

(No Model.)

2 Sheets—Sheet 1.

A. E. WHITNEY.

MACHINE FOR UNHAIRING, WORKING, AND SCOURING HIDES.

No. 330,655.

Patented Nov. 17, 1885.

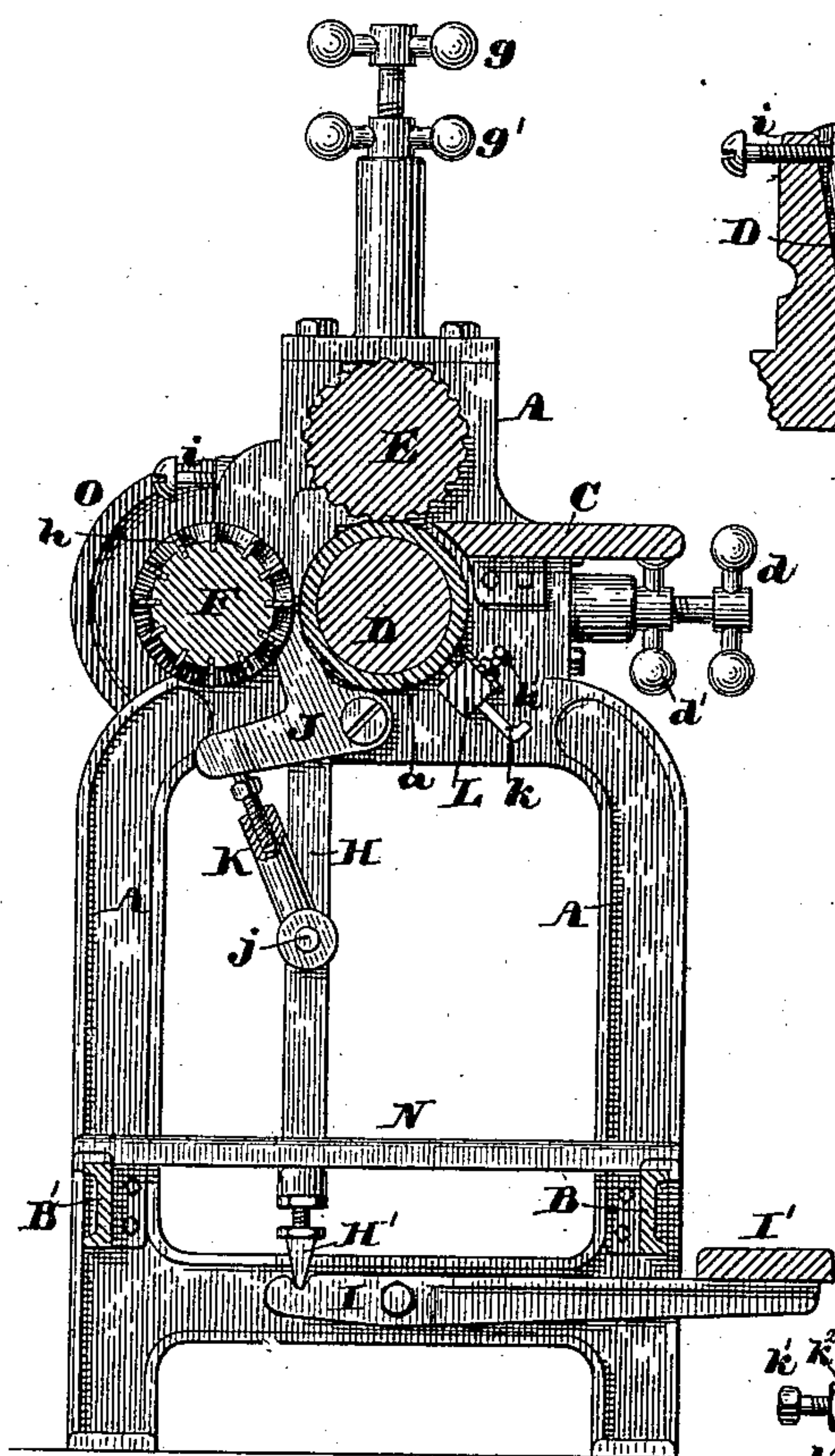


Fig. 2.

