

No. 862,949.

PATENTED AUG. 13, 1907.

J. J. VALLIERE.
SHEARING MACHINE.
APPLICATION FILED DEC. 26, 1906.

2 SHEETS—SHEET 1.

Fig. 1,

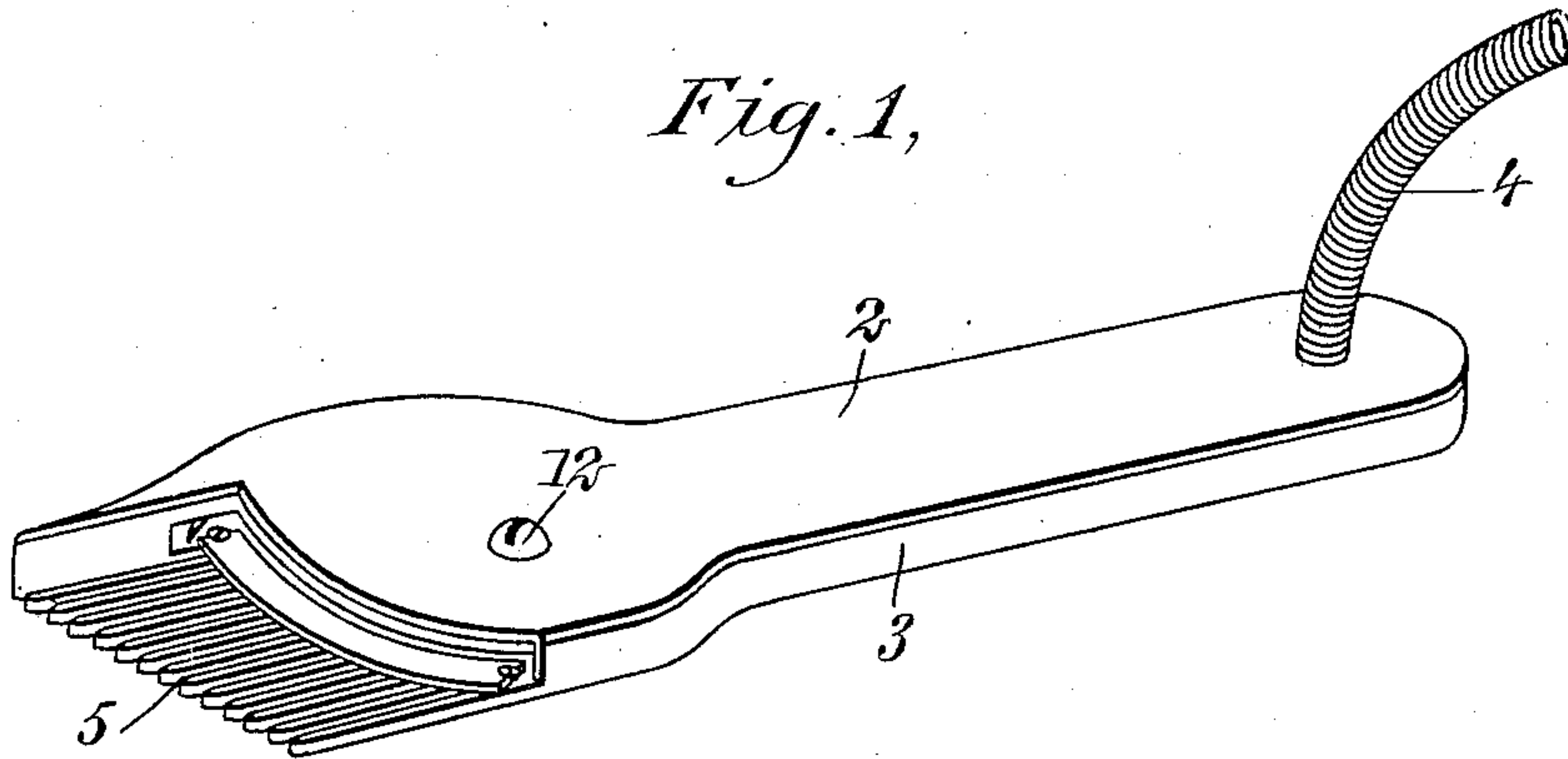


Fig. 2,

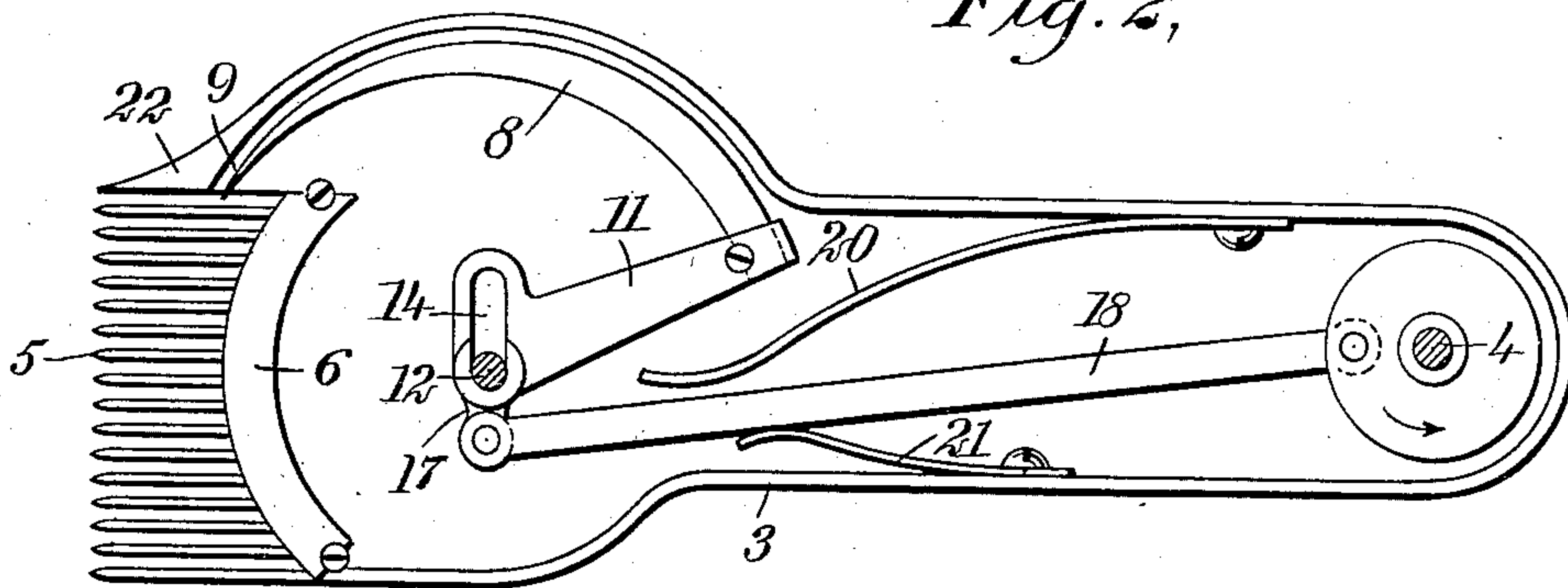
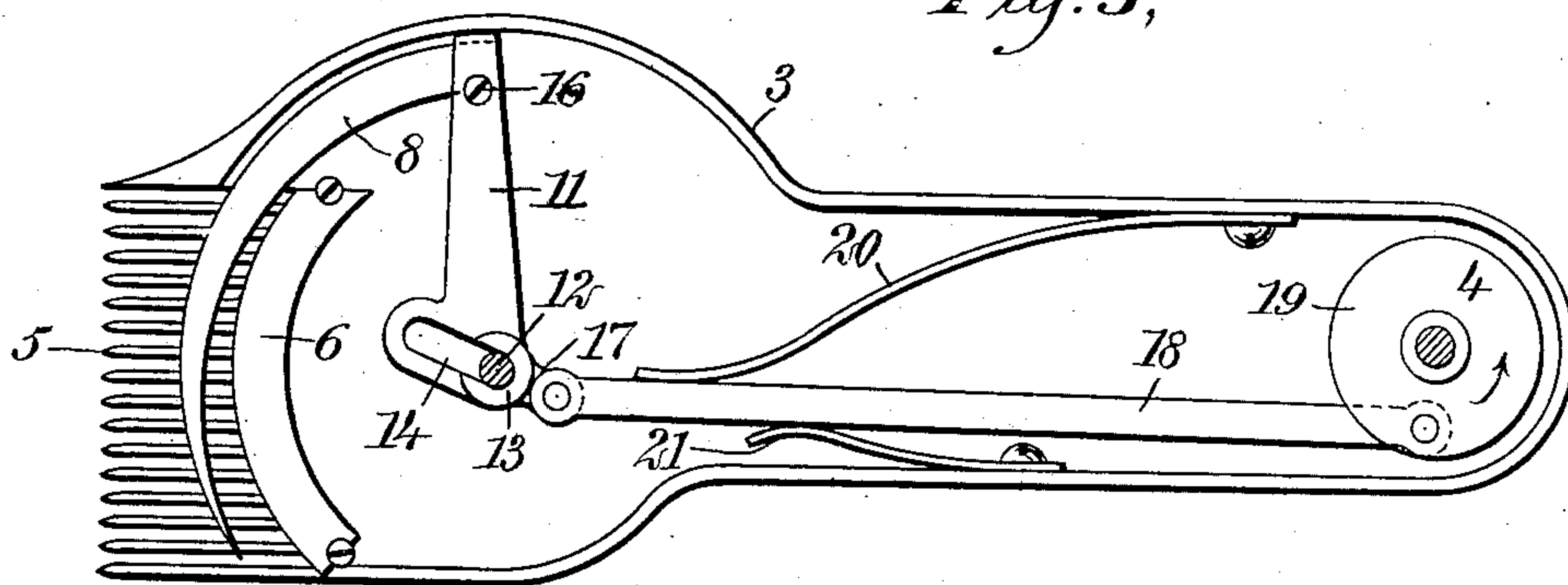


