

No. 607,654.

Patented July 19, 1898.

G. DE KEUKELAERE.
MACHINE FOR DEPILATING SKINS.

(Application filed June 25, 1897.)

(No Model.)

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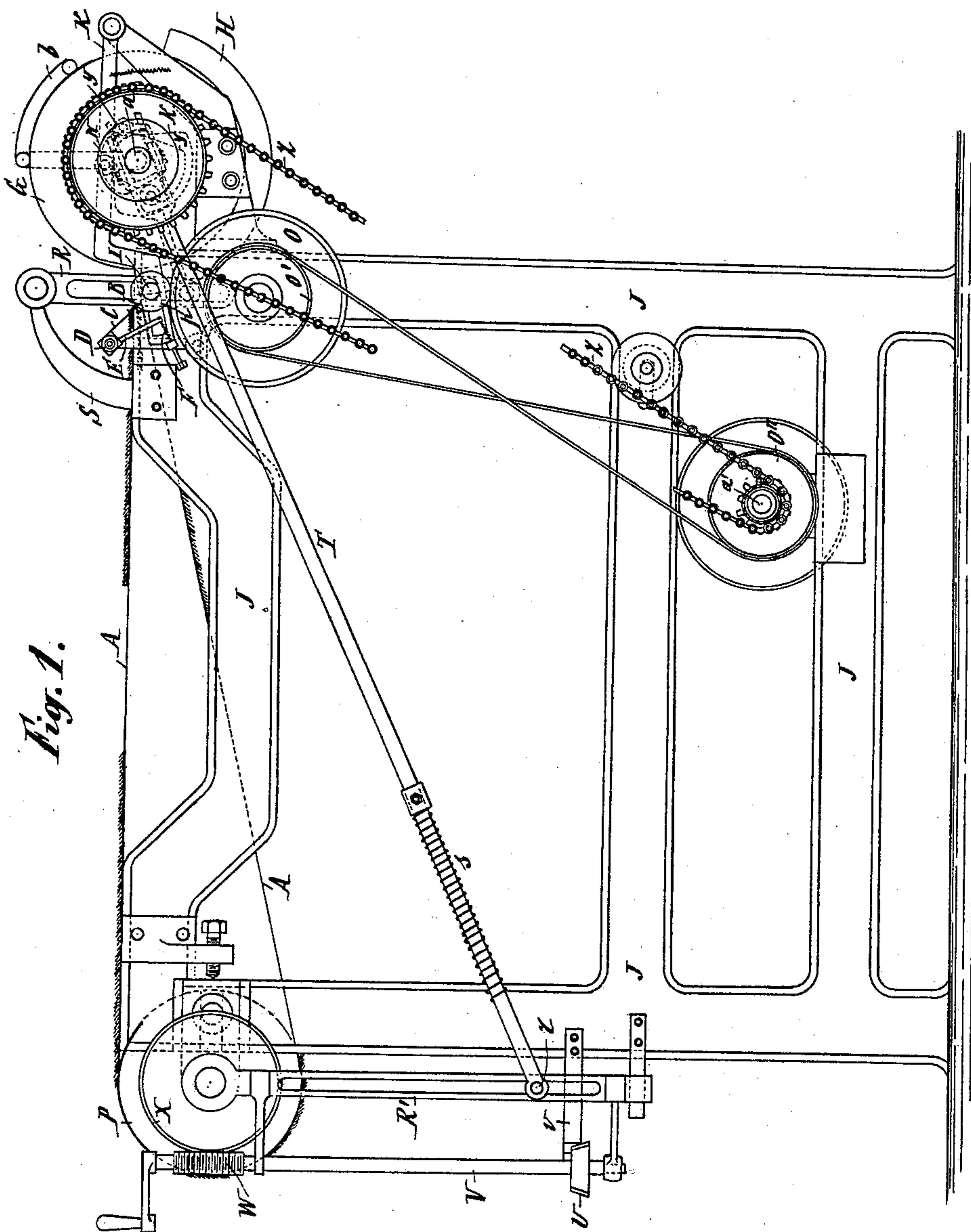


Fig. 1.