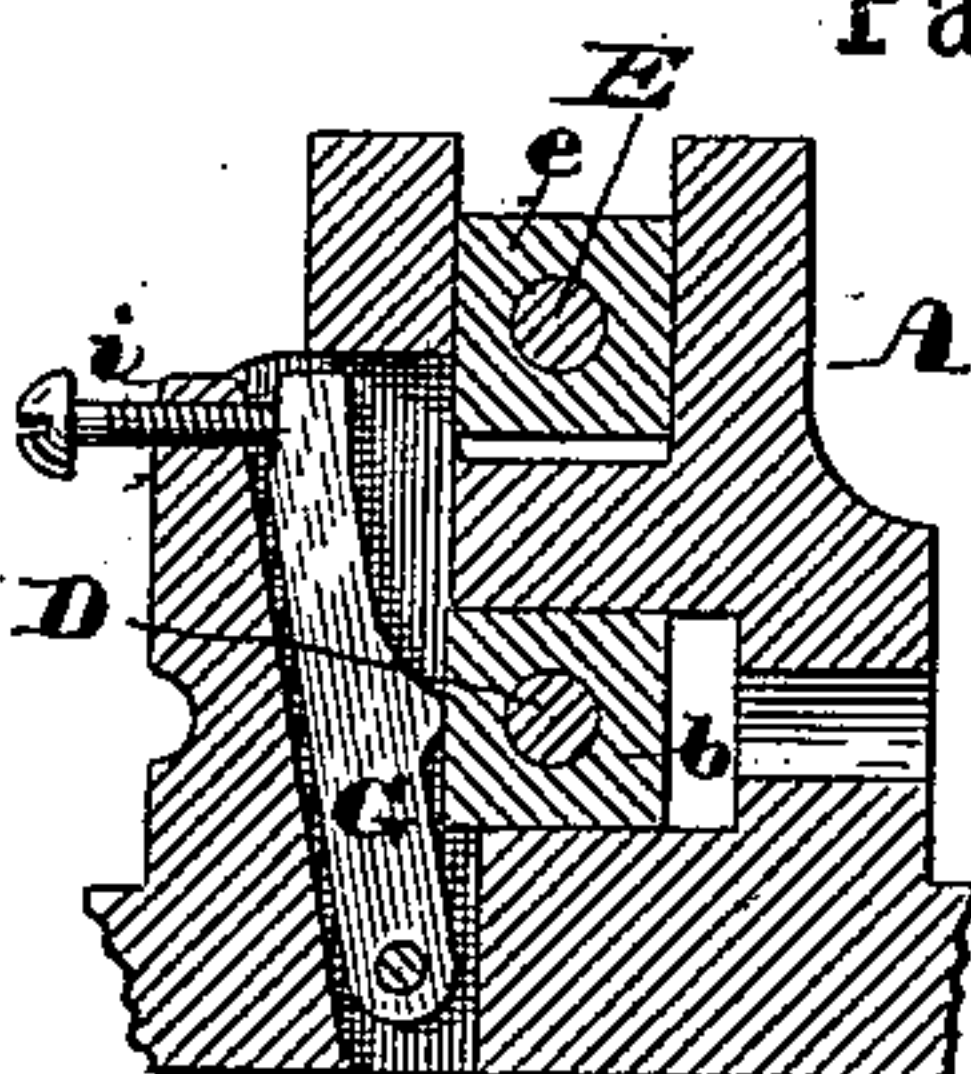


Fig. 4.

