

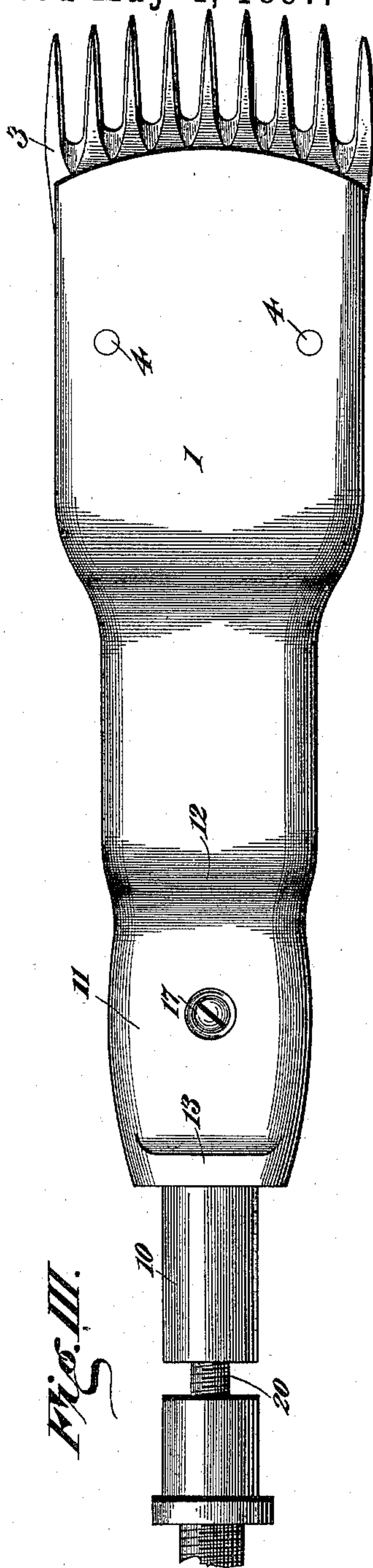
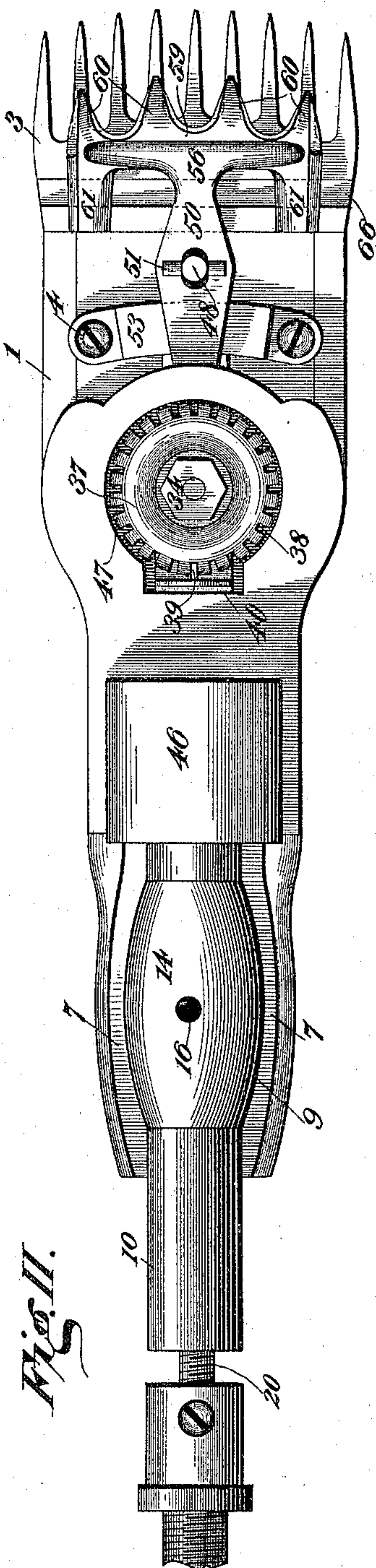
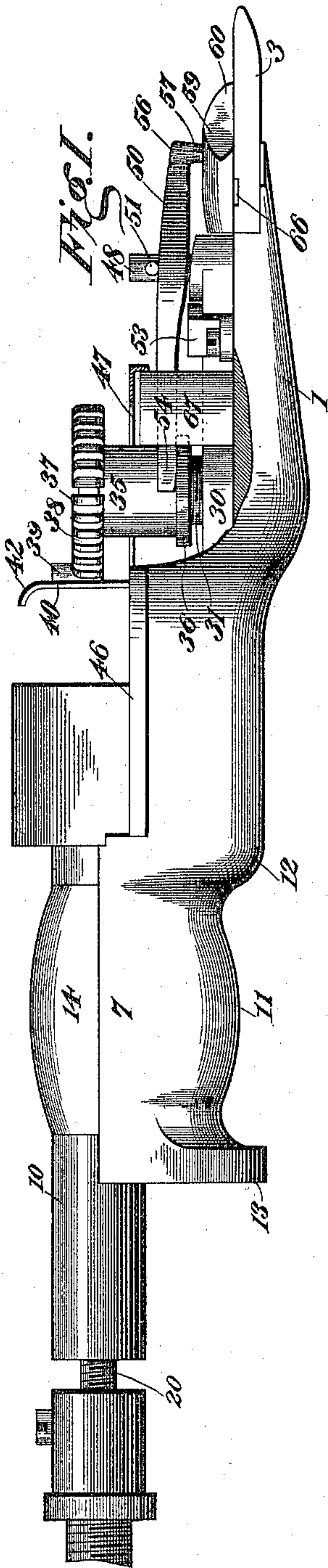
(No Model.)

