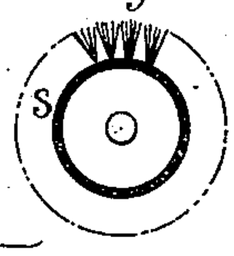
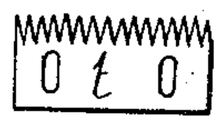


Fig. 13.



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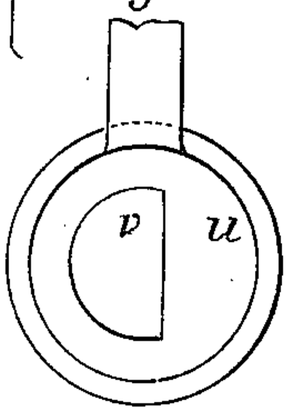


Fig. 14.

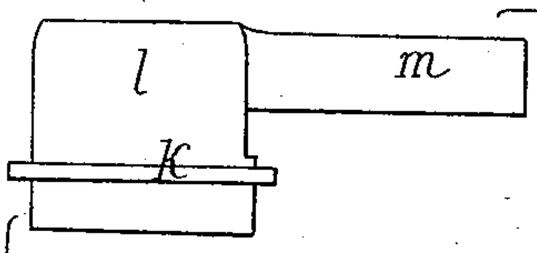


Fig. 16.

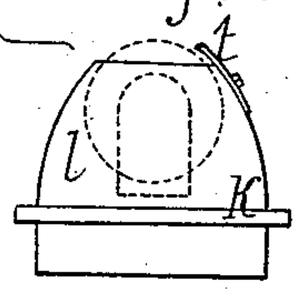
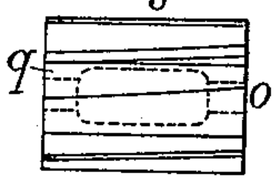


Fig. 17.



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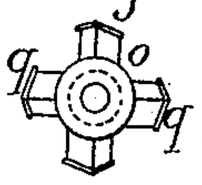


Fig. 15.

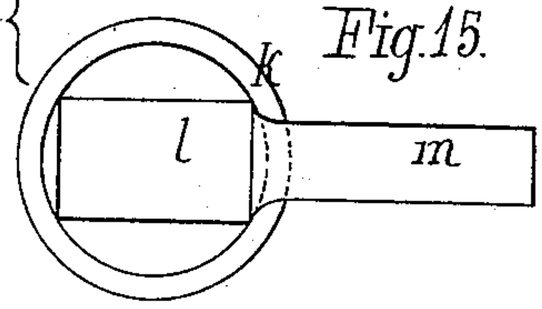


Fig. 19.

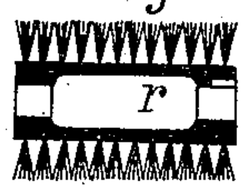


Fig. 20.

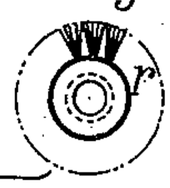


Fig. 21.

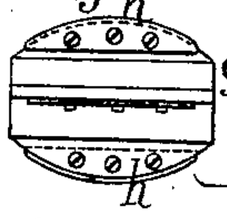


Fig. 22.

Fig. 23.

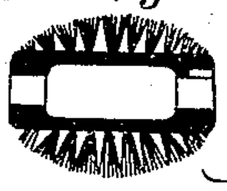
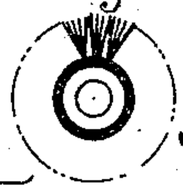


Fig. 24.



Witnesses:
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Charles E. Searle.

Inventor:
Marie Garnier
by her attorney
Thomas D. Watson.

UNITED STATES PATENT OFFICE.

MARIE GARNIER, OF PARIS, FRANCE.

LEATHER-DRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 306,737, dated October 21, 1884.

Application filed February 16, 1884. (No model.) Patented in France September 13, 1883, No. 157,530; in Belgium October 31, 1883, No. 63,056; in England November 2, 1883, No. 5,217; in Austria November 6, 1883, and in Germany November 17, 1883.

To all whom it may concern:

Be it known that I, MARIE GARNIER, of Paris, France, have invented certain new and useful Improvements in Leather-Dressing Machines, of which the following is a specification.

