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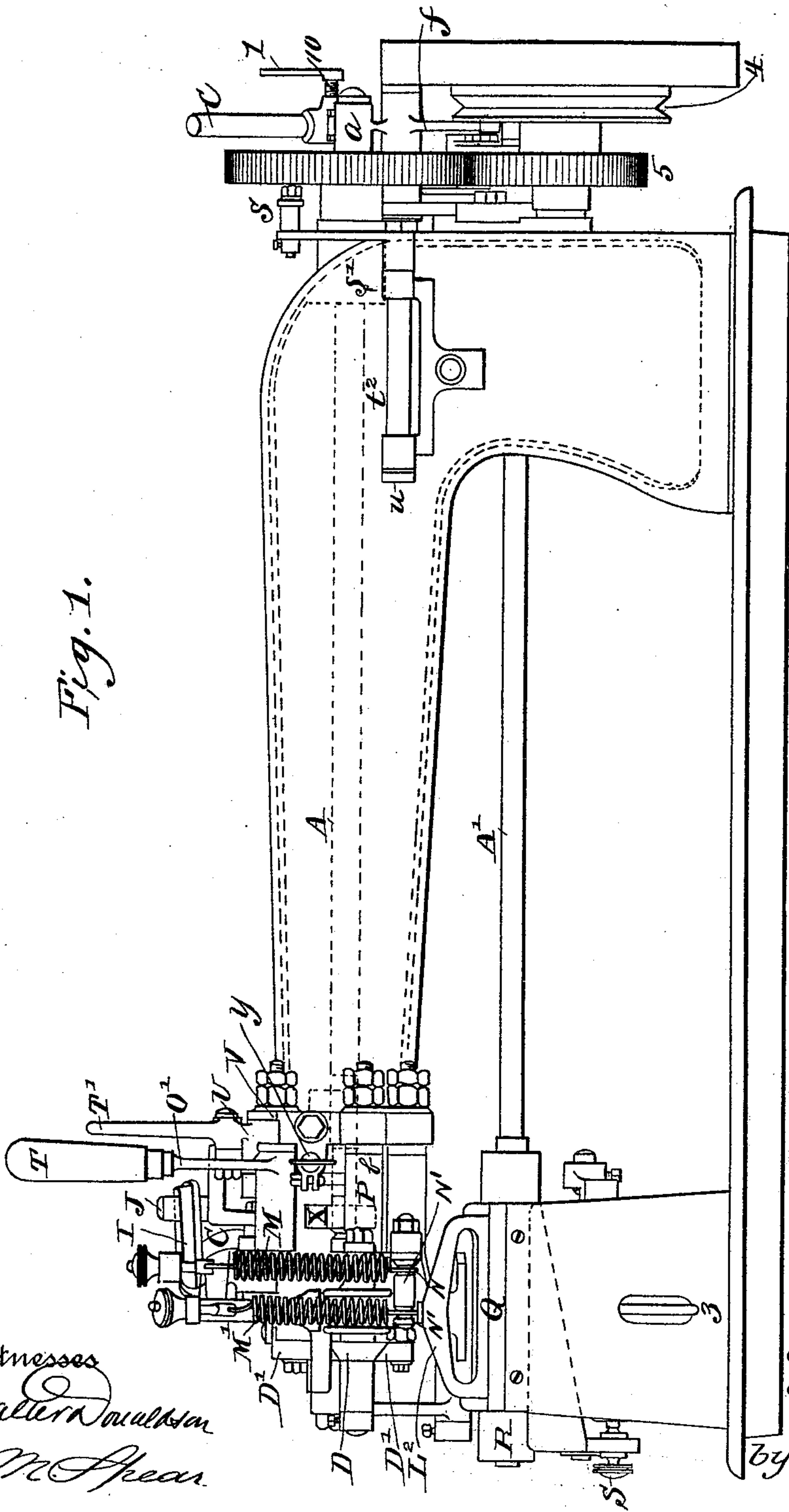
6 Sheets—Sheet 1.

0. POTELUNE.

MACHINE FOR TREATING SKINS, &c.

No. 479,460.

Patented July 26, 1892.