Fig. 3,



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4.

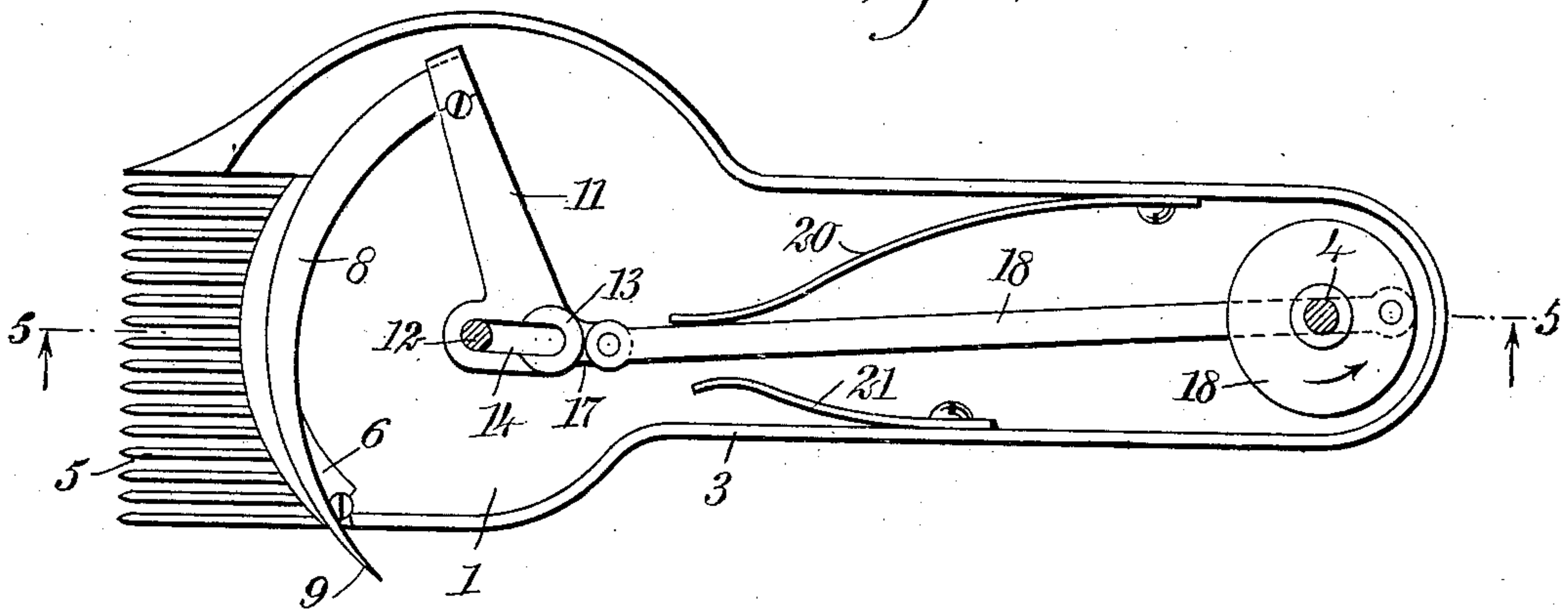


Fig. 5.

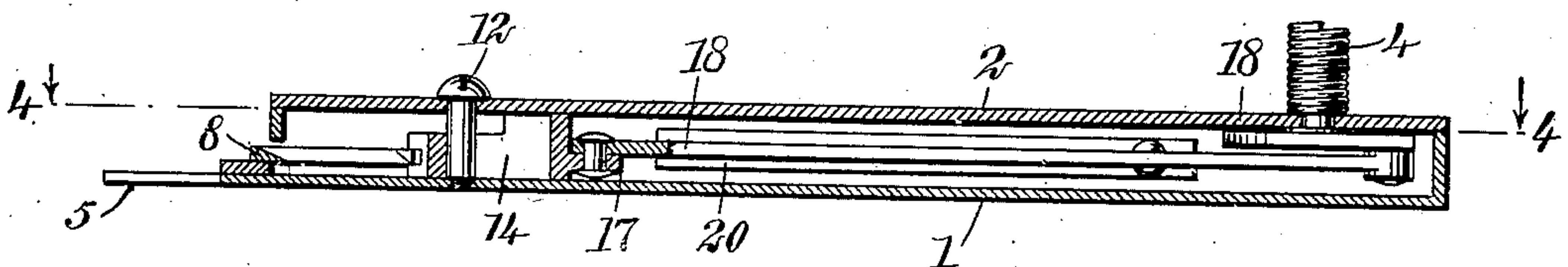


Fig. 6.