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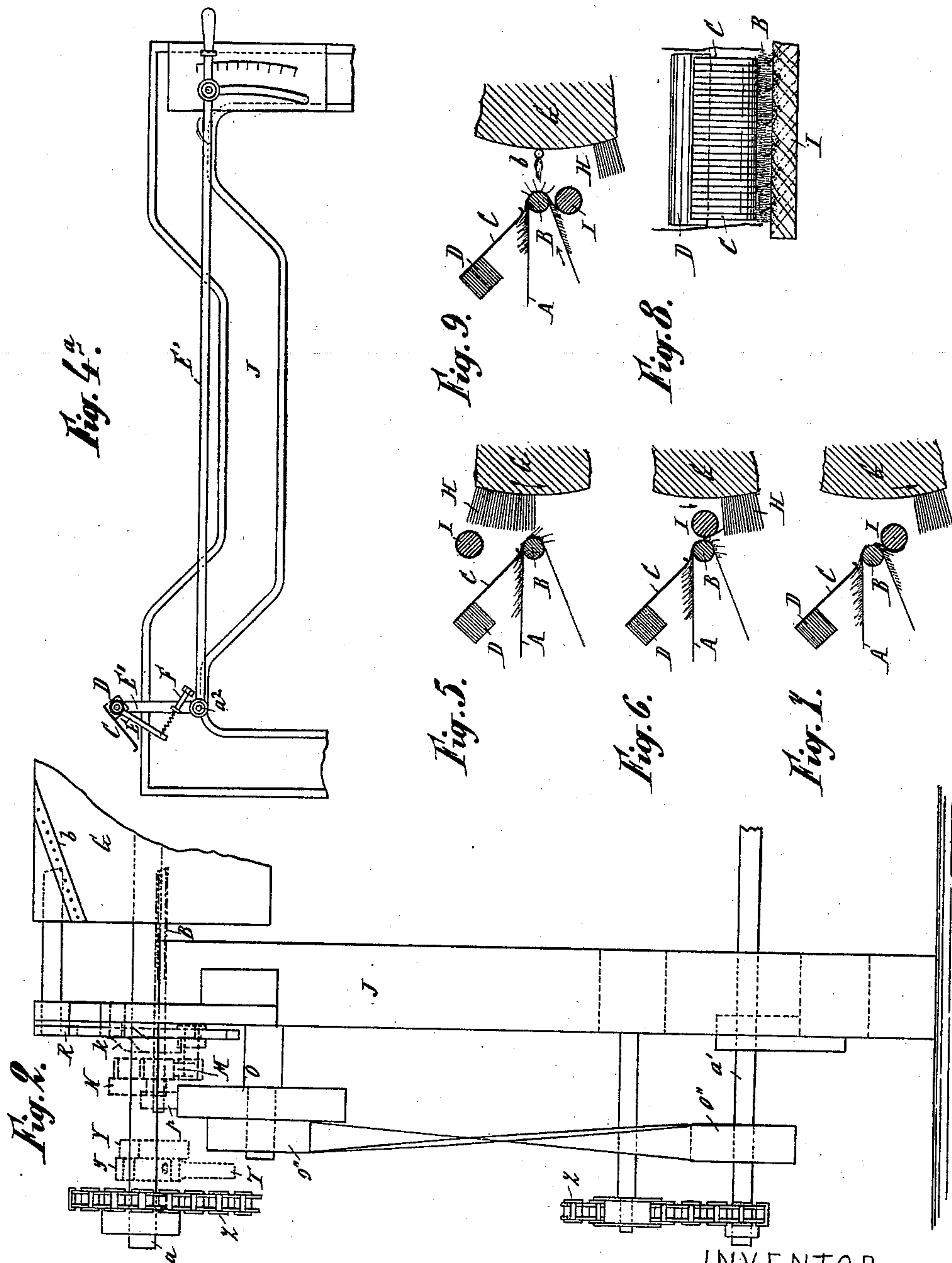
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