Witnesses
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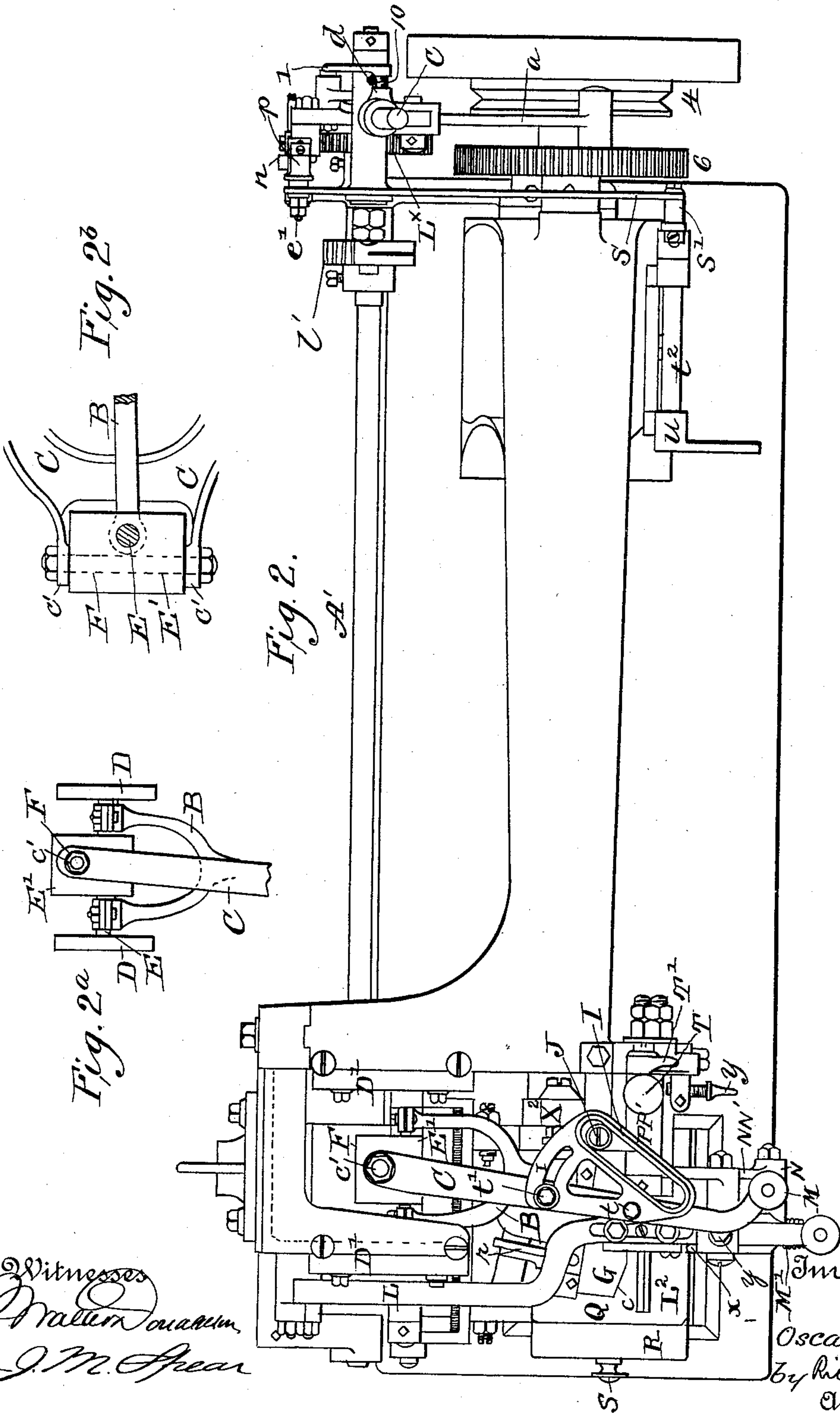
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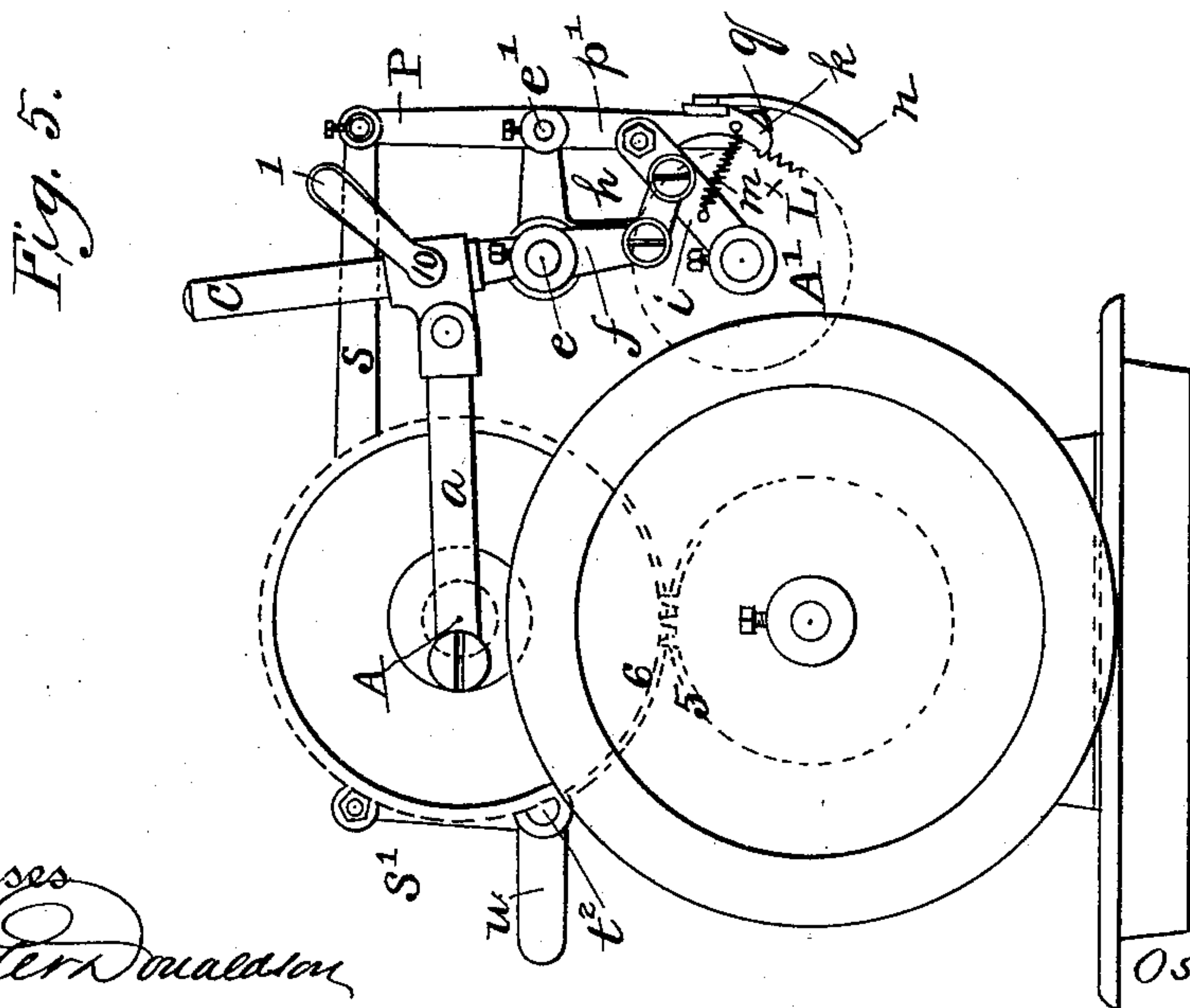
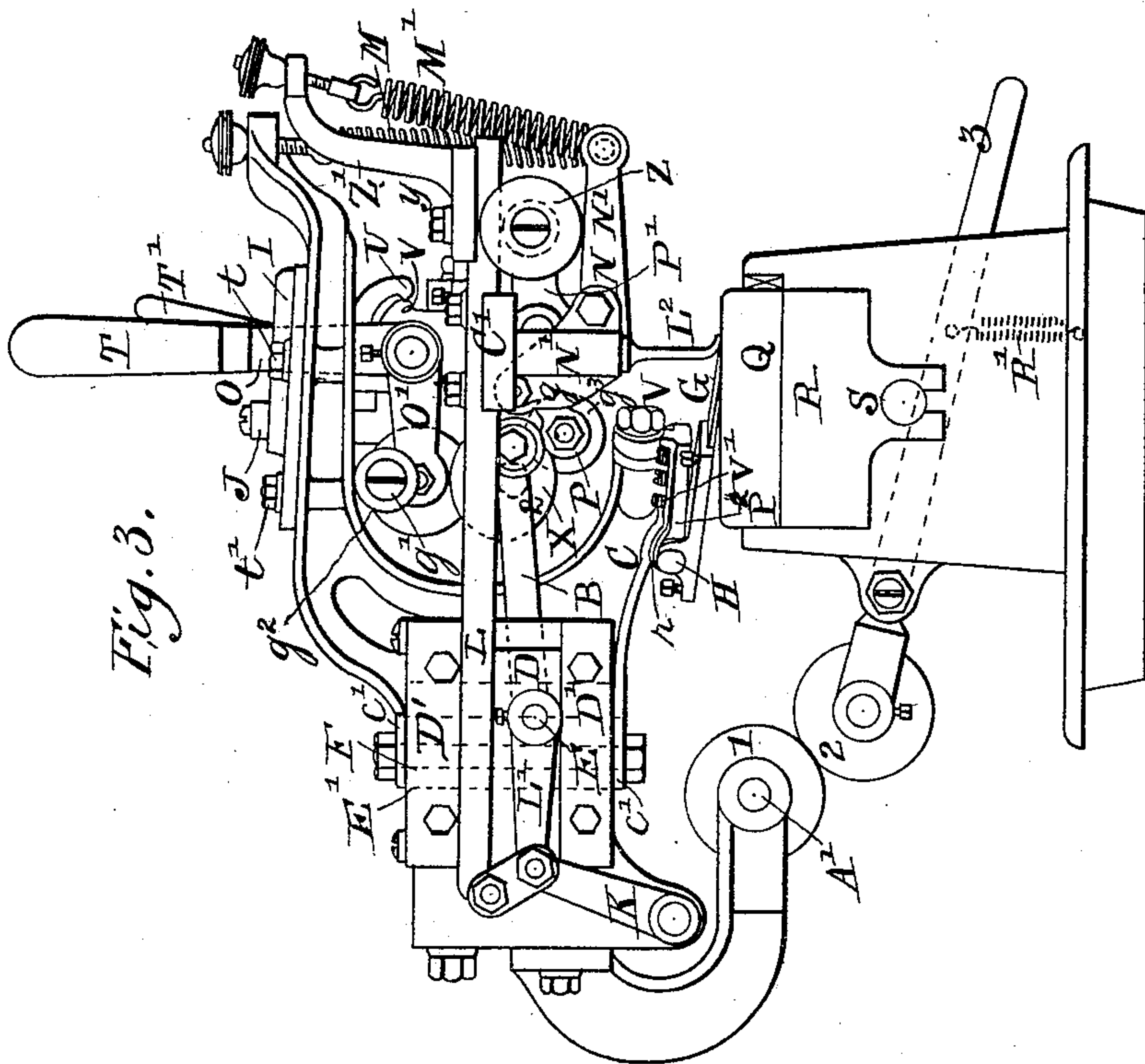
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(No Model.)