2 Sheets—Sheet 1.

S. F. ALLEN.
MACHINE FOR SHEARING ANIMALS.

No. 582,031.

Patented May 4, 1897.



Witnesses

M. Fowler
W. M. Allen

Inventor:

Samuel F. Allen

By *Joseph L. Atkins*
Attorney.

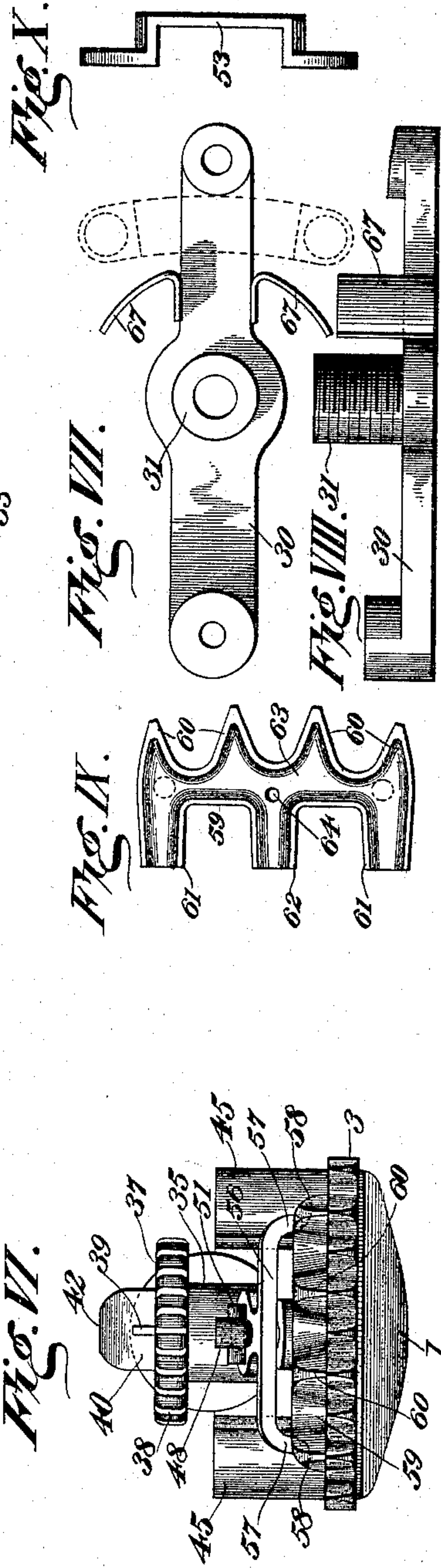
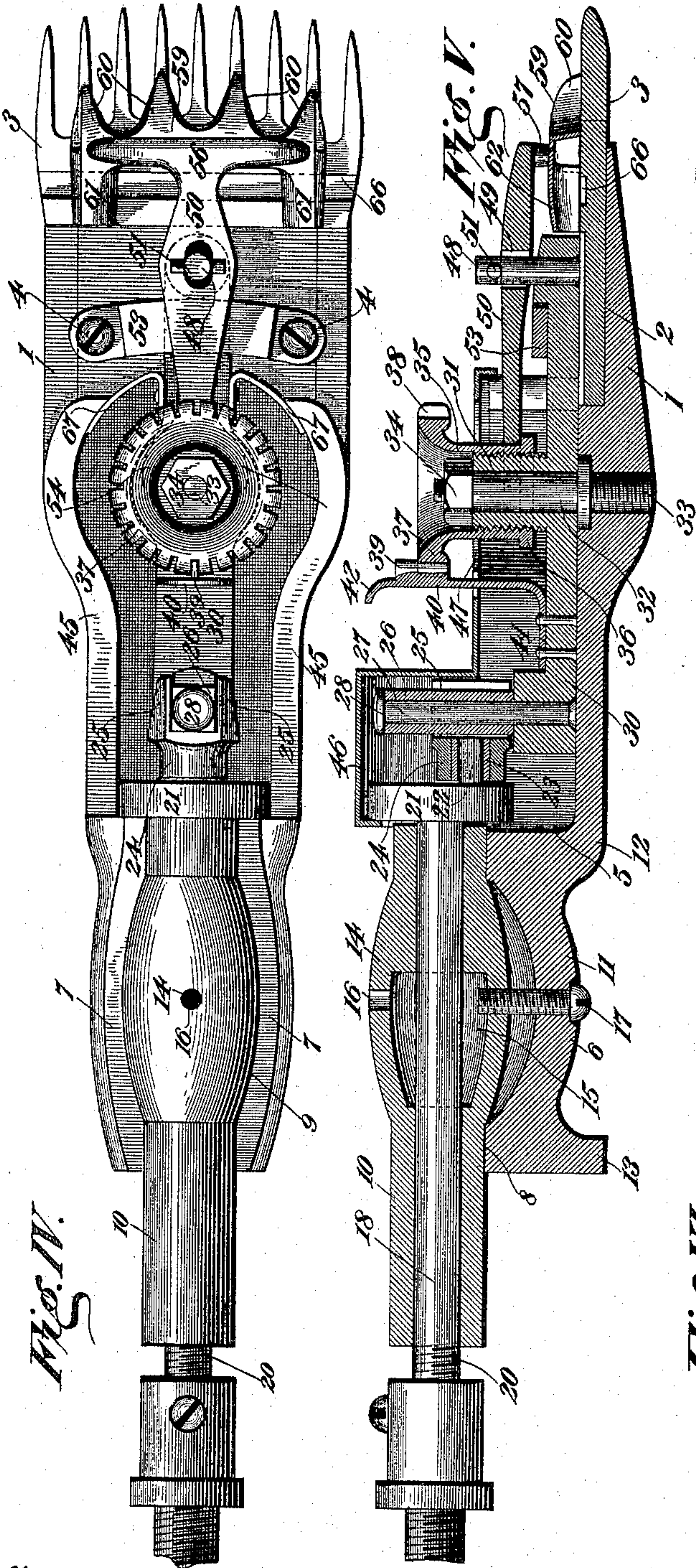
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UNITED STATES PATENT OFFICE.