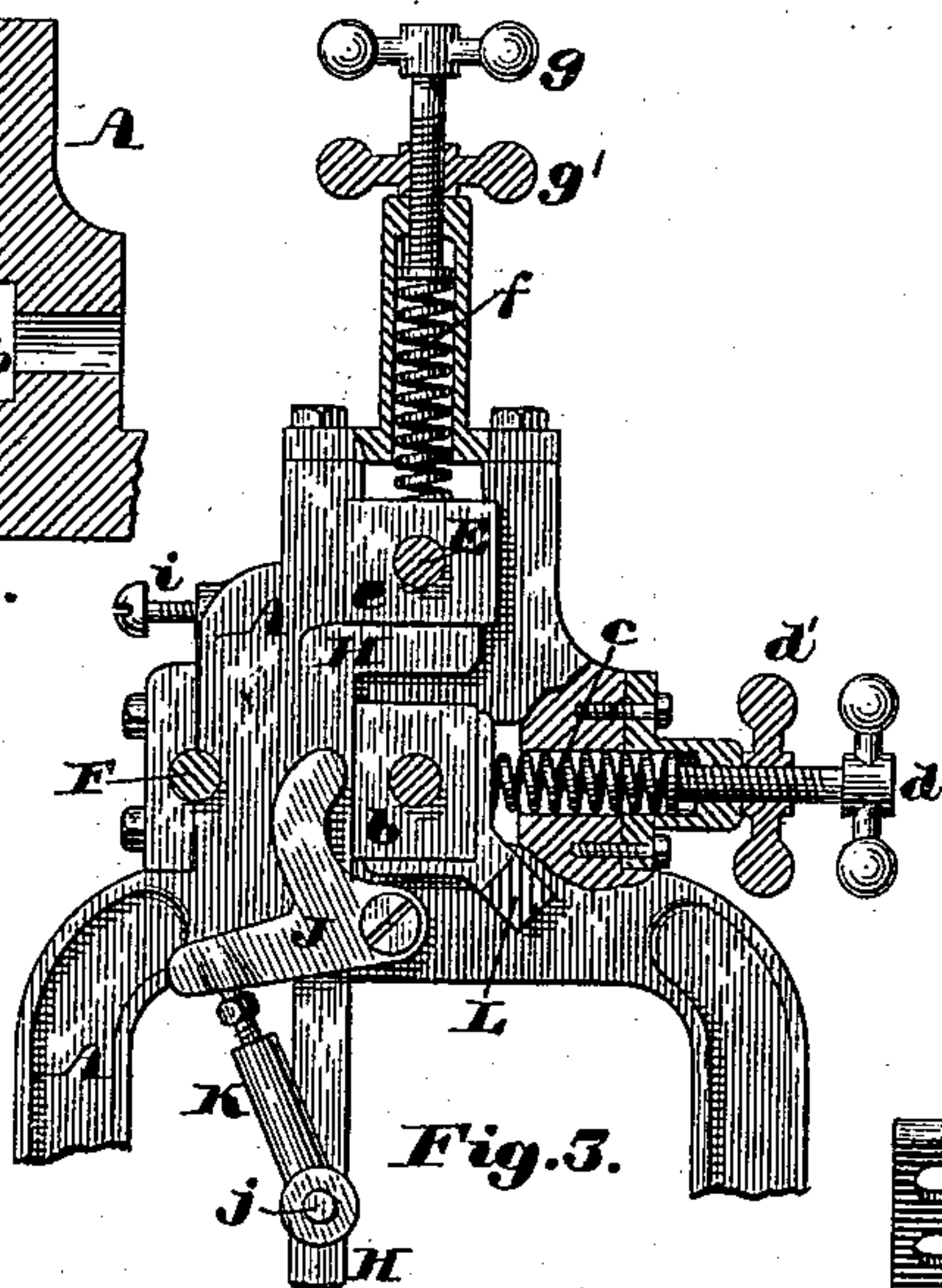


Fig. 3.