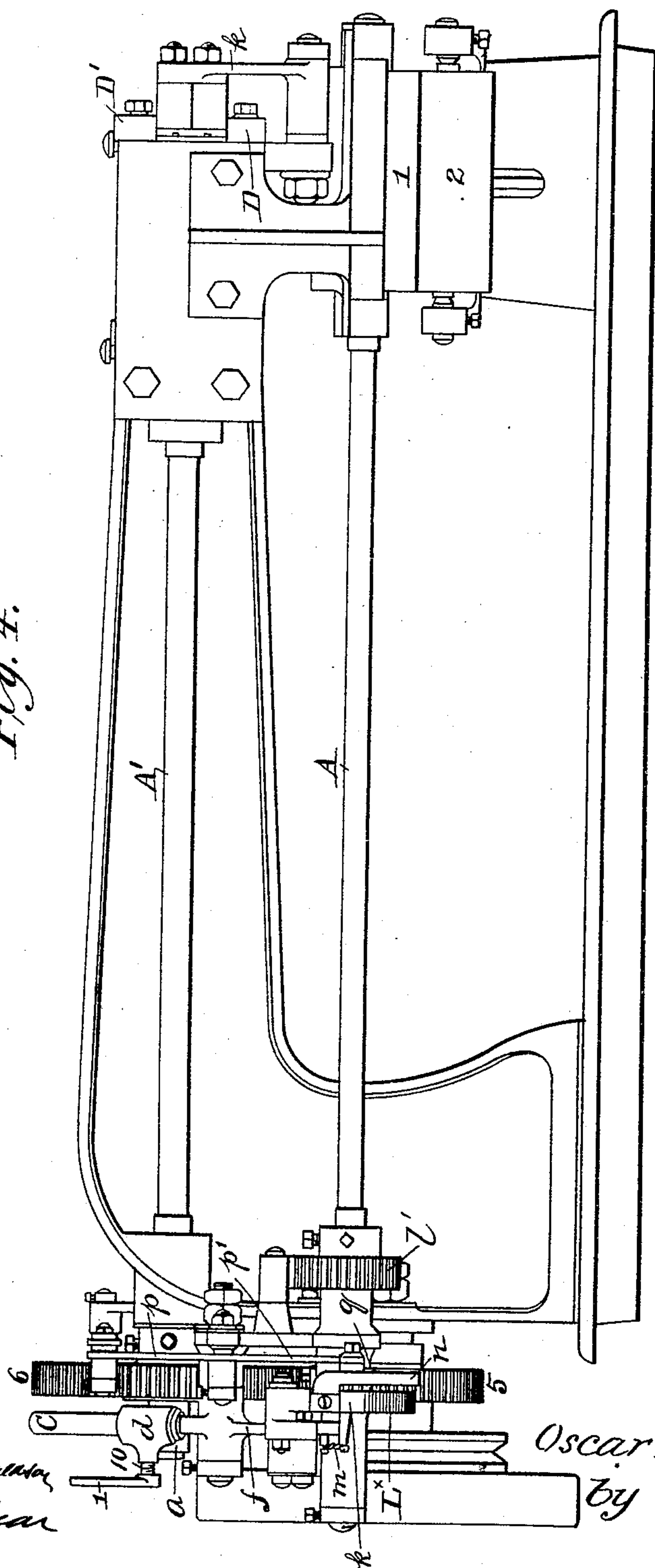
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Fig. 4.