SAMUEL FENTON ALLEN, OF CHICAGO, ILLINOIS.

MACHINE FOR SHEARING ANIMALS.

SPECIFICATION forming part of Letters Patent No. 582,031, dated May 4, 1897.

Application filed October 22, 1896. Serial No. 609,641. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL FENTON ALLEN, of Chicago, in the county of Cook, State of Illinois, have invented Improvements in Machines for Shearing Animals, of which the following is a complete specification, reference being had to the accompanying drawings.

The object of my invention is to produce improvements in machines for shearing animals which, being adapted to be operated at a high rate of speed, is simple and durable in construction, readily renewable as to the parts which are subject in use to the greatest wear, and which is most readily susceptible of delicate adjustments.

In the accompanying drawings, Figure I is a side elevation of my machine complete. Fig. II is a top plan view thereof. Fig. III is a bottom plan view. Fig. IV is a top plan view with the cap removed. Fig. V is a longitudinal central section of Fig. I. Fig. VI is an end view of the subject-matter of Fig. IV. Fig. VII is a top plan view of the vibrator. Fig. VIII is a side elevation of the vibrator. Fig. IX is a bottom plan view of the cutter detached, and Fig. X is a side view of the bridge detached.

Referring to the figures on the drawings, 1 indicates the bottom plate of the frame of my cutter, which is preferably upwardly inclined upon its lower surface and is rabbeted, as indicated at 2, to accommodate the comb or fixed cutter 3, that is secured to the bottom plate, as by screws 4. The bottom plate is defined from the remainder of the frame by a shoulder or offset 5.

6 indicates the bottom, and 7 the side walls, which constitute the intermediate portion of the frame and which merge into a journal-box seat 8, that is preferably provided with an oblong or elliptical recess 9, adapted to receive a journal-box 10. The contour of the journal-box seat is made to fit the hand of an operator, being curved in its middle part 11 and limited at its opposite extremities by projections 12 and 13. The journal-box is provided with an enlarged elliptical portion 14, designed in part to correspond with the portion 11 of the journal-box seat

and to afford a complete handle for the machine and in part to accommodate a lubricant-chamber 15.