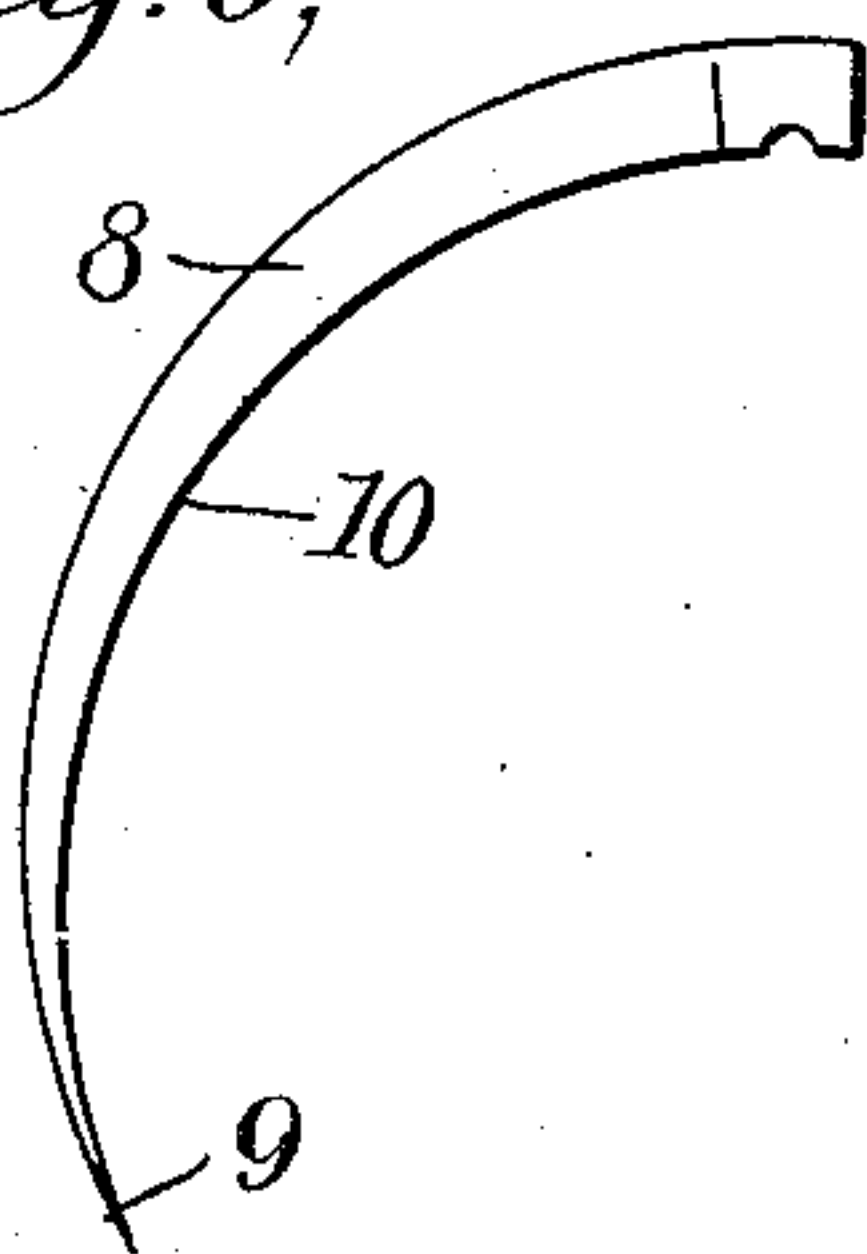


Fig. 7.