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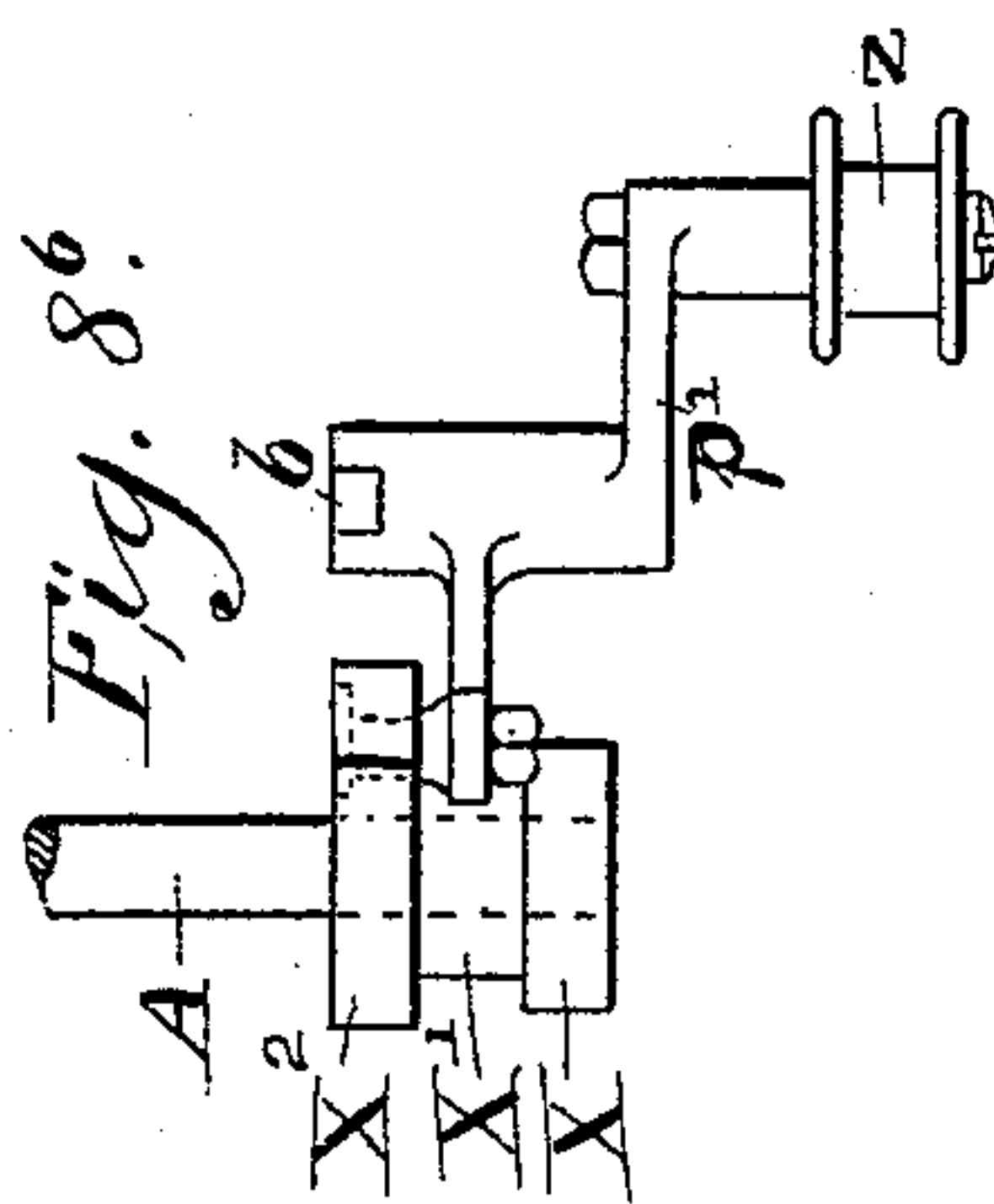
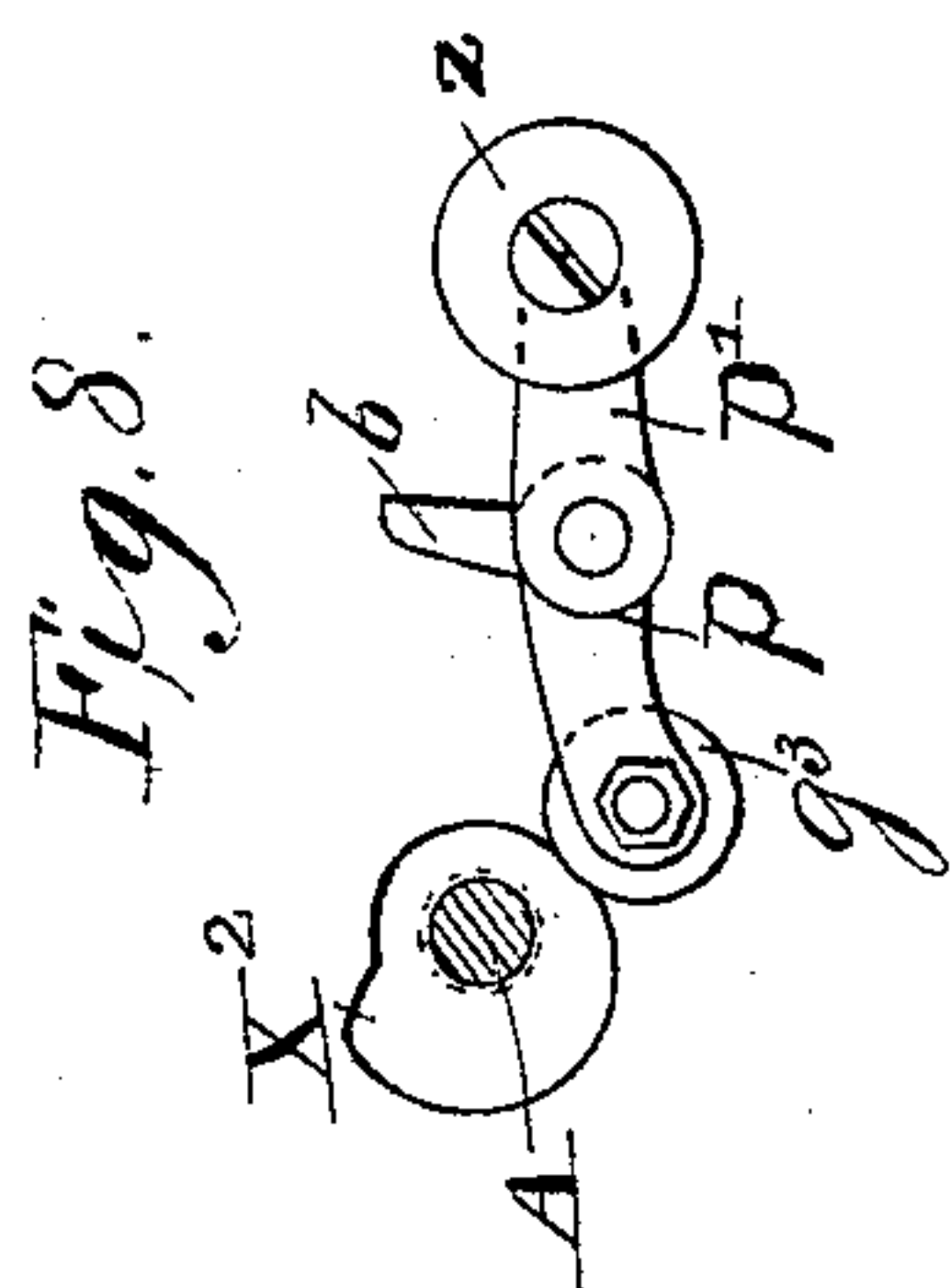
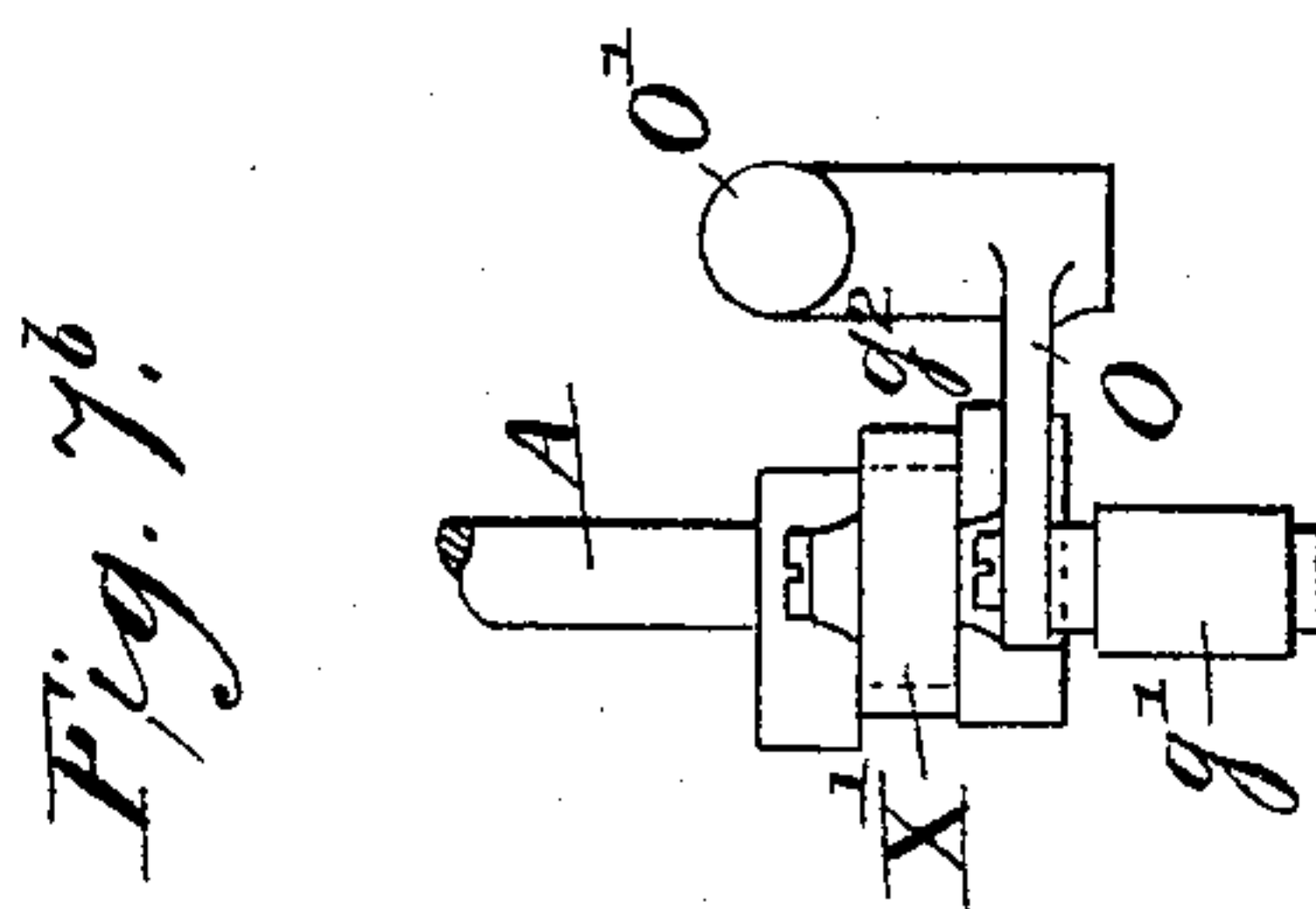