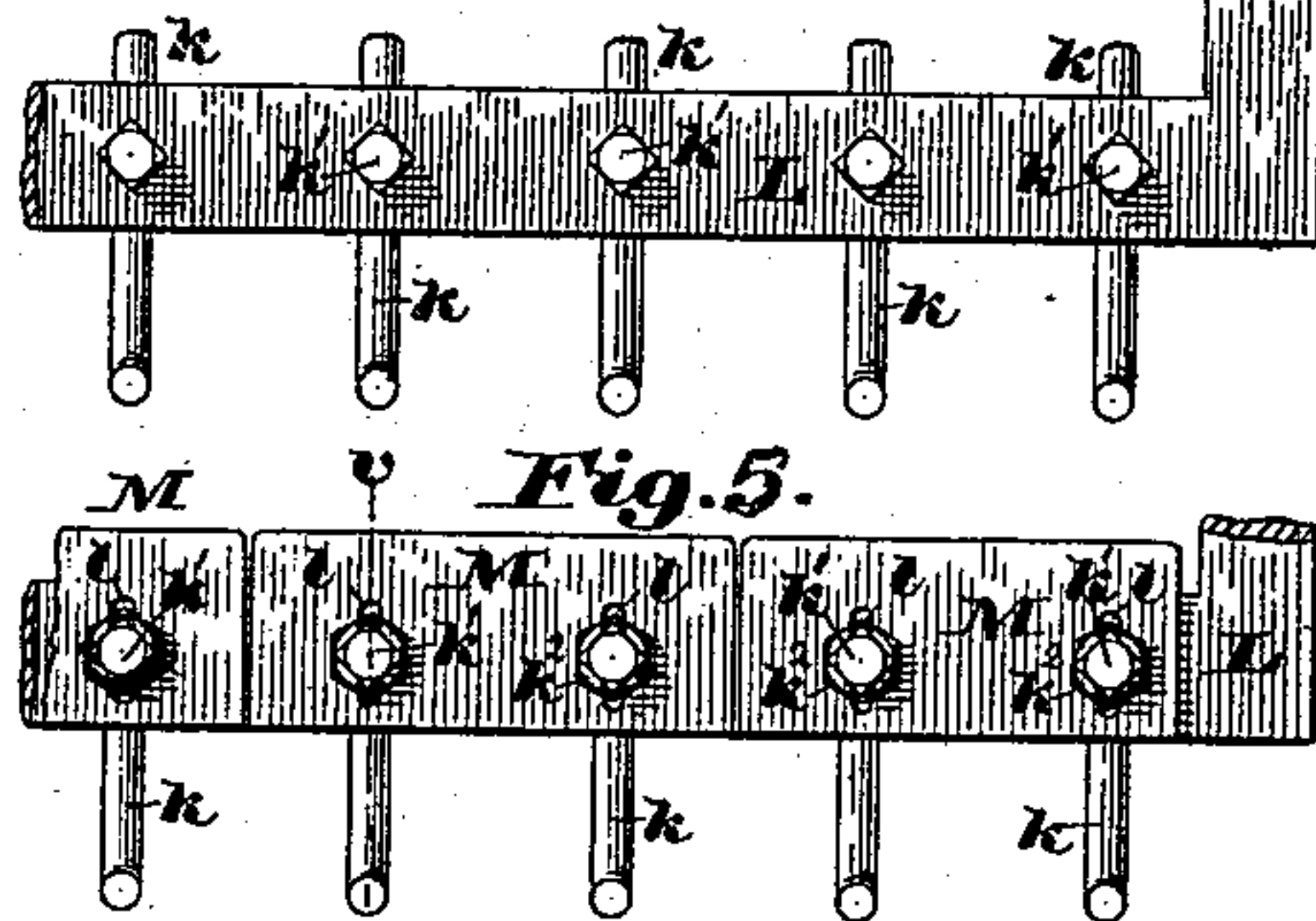


Fig. 5.