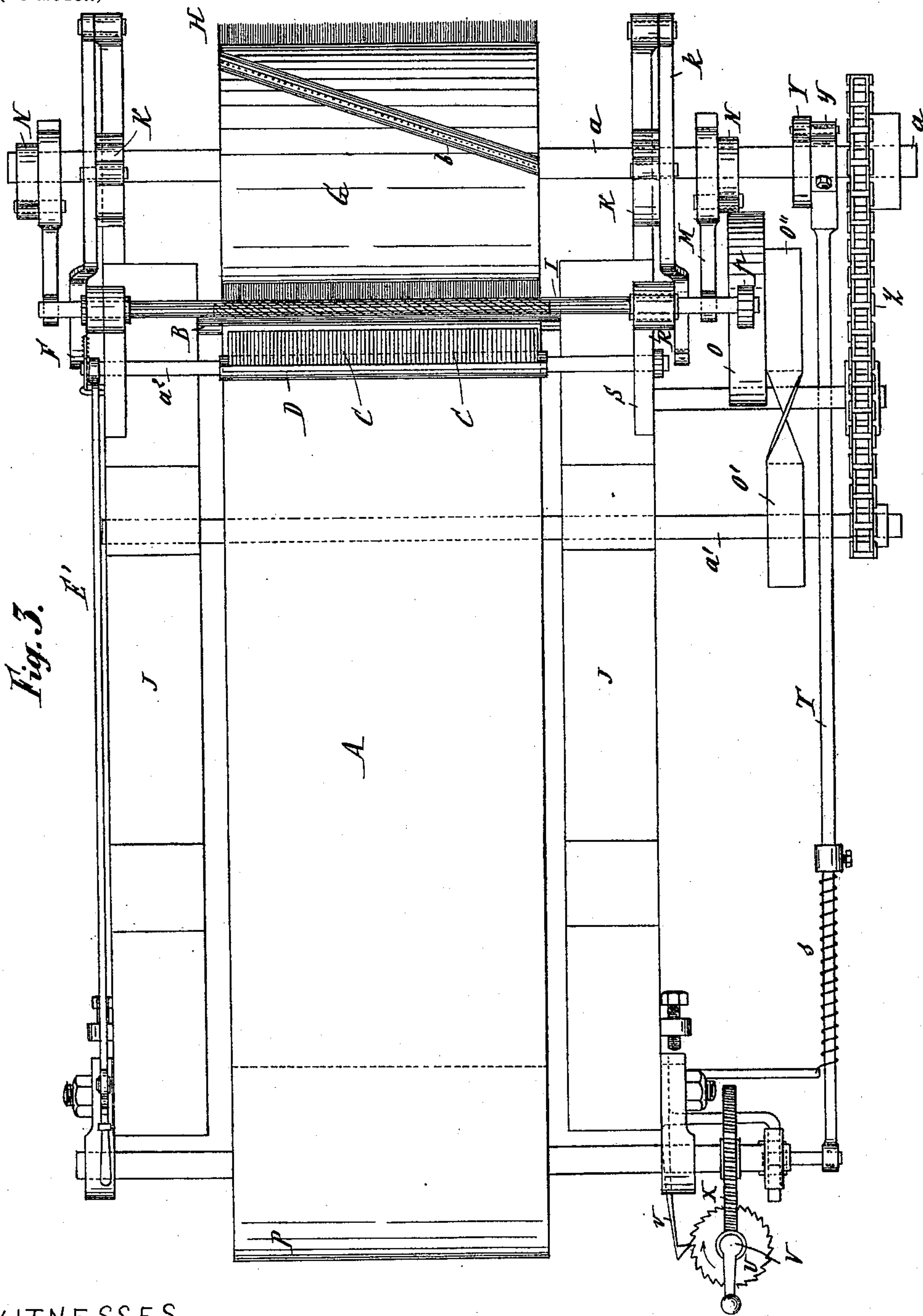
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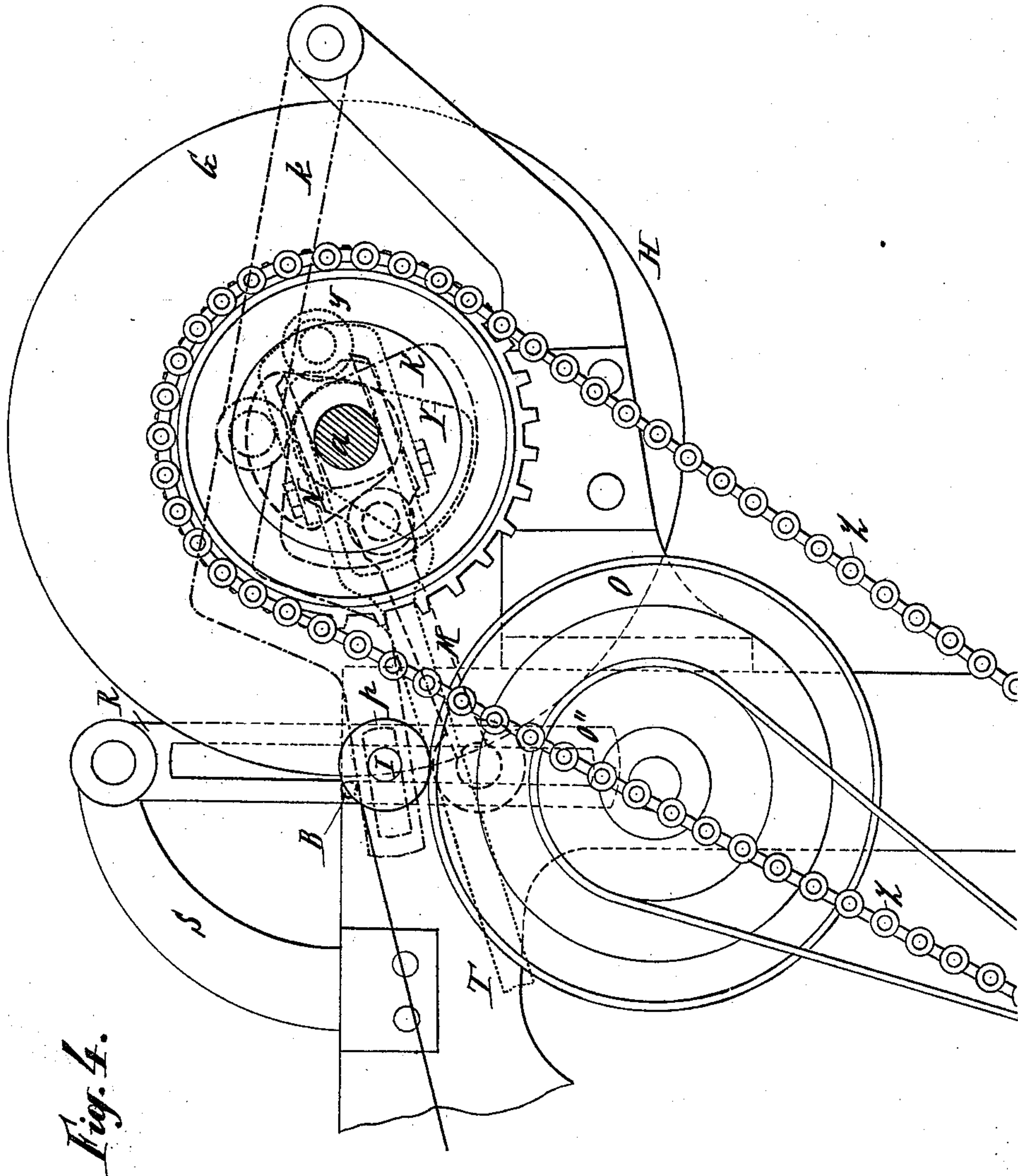