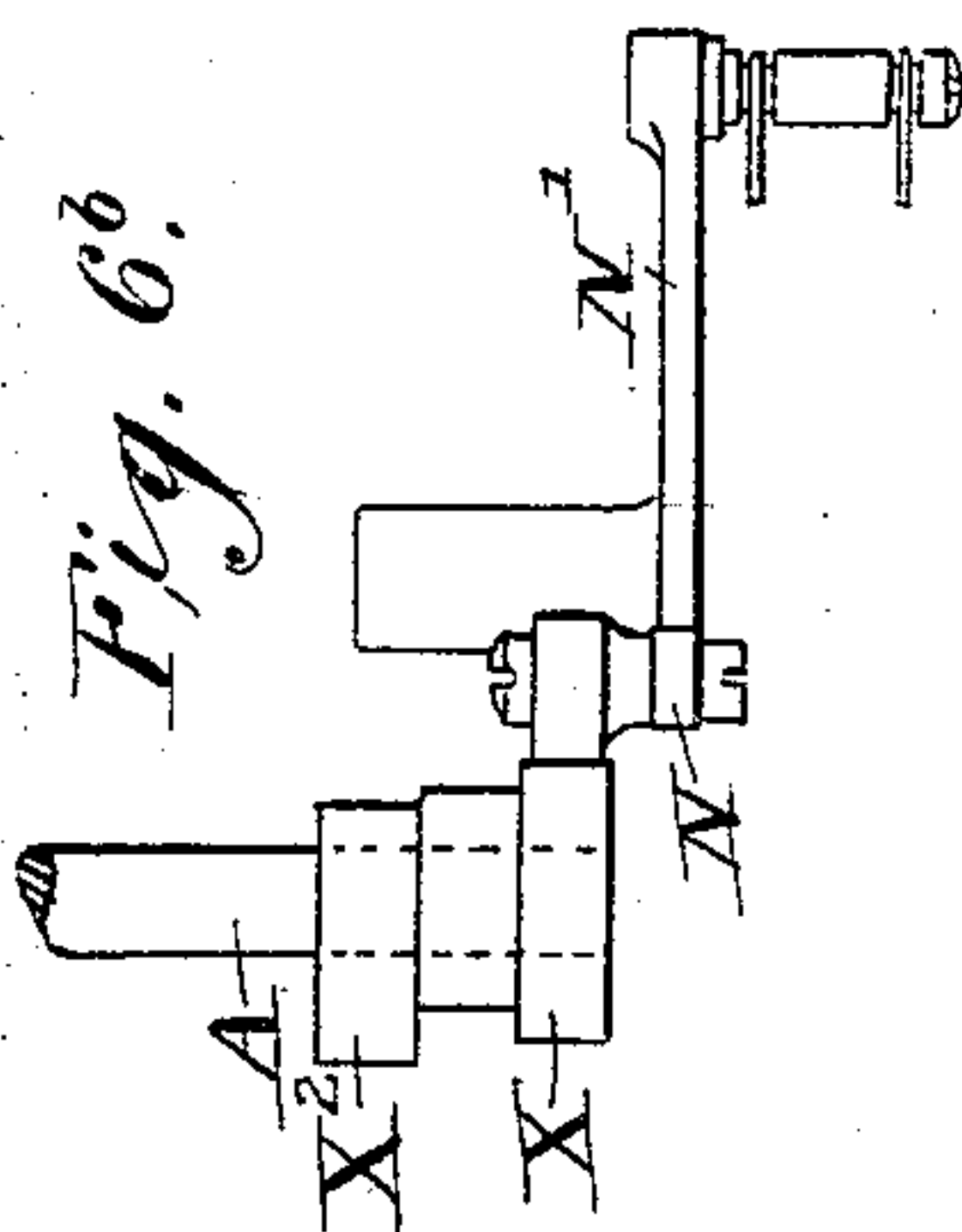
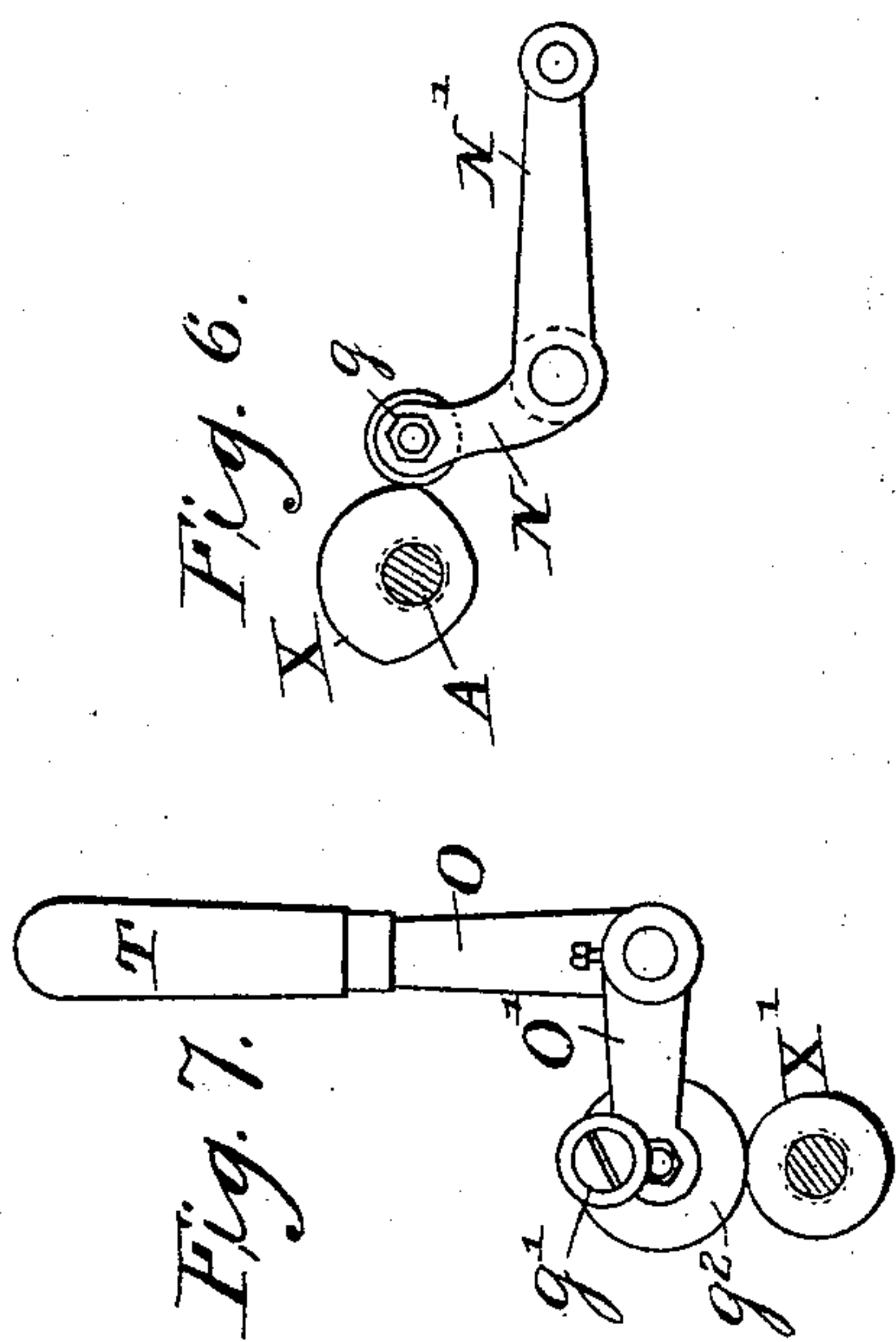
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O. POTELUNE.
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(No Model.)