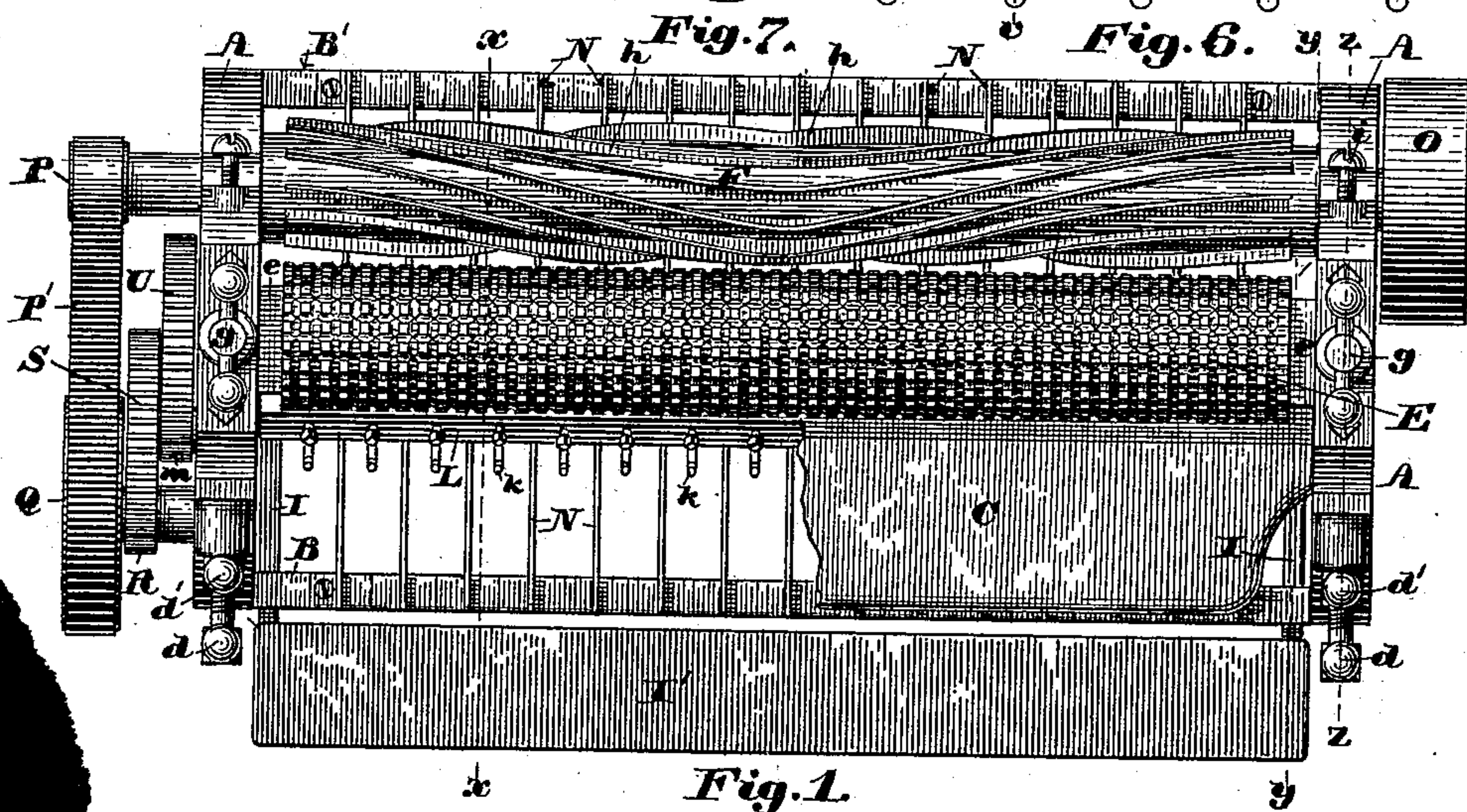


Fig. 1.

Witnesses:

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James T. Murray.

Inventor:

Arthur E. Whitney.

by N. C. Lombard
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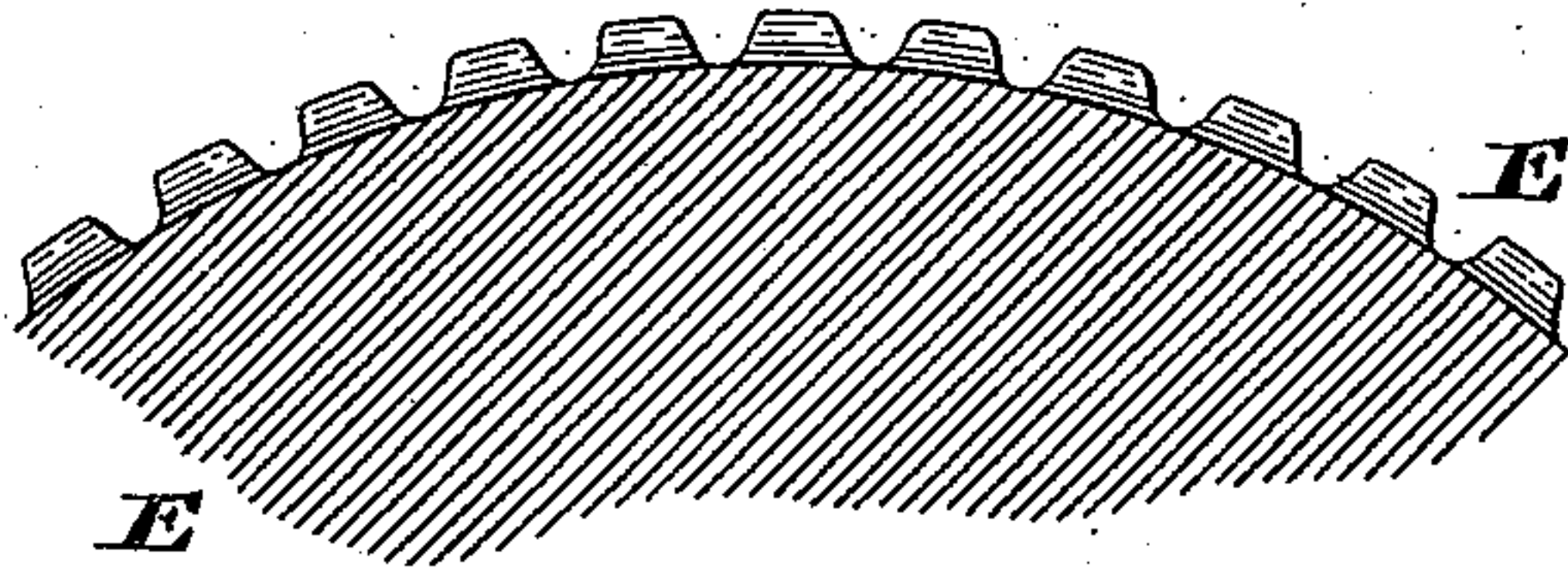


Fig. 8.