Fig. 4.

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UNITED STATES PATENT OFFICE.

GUSTAVE DE KEUKELAERE, OF ALOST, BELGIUM.

MACHINE FOR DEPILATING SKINS.

SPECIFICATION forming part of Letters Patent No. 607,654, dated July 19, 1898.

Application filed June 25, 1897. Serial No. 642,337. (No model.) Patented in Luxemburg May 15, 1896. No. 2,853.

To all whom it may concern:

Be it known that I, GUSTAVE DE KEUKELAERE, a subject of the King of Belgium, residing at Alost, in the Kingdom of Belgium, have invented certain new and useful Improvements in Depilating Skins, (patented in Luxemburg May 15, 1896, No. 2,853,) of which the following is a specification.

The machines used hitherto for stripping dyed or raw skins do not, as a rule, allow of the continuous treatment of unshaved skins. It is necessary to first prepare the same by means of shaving or smoothing machines; besides, the work obtained from such machines is not perfect. Most of them produce their effect by pulling out or cutting, and it will be easily understood that with this method of operation it is impossible to remove all of the hard hair or bristles close to the skin. The result thereof is that the skins treated in that manner are not as soft as desired.

The present invention relates to a machine in which skins, whether shaved or not, can be continuously depilated in a very perfect manner, said depilation being effected by burning the bristles or stiff hairs level with the skin.

In the accompanying drawings, which illustrate my invention, Figure 1 is a front elevation of the machine; Fig. 2, a rear elevation of one-half of the machine, and Fig. 3 a plan view thereof. Fig. 4 is a front elevation, on a large scale, of an important part of the machine. Fig. 4^a is a detailed view; and Figs. 5, 6, 7, 8, and 9 show in details how the machine operates upon unprepared hides or skins.