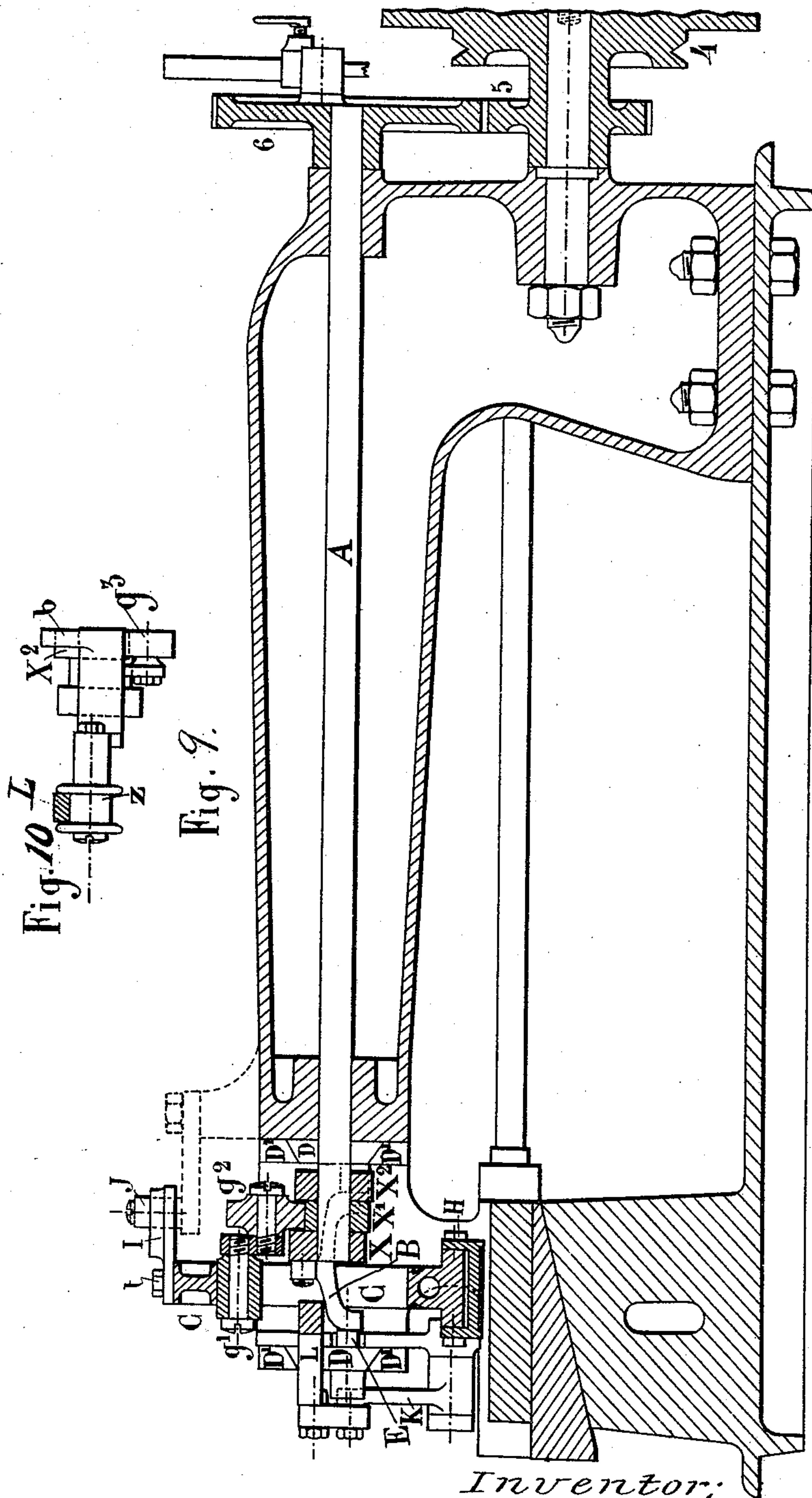
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O. POTELUNE.