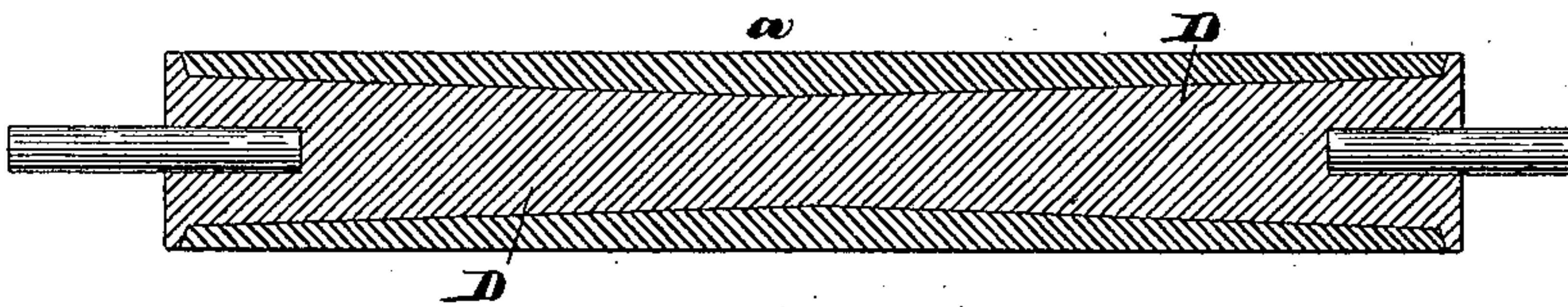


Fig. 9.

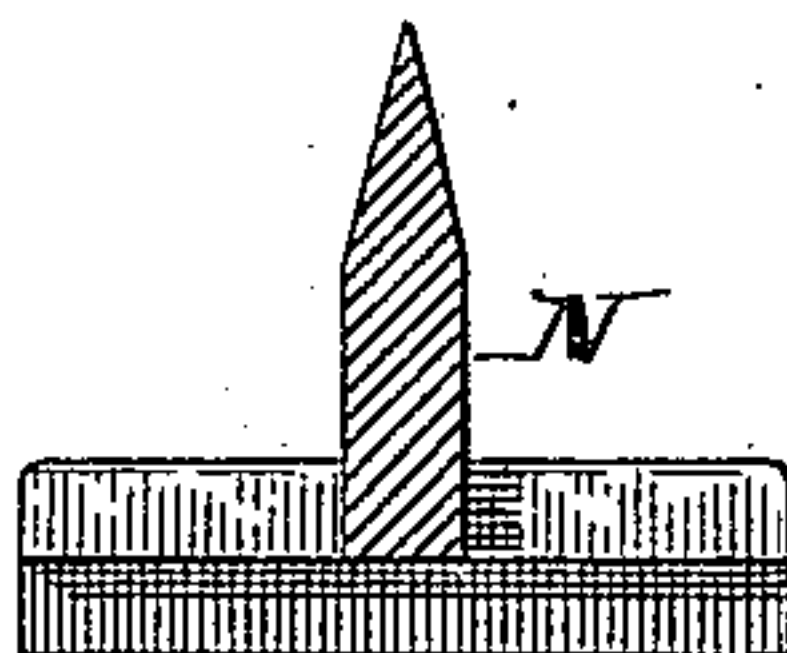


Fig. 10.

Witnesses:

Walter O. Lombard.
James T. Murray.

Inventor;

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UNITED STATES PATENT OFFICE.

ARTHUR E. WHITNEY, OF WINCHESTER, MASSACHUSETTS.

MACHINE FOR UNHAIRING, WORKING, AND SCOURING HIDES.

SPECIFICATION forming part of Letters Patent No. 330,655, dated November 17, 1885.