16 indicates an oil-hole for supplying the lubricant-chamber with oil or the like. The journal-box is secured to the seat 8 by a single round-headed screw 17, which affords ready and convenient means for separating the journal-box from its seat whenever required.

The journal-box is coextensive with and completely incases a shaft 18, which is provided at one end with means, as, for example, screw-threads 20, for attaching it to a flexible shaft or the like (not illustrated) and at the other end with a crank-head 21. The crank-head is provided with a fixed eccentric stud-pin 22, upon which is loosely mounted, preferably upon an intermediate renewable steel bushing 23, a carrier-head 24. The carrier-head terminates in jaws 25, defining in the carrier-head a square recess which fits a square friction-sleeve 26, loosely mounted upon a carrier-stud 27. The stud is provided at its upper end with a head 28 and is fixed at its lower end in a vibrator 30. The vibrator in its middle part is provided with a preferably integral externally-screw-threaded sleeve 31 and a bore concentric with the sleeve, which affords a bearing for the vibrator upon a stud-pin 32. The pin 32 is secured to the rear end of the bottom plate 1, as by a screw-threaded extremity 33, and is provided upon its opposite end with a nut 34, that serves to secure the vibrator movably upon it.

Upon the sleeve 31 I provide an internally-screw-threaded tension thumb-nut 35. It is provided upon its lower end with an annular flange 36 and at the opposite end with a flared head 37. The periphery of the head 37 is provided with notches 38, with which engages the tooth 39 of a spring 40, secured, as indicated at 41, to the vibrator, and which, projecting upwardly, terminates in a curved end 42, whereby an operator may conveniently retract it, so as to disengage the tooth 39 from a notch of the thumb-nut 35.

The side walls 7 terminate in their forward ends with curved sections 45. The sections

45 are curved concentrically with the pin 32, and with the sides 7 constitute a casing for the vibrator and connected mechanism.

46 indicates a cap, which is preferably made of sheet metal, and which, covering the top of the casing, completes the protection afforded thereby to the mechanism contained therein. The cap is provided with an aperture 47, through which projects the head of the thumb-nut 35 and the end 42 of the spring 40.

Upon its forward extremity the vibrator is provided with a stud-pin 48, which enters an oblong aperture 49 in a tension-lever 50, the tension-lever being secured to the pin, as by a cotter-key 51, passing through an aperture near its upper end. That end of the vibrator last referred to is confined by a bridge 53, that is secured to the frame of the machine, preferably by the screws 4, which also serve to unite the comb to the bottom plate 1, as previously described.

The lever 50 is preferably slightly curved, as illustrated, for example, in Fig. V, and is provided with a bifurcated rearward extremity defined by legs 54. The interior contour of the legs is curved to fit the exterior of the thumb-nut 35, so that through the movement of that nut engagement between the legs and the flange 36 may be made to produce tilting movement of the tension-lever 50 upon its pin 48.

The forward end of the tension-lever is provided with an arched cross-head 56, whose opposite extremities carry downwardly-projecting pins 57. The pins 57 respectively enter apertures 58 in the opposite sides of a movable cutter 59. By that means the cross-head 56 presses the movable cutter against the face of the comb with a tension controllable through the engagement of the flange 36 upon the thumb-nut 35 with the bifurcated end of the lever 50, as previously specified.

The cutter 59 is provided upon its forward end with cutting-teeth 60 and opposite thereto with rearward projections, which prevent tilting or wedging apart of the movable cutter from the fixed cutter in use. I prefer to employ in that connection lateral projections 61 and a medial projection 62.

Upon the bottom of the cutter 59, in its face next to the comb, I prefer to employ a ramified channel 63, extending underneath the entire surface of the cutter, its teeth, and projections, and, communicating therewith, an oil-hole 64. In the opposing face of the comb I provide an arc-shaped channel 66.

The employment of the complementary channels in the opposing faces of the cutters in connection with the oil-hole in the cutter affords means for efficiently introducing a lubricant between the working faces of the cutters.

Upon the forward end of the vibrator I prefer to provide wings 67, which, working against the inner faces of the curved sections 45, com-

pletely close the forward end of the casing and serve to exclude therefrom any deleterious substance.