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No. 479,460.

Patented July 26, 1892.



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UNITED STATES PATENT OFFICE.

OSCAR POTELUNE, OF LIMOGES, FRANCE.

MACHINE FOR TREATING SKINS, &c.

SPECIFICATION forming part of Letters Patent No. 479,460, dated July 26, 1892.

Application filed October 15, 1890. Serial No. 368,244. (No model.)

To all whom it may concern:

Be it known that I, OSCAR POTELUNE, of Limoges, in the Republic of France, have invented a new and useful Machine for Treating Skins, &c., which is fully set forth in the following specification.

The machine hereinafter described has for its object to beat (soften) or to stretch and cut superficially or shave skins destined for the manufacture of gloves, fine shoes, and similar articles. This machine is to smooth, to pare, to unwrinkle, and to denerve such skins.

In the following drawings, which form a part of this specification, Figure 1 is a side elevation of my machine. Fig. 2 is a plan view. Fig. 2^a is a detail plan view of part of the knife-carrier, showing its pivoted support, by which it may move vertically and horizontally. Fig. 2^b is a detail elevation of the same; Fig. 3, a view in elevation of one end of the machine. Fig. 4 is an elevation of the rear side of the machine—i. e., of the side opposite Fig. 1. Fig. 5 shows in elevation the end of the machine opposite to that shown in Fig. 3, illustrating the general disposition of the transmitting mechanism. Figs. 6 and 6^b show in detail, in elevation, and in plan the lever of the springs and its position in reference to the outer cam X, from which it receives motion, and of the other cams X' X² and of their corresponding levers and rollers. Figs. 7 and 7^b give the detail in elevation and plan view of the elbow-lever which carries the supporting-roller of the knife-carrier and its position in reference to the middle cam X', which acts on another roller below the preceding one of the same lever. Figs. 8 and 8^b give the detail in elevation and plan and its position in reference to the third cam X² of the abutment-lever, which is provided on one side with the supporting or guiding friction-roller of the beam or carrier of the beater and smoothing-knife and on the other side with the roller under aforesaid cam X². Fig. 9 is a longitudinal section of the apparatus through the axle A, and Fig. 10 is a partial longitudinal section forward of this axle to illustrate the operation of the knife L².

A is the principal shaft of the machine, which is actuated by the grooved pulley 4 and by cog-wheels 5 and 6, Fig. 1.

X X' X² are cams keyed to the shaft A at its extremity on the side the work is done, Figs. 1, 3, 6, 8^b, and 9. 55

B is the forked connecting-rod, jointed at its thick end to a crank-pin inserted in the face of the cam X, Fig. 3, and by the small ends of the fork to an axle E, Fig. 1, the extreme ends of which are fastened in blocks D, Figs. 3 and 9, sliding between guides D', Figs. 1, 2, 3, and 4. 60

The knife-carrier C, besides having the backward-and-forward motion caused by connecting-rod B, can oscillate at the same time vertically around axle E and horizontally around the vertical axle F. This axle F runs through two eyes c' of the knife-bearer C and is attached to block E', which is inserted between the two eyes. The block E', forming thus a body with knife-carrier C, oscillates freely around axle E, which runs through it. 65

G is the cutting-knife, fastened with screws to a sheath jointed around the axle H, which fastens it to a plate P², attached by a screw V on the front of the lower part of the knife-carrier C. Springs rr, whose ends are screwed to plate P², press on the back of the sheath to the left of the axle H, which permits of the exact regulation by aid of the screws V', Fig. 3, of the inclination of knife G, the inclination of which varies according to the angle of the cutter and the nature of the skins to be prepared. 70

I is a guide fastened to the top of the knife-bearer C, on which it is regulated and fixed in position by means of two screws t t', Fig. 2. 85

J is a roller journaled on a vertical pin fastened tight on the head of the frame and seated in a rectilinear inclined groove formed in this guide, and which in gliding on the roller J determines the horizontal movement of knife-carrier C in its forward-and-backward movement under the action of connecting-rod B, which moves the horizontal axle E and the vertical axle F, which is attached to E'. This arrangement has the object to allow the knife in advancing to operate with a slanting drawing cut. 90

K is the lever attached to connecting-rod L', transmitting the back-and-forth movement of the blocks D to the beam L of the beating and smoothing knife. 95

The beating and smoothing knife L² is 100

placed before knife G, thus beating and smoothing the skins and preparing them for the cutting-knife G. The knife L^2 is attached underneath and by means of two screws to beam L, at the end of which a support Z', Fig. 3, in the shape of a swan's neck, is fixed by a screw y; Fig. 2. An adjusting-nut acts on the top of this support, which is intended to vary the degree of tension of the spring M', the lower part of which is attached to the end N', Fig. 1, of the lever NN', Fig. 6. The extremity N of this lever presses by a roller g against the outside cam X. The beating and stretching knife L^2 is provided with a large opening to enable the observation of the working of the cutter-knife behind it.

M' is the spring, the tension of which is regulated by a nut acting upon the upper branch of knife-carrier C and whose lower end is fastened, as is also the spring M, to the end of arm N' of the lever NN'. By the action of these two springs and by the cam X the force of the two different knives is regulated, the spring-tension being increased and diminished by the action of the lever NN', according as the knife and beater move to or from their work. The part X is properly a cam, as shown in Fig. 6. It acts on the roller g. The part l is the handle of the jam-screw 10.

OO' is the elbow-lever, Figs. 1, 3, 7, and 7^b, having a handle T, intended to maintain in its alternate movement the knife-carrier C, which constantly presses on or is borne by roller g' of this lever, whose roller g² rests upon cam X', Figs. 3, 7, and 7^b.

PP', Figs. 3, 8, and 8^b, is another lever destined to actuate and to guide by its flange-wheel Z the beating and smoothing knife L^2 in its forward-and-backward movement. This lever is actuated by the third cam X². It is supplied with an abutment b, against which a screw Y, Figs. 1 and 2, acts to withdraw the roller g³ from the cam X² and stop work by knife L^2 .

Q is a straight slab of marble, on which the skins are placed to be drawn between the rollers 1 2 by the action of roller 1, mounted at the end of the lower shaft A', which is arranged parallel to the principal shaft A and receives its motion by the arrangement of the pawl-and-ratchet mechanism illustrated in Fig. 5. The force with which cylinder 2 presses against cylinder 1 is regulated by a spring R', arranged within the frame, which depresses the end of the oscillating lever 3, which holds cylinder 2 at the ends between the branches of its fork. This cylinder 2 can be easily removed from cylinder 1 to put in the hides to be smoothed.

R, Fig. 1, is a wedge, which can be moved forward or back by a micrometer-screw S underneath the marble platen Q to raise or lower the same in accordance with the requirements of the work.

T is a handle to move lever O O', and T' a handle connected rigidly with handle T and ending in a hook U. v is a notch, Fig. 1.

When the hide is not to be cut, but simply beaten, the knife-carrier C is raised by the handle T and the roller g' at the same time hook U is inserted in notch v, by which manipulation the knife G is raised high enough not to touch the hide.

a is a connecting-rod transmitting a backward-and-forward motion to lever c, on which is the adjustable socket d, which can be secured at any point desirable by means of a screw 10, operated by the handle l, Figs. 1, 4, and 5; e, an axle around which lever c oscillates; f, the lower extension of lever c; h, a short connecting-rod; i, a lever oscillating around axle A'; k, a pawl; L^x, a ratchet-wheel; m, a spring; n, a curved finger attached to pawl k; p p', Figs. 4 and 5, a lever pivoted on axle e and terminating in a rounded end q, adapted to press against curved finger n.

s is a connecting-rod; s', Fig. 5, a lever fastened at the extremity of the small shaft t²; u, a handle attached at the other extremity of shaft t².