Application filed July 29, 1885. Serial No. 172,938. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR E. WHITNEY, of Winchester, in the county of Middlesex and State of Massachusetts, have invented certain
5 new and useful Improvements in Machines for Unhairing, Working, and Scouring Hides, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to machines for un-
10 hairing, working out, and scouring hides, and more especially to that class of such machines in which a working-cylinder provided with radially-projecting blades arranged spirally thereon is used; and it consists in certain
15 novel constructions, arrangements, and combinations of devices, which will be readily understood by reference to the description of the drawings, and to the claims to be hereinafter given.

20 Of the drawings, Figure 1 is a plan of a machine embodying my invention, with a portion of the feed-table broken away to show other parts below it. Fig. 2 is a transverse vertical section on line *x x* on Fig. 1. Fig. 3
25 is a vertical section partly on line *y y* and partly on line *z z* on Fig. 1, looking toward the nearest end frame, which is in part shown in elevation. Fig. 4 is a vertical section through the upper portion of one of the end
30 frames on line *z z*, and showing the adjustable stop for limiting the backward movement of the rubber-covered bed-roll. Fig. 5 is a plan of a portion of the clearance-bar and the fingers for clearing the hide from the bed-roll
35 when it adheres thereto. Fig. 6 is a similar view of the same bar with the clearing-pins drawn back and steel plates secured thereto for scraping the surface of the bed-roll and keeping it clean when the machine is used
40 for scouring hides. Fig. 7 is a transverse section of same on line *v v*. Fig. 8 is a partial transverse section of the pressure or feed roll drawn to an enlarged scale. Fig. 9 is a central longitudinal section of the bed-roll; and
45 Fig. 10 is a transverse section of one of the bars of the grating for receiving the hides or skins after they have been operated upon.

In the drawings, A A are the end frames of the machine, connected together by the
50 girts B B' and the feed-table C, as shown in Fig. 2.

D is the bed-roll, covered with rubber *a*, to render it slightly yielding to adapt it to variations in the thickness of the hides or skins to be operated upon, and mounted in bear- 55 ings in boxes *b*, arranged to be moved horizontally in housings in the frames A, said boxes being pressed toward the working or knife cylinder by the springs *c*, the tensions of which are regulated by the set-screws *d d* 60 and check-nuts *d' d'*, all as shown in Figs. 1, 2, and 3. The core of the bed-roll D is tapered from each end toward its center to reduce its diameter at the middle of its length, and the rubber covering is made of corre- 65 sponding greater thickness at the middle of its length than at its ends, as shown in Fig. 9, for the purpose of adapting the elasticity of the rubber to the varying thickness of the hide or skin to be operated upon. This is 70 very essential in unhairing, working out, or scouring whole skins, particularly calf-skins, from the fact that such skins are almost invariably considerably thicker along the center or back than at the edges or belly, and if a 75 thin rubber covering of even thickness throughout were used the skin would not be subjected to an even pressure, and would not be as evenly operated upon in all its parts as with my improved rubber-covered roll. 80

E is the pressure-roll mounted in bearings in the vertically-movable boxes *e*, which are pressed downward by the springs *f*, the tensions of which are adjusted by the set-screws *g* and the check-nut *g'*, as shown in Fig. 3. 85 If the roll E were a plain smooth cylinder of metal, the hides or skins would tend to adhere thereto and be wound up thereon. To obviate this I groove said roll both longitudinally and circumferentially, as shown in 90 Figs. 1, 2, and 8, which grooves, being filled with air, effectually prevent the hide or skin adhering to the roll.

F is the working-cylinder, made of cast-iron and provided with suitable journals by 95 which it is mounted in fixed bearings in the frames A, and provided with a series of radially-projecting blades or knives, *h*, arranged and adapted to act upon the surface of a hide or skin resting upon the bed-roll D 100 in a well-known manner.

The backward movement of the rubber-

covered bed-roll is limited, to prevent the blades of the working-cylinder injuring the rubber covering, by the stop-levers G, pivoted in a slot in the frame A, directly at the rear of the boxes *b*, said levers being adjustable about their pivots by means of the set-screws *i i*. (Shown in Figs. 1, 2, 3, and 4.)

The downward movement of the pressure-roll E is limited by contact thereof with the bed-roll D, and the boxes *e*, in which it has its bearings, rest upon the horizontal portions of the struts or supports H, into the lower ends of which are screwed, so as to be adjustable therein for the purpose of lengthening or shortening said struts, the knife-edged stops H', which in turn rest in notches formed in the upper sides of the rear arms of the treadle-levers I I, the front arms of which are connected together by the treadle-board I'.