The machine comprises a frame J, upon which is mounted an endless apron A, preferably of some asbestos tissue, one side of which passes over a large cylinder P, mounted upon adjustable bearings, and the other side over a small cylinder B, the two cylinders being connected by any suitable means for moving them positively together. Facing the cylinder or roller B a large drum G is arranged, one-half of the circumference of which is provided with brushes H and the other part with Bunsen gas-burners b. (See Figs. 5 and 9.) The drum G is mounted upon an axle driven by means of an endless chain Z, to which motion is imparted by the driving-shaft a' of the machine.

Three cams K N Y are fixed upon one end of the shaft a' of the drum G, K and N being duplicated on the other end. The cam K (see Fig. 4) acts upon a lever k, which it presses upward and downward alternately, so as to displace vertically a spirally-threaded rod I in a guide R, carried by a bracket S, fixed to the frame of the machine. One of the extremities of the rod I is provided with a pulley p. The cam N works upon a lever M and makes the same advance and draw back alternately. It acts also upon the rod I, displacing the same horizontally in a guiding-slot of the lever k. During this motion the slide R swings around its axle upon the bracket S. On the other hand, the pulley p, mounted upon the rod I, is brought in contact with the driving-pulley O, actuated by the motive shaft a' through the intermediary of the pulleys o' and o'' and a crossed belt. The cam Y, through the intermediary of a roller γ, acts upon a rod T, causing the same to advance, while the recoil thereof is operated by a spring s, fixed to a projection of the frame J.

When the cam Y pulls the roller γ and the rod T forward, the latter, which is held by a roller r in a slide R', that swings freely upon the axle of the cylinder P, will cause an angular displacement of said slide R'. The slide R' has two right-angled projections r' r'', in the extremities of which a parallel shaft V has its bearings. This shaft is provided with a screw W, which engages with a gear X on the shaft of roller P. It also carries a small ratchet-wheel U, which is prevented from rotating in one direction by a pawl v, secured to the main frame. When the slide R' swings backward, the shaft V goes with it, and on account of the position of the screw with respect to the axis of wheel X the latter is slightly rotated. In this movement the pawl v slips over the teeth of ratchet-wheel U. When, on the contrary, the roller γ meets the radius of the cam Y, the rod T will be pulled backward by the spring s. It thereby causes the displacement of the slide R' and of the wheel U in the reverse direction. The wheel U when thus reversed is held by the pawl v and is therefore compelled to rotate the distance of one tooth. Said motion being transmitted to the pinion X by the endless screw W causes a rotation of the cylinder P and a forward motion of the

apron A, the amplitude of which will exceed the preceding recoil motion by a distance corresponding to the rotation of the wheel U.

The machine comprises, further, a square rod D, arranged parallel to and near the cylinder B, over the apron. It carries a series of springs C, which press upon the apron A near the place where it passes over the roller B, (see Figs. 3 and 4^a), and the pressure of these springs upon the apron is regulated by means of a lever E, mounted upon the extremity of the square rod D, upon which a tension-spring F acts. The position of these springs can be slightly modified by means of an elbowed lever E', pivoting around the axle a^2 and ending in an operating-handle. This device is mounted upon one of the sides of the machine, as shown in Figs. 3 and 4^a.

The machine thus constructed works as follows: The skins to be depilated are fixed one after another on the apron A, their hairs lying backward in the position shown in the drawing, Fig. 5. Let us suppose the machine having been put in motion and one of the skins having arrived at the extremity of the apron A on the cylinder B. At that moment the cam Y releases the roller γ . (See Fig. 4.) The result thereof is that the spring s , which acts as has been described hereinabove, causes a determined forward motion of the apron A. The skin passes then under the blades of the springs C, and a certain part of the hairs which were formerly held backward by the pressure of said springs escape, as shown in Fig. 5, and are submitted to the action of the brush H of the drum G. At that moment the threaded rod I stands high in the slide R by the action of the cam K. The brush H, which operates in the direction of the arrow, Fig. 5, brushes downward all the hairs that may have escaped from the pressure of the springs C. At the moment the brush H has almost finished its work and that the hairs are thus partly held down by the springs C and partly driven in the opposite direction, as shown in Fig. 6, the cam K lets the lever k down, which carries down the threaded rod I, which replaces the action of the brush H and holds the hair in the indicated position. (See Fig. 6.) The cam N, which now commences to operate, pushes the lever M backward and the rod I under the cylinder B. (See Fig. 7.) This motion makes the pulley p (see Figs. 2 and 3) come in contact with the driving-pulley O, which rotates the rod I rapidly. The rod I will then have a very peculiar action. The hairs it holds turned downward against the circumference of the cylinder B are of two very different kinds, part of them being rather short and silky and the other longer and more resisting. These latter (the bristles) must disappear. The rod in turning does not have the least action upon the soft or fur hairs. It simply keeps the same pressed against the apron A. The longer and harder hairs, however, are carried along on account of their stiffness, as shown in Fig.