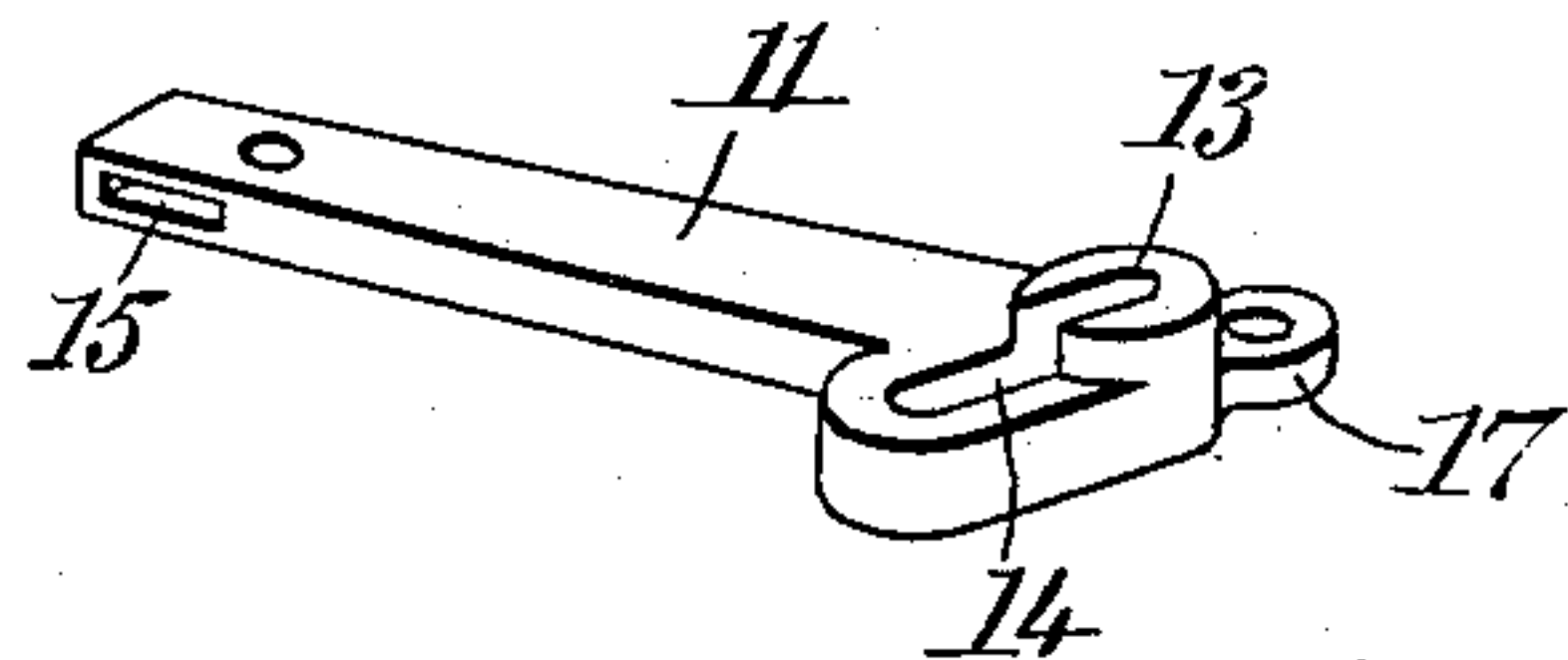
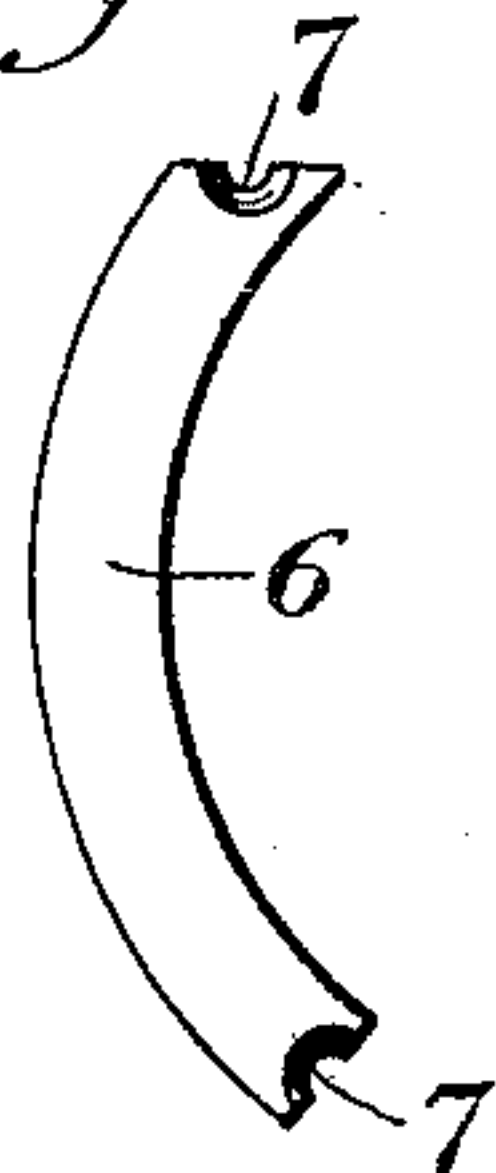


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN J. VALLIERE, OF FAIR OAKS, CALIFORNIA.

SHEARING-MACHINE.

No. 862,949.

Specification of Letters Patent.

Patented Aug. 13, 1907.

Application filed December 26, 1906. Serial No. 349,451.

To all whom it may concern:

Be it known that I, JOHN J. VALLIERE, a citizen of the United States, and a resident of Fair Oaks, in the county of Sacramento and State of California, have invented a new and Improved Shearing-Machine, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in shearing machines, and the object thereof is to provide means whereby one of the cutting members is moved in a curve to a position substantially parallel to the other cutting member before the two are brought together. Thus the curved cutting member serves not only to sever the material being cut, but also serves to draw the same into the comb.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, in which

Figure 1 is a perspective view of my improved shearing machine; Fig. 2 is a section taken just below the cover plate of the machine and showing the cutting member about to begin the cutting stroke; Fig. 3 is a view similar to Fig. 2, but showing the cutting member in its outermost position; Fig. 4 is a view similar to Figs. 2 and 3, but showing the cutting member at the completion of the cutting stroke, said view being taken on the line 4—4 of Fig. 5; Fig. 5 is a central longitudinal section taken on the line 5—5 of Fig. 4; Fig. 6 is a plan view of the movable cutting member; Fig. 7 is a perspective view of the supporting arm for the movable cutting member; and Fig. 8 is a view of the stationary cutting member.