The mechanism, Fig. 5, placed at the rear of the frame gives two distinct transmissions. The principal one by a grooved wheel 4 and wheels 5 and 6 puts the main shaft A in rotation, at the extreme end of which the block, with the three cams X X' X², is keyed, by which the different combined movements are brought forth to obtain the result in view. The other puts in intermittent rotation the lower shaft A', at the end of which is cylinder 1, which draws the hide placed between this cylinder and cylinder 2, which is journaled at its ends, between the fork of oscillating lever 3, the other end of which is more or less depressed by spring R', which regulates the pressure between cylinders 1 and 2. The motion of shaft A is transmitted from wheel 6 by the rod a, the socket d, the lever c, turning on axle e, thus causing the lever i to turn on shaft A' through its connection by link h with the extension f. Pawl k, drawn by spring m, hooks into the teeth of wheel L, keyed on shaft A', giving motion to this shaft in one direction. To stop this movement, it suffices to press downward on handle u at the extremity of shaft t², at whose other end lever s' is attached, which again is pivoted to rod s by lever p p', turning on e', and which by its rounded lower end q moves the curved finger n, attached to pawl k, which pawl is thus removed from the toothed wheel. A spring m draws the pawl k back to the wheel as soon as the pressure stops on handle u.

The movement is given to knife-carrier C, which turns at the same time vertically and horizontally around the respective axles E and F and moves forward and backward with sliding blocks D, first by the cam X and rod B, second by the roller J, seated in the rectilinear inclined grooves of guide I, attached by screws t t' to knife-carrier C, and by roller g', to which cam X' by roller g² gives an up-and-down movement. This last movement has the object of lifting the cutting-knife

from the top of the hide during its rearward movement and to bring it again in contact therewith while advancing, and the roller J produces the sweeping or drawing movement by which the knife is to cut the hide only superficially.

Knife G is tightened in its sheath by screws, and the sheath is again tightened to axle H, which serves as a pintle to the hinge formed by the sheath and plate P², attached to the lower arm of knife-carrier C by the front screw V. Screws regulate the distance in front between the sheath and the plate, while the springs r, attached at their rear ends to the front of plate P², press with their free ends against the back of the sheath, and thus tend to force the front against the screws V'. This arrangement is designed to regulate the position of the knife by means of the screws. The forward-and-backward motion given to knife-carrier C by the cam X and connecting-rod B is transmitted by axle E, the rod L', and lever K to the rod L, to which is secured by means of two screws the beating-knife beam C'. By the support Z', fastened to the end of L by screw y, and on which works a tension-nut, this knife-beam is drawn by spring M', whose lower end is hooked to the end N' of the lever NN', turning on its fixed axle, under the action of cam X on roller g. The upper end of knife-carrier C is also connected by a tension-nut to spring M', which again is also hooked to the end N' of lever NN'. It follows that as roller g is more or less moved by cam X the springs M M' have more or less tension and that the cutting-knife G and beating-knife L² come down with more or less force on the hide.

The movement can be suspended of one or the other knife in the following manner: For the cutting-knife G by means of handle T, to which handle T' is fastened, the extremity of which is a hook which catches underneath the notch v as soon as roller g', which bears against the upper branch of knife-carrier C, and roller g², which bears against cam X', have been raised high enough. The knife-carrier C continues to go through its different movements; but the knife G cannot touch the hide. For the beating and drawing knife L² by means of the screw Y acting on the abutment b of lever PP', pushing it back so far that roll g³ cannot touch cam X². Then arm P' of lever PP', through the flanged roller Z, lifts beam L of the knife-holder C, and in consequence knife L². This knife is provided with a large opening to permit of seeing the work of the cutting-knife placed behind it.

The raising or lowering of the marble platen Q is accomplished by means of the wedge R, on the upper side of which the marble rests. By advancing or drawing back the wedge R by means of the micrometer-screw S the height of the marble slab Q is regulated and is then held steady by tightening-screws.

It is seen that the machine, as described, has two distinct movements, the principal

one, transmitted by shaft A, having the object to effect the movements of the knife-carriers, the other movement, transmitted by shaft A', having the object of moving and drawing the hide quicker or slower across the platen Q.

The principal movement by the cams X X' X², the corresponding levers NN' OO' PP' and their respective rollers, the connecting-rods B and L, the axles E F, the rod L', and the lever K is subdivided in different simultaneous movements, with the object of having the cutting-knife G shave the upper part of the hide by a drawing cut while advancing and of having the beating and stretching knife L² beat more or less hard and at the same time stretch the hide to smooth out wrinkles. At the same time they are so disposed that, first, one or the other can do work independently or that one can be stopped while the other continues at work, and second, so that the cutting-knife and the marble can be perfectly regulated as to position and that the hide be drawn with the quickness and tension that may be desired.

What I claim is—

1. In combination, the knife and the knife-carrier pivotally supported to have movement vertically and laterally, the means for reciprocating said carrier, with its pivotal support, forward and backward, means for moving the carrier up and down, and the guiding means for moving the carrier laterally as it moves forward and backward, substantially as described.

2. In combination, the knife and the knife-carrier, the pivotal support therefor, consisting of the block E', the vertical shaft F, passing through the same and the eyes of the knife-carrier, the horizontal shaft E passing through the said block and upon which the carrier and its block pivots vertically the movable supports for the shaft E, the means for reciprocating the shaft-supports, with the block E' and carrier, forward and backward, and the guiding means I J for moving the carrier laterally as it moves forward and backward, substantially as described.

3. In combination, the knife, the knife-carrier, the means for moving the same to and from the work, the spring for applying the tension to the carrier, and the means for automatically regulating said tension as the carrier moves the knife to and from the work, consisting of the lever NN', connected to the spring, and the cam for operating the said lever, substantially as described.

4. The combination, with the beating-knife and its carrier, of the cam X', roller g' and its oscillating lever NN', and spring M' and support Z' to give the beating-knife the desired force or pressure on the skin.

5. In combination, the knife, the knife-carrier arranged to have vertical movement to move the knife to and from the work, the means for operating the carrier, consisting of the lever OO', having a roller, and the cam for

operating the lever, the pivoted hook carried by the lever, and the catch *v* on the frame for engaging the same and holding the lever up from the operative connection with the cam, the said lever, with its roller, being arranged intermediate of the cam and carrier, whereby the said lever will raise the carrier and the knife from working position when the lever is disconnected from the cam, substantially as described.

6. The combination, with the knife-bearer C, of connecting-rod L', mounted on axle E, and of the oscillating lever K, to continue and carry over by rod L the above-specified forward-and-backward motion to beating-knife bearer C.

7. The combination, with the main shaft and knife L², the cam X² on the main shaft, and the rollers g² Z, and abutment b, of elbow-lever PP' and a screw Y, mounted to limit or suspend the action of knife L² on the skin, substantially as set forth.

8. In combination, the main shaft, the knife and carrier, the connections from the said shaft to the carrier for operating the same, the main shaft, the feed-roller 1, the shaft A', car-

rying the same, the connection from said shaft to the main shaft, including the rod *a*, the lever *c*, the pawl-and-ratchet mechanism between the same and the shaft A', and the adjustable connection between the said lever and the rod *a*, consisting of the socket *d*, to which the rod is pivoted, and the jam-screw, substantially as described.

9. The combination, substantially as described, of the feed-rollers 1 and 2, the main shaft A, with the cutting and beating mechanism actuated thereby, the secondary shaft A', controlling the movement of the feed-rolls 1 and 2, mechanism for transmitting a step-by-step movement to the secondary shaft from the main shaft, the platen, and the wedge and screw for adjusting the platen, substantially as set forth.

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

OSCAR POTELUNE.

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