J is an elbow-lever pivoted to the frame A beneath the bed-roll D, one arm of which projects upward at the rear of the box *b*, in position to act thereon to move said box, and the bed-roll carried thereby, toward the front of the machine when said lever is vibrated, the other arm of said lever being engaged by the upper end of the arm K, pivoted at *j* to the strut H, said arm K being made in two parts, screwed one within the other, for the purpose of rendering it adjustable, to vary the time of moving the bed-roll toward the front of the machine relative to the upward movement of the pressure-roll E.

L is a bar arranged below the front side of the bed-roll D and secured at each end to one of the boxes *b*, in which said roll is mounted, so as to always bear the same relation to said roll, regardless of the adjustments or movements of said roll, said bar being provided with a series of pins, *k*, adjustably set therein and secured in position by the set-screws *k'*, and designed to clear the hide from the bed-roll, when it inclines to adhere thereto, and prevent it being wrapped around said roll. The bar L also has secured thereon, by means of the bolts *k'* and check-nuts *k''*, the series of short steel plates M, which are adjustable toward and from the bed-roll by virtue of the transverse slots *l l* and set-screws or bolts *k'*, as shown in Fig. 6, said plates being designed to be used to scrape the periphery of the bed-roll and keep it clean during the process of scouring the hide. When the operation of unhairing is being performed, the plates M are moved away from the roll D, or they may be removed from the bar L altogether, and the pins *k* are moved toward said roll till their inner ends just touch the periphery thereof. When scouring is to be done, the pins *k* are moved outward, or away from the roll D, and the plates M are adjusted into contact with its periphery, and are secured in the desired positions by screwing down the check-nuts *k''* thereon, while the set-screws *k'* bind the pins *k* in their retracted positions.

N N are a series of bars extending from the front girt, B, to the rear girt, B', and supported thereby, said bars having their upper edges beveled, to form knife-edges thereon, so that the scouring material will not lodge thereon, and forming a grating, upon which the hides or skins drop after passing through the machine.

O is the driving-pulley mounted upon one end of the working-cylinder shaft, upon the opposite end of which is secured the pulley P, from which the belt P' leads to the pulley Q, having its bearing upon a stud set in the frame A, and having secured upon its hub the pinion R, which meshes into and imparts motion to the gear-wheel S, also mounted upon a stud and carrying the pinion *m*, which engages with and imparts motion to the gear-wheel U, firmly secured upon the shaft of the bed-roll D, whereby said roll D is revolved at the desired speed relative to the speed of the working or knife cylinder.

The object of having the roll-scraping plates M made in short sections is that they may be readily adjusted to any unequal wearing of the roll D, which very often wears away faster at its middle than at its two ends.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In combination with the feed and work rolls of an unhairing-machine, the bed-roll D, having a rubber covering, *a*, which gradually increases in thickness toward the middle of the length of said roll, substantially as described.
2. In combination with the bed-roll of a hide working and scouring machine, the pressure or feed roll E, having its periphery grooved both longitudinally and circumferentially, to form thereon a series of blunt-ended projections, the outer ends of which form sections of a cylindrical surface, substantially as described.
3. In combination with the bed-roll D, the clearer-bar L, provided with the series of adjustable pins *k*, substantially as described.
4. The combination of the roll D, boxes *b b*, the bar L, secured to said boxes, and the adjustable pins *k*, all arranged and adapted to operate substantially as described.
5. The combination of the roll D, the bar L, and the series of short plates M, adjustably secured to said bar, substantially as described.
6. The combination of the roll D, the boxes *b b*, the stop-levers G G, the springs *c c*, and set-screws *d d* and *i i*, all arranged and adapted to operate substantially as described.
7. The combination of the rolls D and E, the boxes *b b* and *e e*, the stop-levers G G, the set-screws *i i*, the treadle I I I', the struts H H, the pivoted arms K, made in two parts and adjustable in length, and the elbow-levers J J, all arranged and adapted to operate substantially as described.
8. In combination with the unhairing and

scouring mechanism, the series of transverse
knife-edged bars N N, forming a grating, to
receive the skin as it falls from the machine
after being operated upon, substantially as
5 described.

In testimony whereof I have signed my name
to this specification, in the presence of two sub-

scribing witnesses, on this 27th day of July,
A D. 1885.

ARTHUR E. WHITNEY.

Witnesses:

N. C. LOMBARD,

WALTER E. LOMBARD.