The apparatus consists, mainly, of a suitable frame carrying an axis upon which may be fastened the various tools which serve in the treatment of leather. Provisions are made to prevent overheating by excessive friction. Certain portions of the invention refer to the construction of the tools used in the machine.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a side elevation of the machine, showing certain portions in section. The remaining twenty-three figures show certain portions of the stationary parts and the tools to be used in the machine, and will be described further on.

The apparatus consists of a cast-iron frame, *c*, carrying a long sleeve, *b*, in which rotates a horizontal shaft, *a*, which latter is formed at one of its extremities with a slightly-conical mandrel, *d*, upon which the various tool-heads are fastened. The opposite end of the shaft *a* carries fixed and loose pulleys *e*, through which motion is imparted to the shaft. The pulleys may be cone-pulleys, so as to regulate the speed of the machine.

In order to constantly allow fresh air to come in contact with the leather at the place where the tools act upon it, and in order to prevent overheating, which might be caused at those places during certain operations, I use hollow tool-heads of suitable construction, to be fastened upon the mandrel *d*. These tool-heads are, according to the nature of the operations to be performed, of spherical, ovoid, or cylindrical shape. The ovoid shape will preferably be employed.

Upon the different tool-heads, hollowed out as described, are fixed the various tools—as knives, scrapers, combs, brushes, &c.—according to the various styles of dressing which it is desired to give to the leather, and those constitute the working part or tool-head of the machine. This working part is inclosed in a casing of metal or any other suitable material, the shape of which corresponds to that of the tool-head, and constitutes a sort of cap, open at the top and supported by a cylindrical portion or base, *f*, forming part of the frame, and carrying at its lower portion openings, to allow the passage of air for the purpose of cooling the leather. This cap or shield serves as a support for the hands of the operator, and protects them from coming in contact with the various tools employed.

According to the construction shown in the drawings, the apparatus is arranged horizontally; but it will be understood that it may be arranged at any angle desired, or even that it may be arranged vertically, according to the requirements of each particular case. In this latter case the head of the apparatus should of course come at about the height of the chest of the operator.

Having thus described the arrangement of the general improvements on my new machine, I will now describe more in detail the special constructions of tools which I employ for the different operations for which my apparatus is adapted.

The different operations of currying leather, which, when performed by hand, as is usually now the case, are extremely fatiguing for the workman, may be performed with ease by the use of my machine when provided with a tool-head having preferably an ovoid shape, the working-surface of the tool being in this case greater than if a tool of spherical shape were employed. In this case the tool-head *g*, of ovoid form, as represented in Figs. 21 and 22, is provided on its circumference with blades *h*, the function of which is to act upon the moist leather. These blades may, according to the work to be performed, be provided with cutting-edges or with rounded edges. They may even be made of other material than metal, if considered preferable.

For the purpose of finishing either side of the hides I use the brush represented in Figs. 23 and 24, the bristles of which may consist of wire or any other suitable substance. This brush is also preferably of ovoid form, in order to accelerate the operation.

In connection with tools of this shape I use a cap or shield, *l*, having a correspondingly ovoid or cylindrical shape. (Shown in detail in Figs. 14, 15, and 16.) This shield is formed with a circular base, *k*, which rests upon the above-mentioned base or support *f*. The shield *l* carries, besides, an extension, *m*, in the shape of a reversed trough, which covers a portion of the shaft of the machine, in order to avoid accidents and to permit the operator to assume any convenient position on one side or the other of the tools in operation.

As regards the operations of fleshing and currying, I am aware that attempts have been made to execute this class of work by means of machinery; but all the plans heretofore proposed which have come under my observation are defective and unsatisfactory, both as regards the quantity and the quality of the work produced. I employ for these operations a spherical tool-head, *j*, (represented in Figs. 3 and 4,) carrying plates *i*, of circular or helical shape, upon which the operator in treating a hide has to exert only a medium pressure with his arms, so as to enable him to execute more work with less fatigue. Besides, the results obtained are more satisfactory than those obtained even by a good workman operating by hand on an ordinary beam. The distance between the arms of the tool-head *j*, and consequently between the blades *i*, fixed thereon in the shape of a helix, allows the air to freely flow to the point of contact between the blades and the hide, whereby the heating during the operation is effectually avoided.