The operation of my machine is as follows: Power being applied to the shaft 8 motion is communicated through the same to the crank-head 21, which, through it, by means of the carrier-head 24, secured eccentrically thereto, the sleeve 26, and pin 27, imparts motion to the vibrator 30. By reason of the construction and relation of the parts which connect the crank-head to the vibrator friction and wear are not only reduced to a minimum, thereby facilitating the operation of the machine at a high rate of speed, but especially through the relative movement of the carrier-head 24 and the sleeve 26 the change in direction of the motion of the vibrator is rendered less abrupt than in machines of this class in general use. By this means the strain upon the machine through the rapid movement of the vibrator in opposite directions is materially reduced.

In practice by turning the square sleeve 26 a quarter of a revolution as it becomes worn a new wearing-surface may be presented to the carrier-head, thereby increasing its durability.

The employment of the tension-regulating mechanism operating in the manner already described facilitates the regulation of the tension to take up wear or to adjust the parts to the work which the machine has to do and also afford means for quickly and conveniently renewing the movable cutter when required.

Although my machine properly belongs to that class which are operated at a high rate of speed, yet its simplicity and adjustability of construction are such that it can be operated effectively and economically at a considerably lower rate of speed than that which is necessary for the operation of other machines of its class.

What I claim is—

1. In a shearing-machine the combination with a frame open upon one side and a driving-shaft, of a removable journal-box for the driving-shaft secured within the open side of the frame, the journal-box and the frame being of such configuration as together to form a handle, substantially as set forth.

2. In a shearing-machine, the combination with a frame having a hand portion with an open recess on one side, of a driving-shaft, a journal-box for the shaft, shaped to fit the recess in the frame, and having an enlarged portion in which is formed a lubricant-chamber, and means for securing the journal-box in place, substantially as set forth.

3. In a shearing-machine the combination with a frame and removable journal-box seat in one side thereof, of a journal-box partially embedded within the seat, and a screw adapted to unite the journal-box to the frame, substantially as set forth.

4. In a shearing-machine the combination of a frame and journal-box seat therein having its exterior contour fitted to the hand of an operator, of a removable journal-box secured and partially embedded within the seat, said journal-box being provided with an enlarged portion adapted to fit the hollow of the hand of an operator, and to complete the handle of the machine, substantially as set forth.

5. In a shearing-machine the combination with a frame, driving-shaft, and a cutter-actuating member, of a crank-head on the driving-shaft, an eccentric carrier-head loosely carried thereby, a pin upon the actuating member, and jaws upon the carrier-head which the pin enters, substantially as set forth.

6. In a shearing-machine the combination with a frame, driving-shaft and crank-head thereon, of a movable actuating member secured to the frame, a pin upon said member, a square sleeve loosely mounted upon the pin, an eccentric carrier-head upon the crank-head, and jaws upon the carrier-head engaging and fitting the square sleeve, substantially as set forth.

7. In a shearing-machine, the combination with a frame, of a pivoted vibrator, provided with a screw-threaded projection, 31, a tension-lever pivoted on the vibrator, and a nut mounted on the said projection and engaging with the tension-lever, whereby the latter may be adjusted, substantially as set forth.

8. In a shearing-machine, the combination with the frame, of a pivoted vibrator, provided with a screw-threaded projection, 31, driving mechanism for the vibrator, a movable cutter, a tension-lever pivoted on the vibrator and bearing on the movable cutter, and con-

stituting the connection between the vibrator and the cutter, and a nut mounted on the projection, 31, and engaging with the tension-lever, substantially as set forth.

9. In a shearing-machine, the combination with a frame, vibrator, and tension-lever, secured thereto, of a threaded sleeve upon the vibrator, a notched thumb-nut screwing upon the sleeve, and adapted to engage with the tension-lever, and a spring secured to the vibrator provided with a tooth adapted to engage with the notches of the nut, substantially as and for the purpose specified.

10. In a shearing-machine, the combination with a frame, vibrator, and driving mechanism, of a tension-lever movably secured to the vibrator, a bifurcated end upon the lever, an externally-threaded sleeve upon the vibrator, a nut screwed upon the sleeve, a flange upon the nut adapted to engage the bifurcated end of the tension-lever, and means for fixing the adjustment of the nut, substantially as set forth.

11. In a shearing-machine, the combination with a frame, vibrator, and driving mechanism, of side walls upon the frame constituting a casing for the vibrator and driving mechanism, a cap fitting upon the side walls, and wings secured to the vibrator and working against the inner faces of the side walls at their forward open ends, substantially as set forth.

In testimony of all which I have hereunto subscribed my name.

SAMUEL FENTON ALLEN.

Witnesses:

HENRY P. BOETTCHER,
SAMUEL W. ALLEN.