8. They enter the threads of the rod and are thus pressed down obliquely, making them apparently shorter. At the same time they are thus obliquely held down by the thread of the rod I and thus held between said thread and the apron the roller γ and the lever T are pulled forward by the cam Y. (See Fig. 4.) There will be a sudden recoil of the apron A, which recoil, if the machine is well regulated, will correspond to a determined fraction of the previous advance of said apron. During that motion of recoil the fur hairs the length of which that is pressed between the rod I and the apron is greater than the space said apron has gone backward will be kept down by the rod and held between the same and the apron A. The hard hair or bristles, however, which on account of their having become shorter for a moment are less engaged between said rod I and the apron, will be pulled back for a distance long enough to make them leave the threads of the rod I and jump straight again by their own stiffness, as can be seen in Fig. 9, showing these hairs in heavy lines. Now during the time that those different mechanical motions have taken place the cylinder G has continued its rotary motion, so that the straightened bristles, which stand now separated from the fur hair, will face the part of its circumference which is provided with the small Bunsen burners. They will burn said bristles without touching the fur hairs, which are kept pressed down by the springs C and by the rod I. When the bristles have thus been burned over an entire row equal to the width of the skin, the roller γ will again be released by the cam Y, the spring s will pull backward the lever T and the apron A will advance, and a certain quantity of the hairs which have been released from the pressure of the springs C will again be submitted to the action of the brush H, and so on. When one skin has been thus treated entirely, I let it proceed with the apron until it shows over the machine. It is then replaced by another raw skin without it being necessary to interrupt the operation of the machine.

It is obvious that it is principally due to the use of the threaded rod I that unshaved skins can be treated, the main object of said threads being to make disappear, for a moment, at least, the inequality of the length of the hairs. It could be possible as well to use a smooth rod if previously-shaved skins were to be operated upon. It is also evident that the rod I could be threaded differently, according to the nature of the skin and the length of the hair. The position of the springs C and their degree of pressure upon the cylinder B can also be regulated according to the nature of the skins and the length of the hair.

Having thus described my invention, I claim—

1. In a machine for depilating skins, the combination of means for imparting a to-and-

from movement to the skins, a spirally-threaded pressure rod or roller adapted to rotate against the hair, means for rotating said rod whereby the stiff long hairs are separated from the shorter soft ones, and means for removing the long hairs, substantially as described.

2. In a machine for depilating skins, the combination of means for imparting a forward-and-backward movement to the skin, the forward movement being greater than the backward, a spirally-threaded pressure-roller adapted to rotate in contact with the skin, means for rotating said rod and means for removing the long hairs for the purpose set forth.

3. In a machine for depilating skins, the combination of an endless belt upon which the skins are carried, a row of spring-fingers bearing upon the hair of the skins, a spirally-threaded roller, means for rotating said roller in contact with the hair on the skin at a point adjacent to the fingers, and means for imparting a forward-and-backward movement to the belt carrying the skin, substantially as described.

4. In a machine for depilating skins, the combination of an endless belt upon which the skins are carried, a row of spring-fingers bearing upon the hair of the skins, a spirally-

threaded roller, means for rotating said roller in contact with the hair on the skin at a point adjacent to the fingers, means for imparting a forward-and-backward movement to the belt carrying the skin and a series of burners arranged between the row of fingers and the roller and adapted to burn off the exposed hairs.

5. In a machine for depilating skins, the combination of an endless belt upon which the skins are carried, a row of spring-fingers bearing upon the hair of the skins, a spirally-threaded roller, means for rotating said roller in contact with the hair on the skin at a point adjacent to the fingers, means for imparting a forward-and-backward movement to the belt carrying the skin, and a cylinder provided on a part of its surface with a brush adapted to sweep the hairs exposed between the fingers and roller, and in another portion of its surface with burners adapted to burn off the said exposed hair, substantially as described.

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

GUSTAVE DE KEUKELAERE.

Witnesses:

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