For simply paring the hides, which consists in slightly abrading them, I use the tool-head *l*, (shown in Figs. 9 and 10,) the arms of which are in the shape of spherical segments covered with emery, with interstices between each other, so as to allow access of air, and to prevent heating, which would injure the quality of the work produced. Whenever operating with a tool-head of this shape, I employ the cap of spherical form shown in Figs. 1 and 2 of the drawings, this protecting shield or cap being constructed in substantially the same manner as the ovoid or cylindrical cap above described, and provided with a semi-spherical head, *l*, a circular base, *k*, and a semi-cylindrical projecting shield, *m*.

The two operations of currying and slicking, the first of which is used in the manufacture of leather in general, while the second is more particularly employed in the preparation of skins for the manufacture of gloves, are both executed in the same manner upon my apparatus. For this purpose I use the tool-head *o*, of cylinder form, as shown in Figs. 17 and 18. I have succeeded in carrying out this very difficult work in a satisfactory manner by using knives *g*, inclined in the direction of the circular movement, or, in other words, arranged helically, and so adjusted as not to exert any pinching force upon the skin or hide, which latter should always be drawn in the direction opposite to that of the movement of the machine.

For piëcage I can use tool-heads, of either cylindrical or spherical shape, covered with cloth which is moistened by means of a sponge saturated with the ordinary preparation, and which dries gradually in consequence of the friction exerted on the hide.

For slicking I use a hollow polished spherical head, *q*, Figs. 5 and 6. This head is heated by introducing steam into its interior. For this purpose the shaft of the machine should be hollow for receiving the steam. The operator has only to place the hide under treatment upon this hot sphere and to draw it toward him in the direction opposite to the motion of the sphere.

For some operations I prefer to use spherical or ovoid tools made of polished glass. These latter spheres may be used hot or cold in a manner similar to that described with regard to the slicking operation.

For certain other operations I use cylindrical brushes *r*, as shown in Figs. 19 and 20, or spherical brushes *s*, as shown in Figs. 11 and 12. In cases where cylindrical tools are employed I use the cap or shield shown in Figs. 14, 15, and 16, at the upper part of which I leave a more or less large opening, according to the style of work to be done, and serving to regulate the tension of the hide or leather upon the knives or other tools fixed upon the tool-heads.

The shearing of the hides is effected upon my apparatus by means of the same knives which I use for fleshing, only in this case I adapt upon one side of the cap or shield a comb, *t*, (shown in Figs. 13 and 16,) in such manner that the teeth project in the direction opposite to the motion of the knife. In this manner the hairs are caught in the comb, which serves to stop their passage, and the knives cut them at the desired height.

In order to facilitate the work upon the borders of the hides, and particularly upon the legs or extremities, I use the previously-described tools, it being understood that all the operations to which the main parts are subjected must also be effected upon the borders and legs; but in this case I form in the upper part of the cap or shield *u* a small opening, *v*, as shown in Figs. 7 and 8, and I arrange above this opening a piece of rubber or leather, or simply a roller, *x*, said piece or roller being supported on a hinged lever, *y*, the whole being so arranged that by means of a head, *z*, operated by a treadle or in any other suitable manner, the desired pressure may be brought upon the hide. I also provide for this operation a movable table at the right of my apparatus, which serves as support for the hand of the operator, whereby the operation is considerably facilitated.

It will be understood that I do not limit myself strictly to the different forms and special constructions of the tools and tool-heads above described, and that said forms and construc-

tions may be varied according to the requirements of the special work to be executed in various cases.

I claim as my invention—

1. In a leather-dressing machine, and in combination with a revolving tool and a cap, as *l*, a hollow standard or support, *f*, to afford a current of air and prevent overheating, as set forth.

2. The combination of the shaft *a*, having spindle *d*, the cap *l*, having an aperture through which a tool projects, a series of interchangeable tools, and a hollow support, as *f*, for said cap, to provide for a cooling-current of air, as set forth.

3. The combination, with the shaft *a*, hollow support *f*, and interchangeable tools, of the cap or shield *l*, having tool-opening, as shown, and having arm *m*, extending partly around the shaft *a*, as and for the purposes set forth.

4. In combination with the shaft *a* and interchangeable tools, the cap *u*, presser-piece *x*, and means, as *y z*, and treadle for depressing said presser-piece, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand, at Paris, France, this 23d day of January, 1884, in the presence of two subscribing witnesses.

MARIE GARNIER.

Witnesses:
EDWARD P. MACLEAN,
EUG. DUBOIS.