In the specific embodiment of the device which is illustrated in the accompanying drawings, my invention involves a casing having a bottom plate 1 and a removable top plate 2 parallel thereto. The bottom plate 1 carries side walls 3, upon the edges of which the top plate 2 rests. Within the casing formed by the top, bottom, and side plates is inclosed the operating mechanism deriving its power from a flexible shaft 4 or other means entering the casing at one end, while at the opposite end of the casing is located the cutting members and the comb. The comb 5 is formed of a plurality of teeth extending outward from the end of the casing and substantially in alinement with the bottom plate 1 thereof. These teeth may be formed either integral with the base plate 1, as shown, or they may be formed from a separate piece and secured to the bottom member 1 in any suitable manner. At the base of the teeth and at the open end of the casing is located the stationary cutting member 6, which is formed of a curved piece of metal having a flat upper surface upon which the movable cutting member rests, and having a sharp well-defined angle at its outer edge coöperating with the movable cutting member

to sever the material. This member may be secured in place in any suitable manner, but is preferably provided with two countersunk screw-bolts 7 at or adjacent its ends by which it is rigidly secured to the base plate 1. The movable cutting member 8 is curved in the arc of a circle and its outer end is brought to a very sharp point 9. One side of this cutting member is preferably flat and is adapted to slide over the stationary cutting member, while the upper surface is beveled so as to present a sharp cutting edge 10. The cutting member 8 is secured to and carried by an arm 11, pivoted within the casing and of a length substantially equal to the radius of a circle in the circumference of which the curved cutting member 8 would lie.

The bottom and top plates 1 and 2 are secured together by a screw-bolt 12 which extends through an opening in the end of the arm 11 and serves as a pivot pin for said arm. A portion 13 of the arm around this opening is of a thickness substantially equal to the distance between the inner and outer plates, so as to hold the cutting member from movement other than in the same plane, while the remaining portion of the arm is of any desired thickness. The opening 14 through which the pivot pin 12 extends is elongated so as to permit a lateral movement of the arm 11 and the curved cutting member. The cutting member is secured to the outer end of the arm 11 in any suitable manner, preferably by being inserted through an opening 15 in the arm and secured therein by a screw passing through the edge of the cutting member. The pivoted end of the arm 11 is provided with a projection 17 to which is pivoted the operating pitman 18, the opposite end of which is pivoted adjacent the circumference of a wheel 19 carried by the main drive shaft 4. The length of the projection 17 is considerably less than the distance from the center of the wheel 19 to the point at which the pitman 18 is secured, while the slot 14 in the inner end of the arm is substantially equal to said distance. Within the casing and pivoted to the side walls 3 are two springs 20 and 21 which bear against the pitman 18 and control its lateral movement.

For guiding the machine while in operation I preferably provide a finger 22, having one side extending parallel with the teeth of the comb, and having the other side curving outward and forming a portion of the side wall 3. This finger serves to press the material which is not in the path of the comb toward one side and out of the way, so that a straight cut may be made. The outer tooth at the opposite end of the comb is in alinement with the side of the machine, so that the operator may cut as close as desired upon any angular surface.

In the employment of my improved shearing machine the shaft 4 is connected to any suitable source of power and continuously rotated in the direction indi-

cated by the arrow in Figs. 2, 3 and 4. Starting with the parts in the position shown in Fig. 2, the spring 21 bears against the pitman 18 and forces the arm 11 to the position shown, namely, with the pivot pin 12 at the inner end of the slot 14. As the wheel 19 rotates to the position shown in Fig. 3, the spring 21 maintains the pivot pin 12 and the slot 14 in the same relative position, while the longitudinal movement of the pitman causes the curved cutting member to swing around into the position shown in Fig. 3. In this position the projection 17 and the pitman 18 are very nearly in alinement, but the pitman 18 extends substantially at right angles to a line through the shaft 4 and the point of connection between said pitman and the wheel 19. Upon further rotation of the wheel 19, it is evident that the pitman 18 is drawn still further toward the end of the casing, and as the projection 17 is not long enough to fully accommodate for this movement, the arm 11 is moved in a lateral direction to the position indicated in Fig. 4, in which the pivot pin 12 is at the outer end of the slot 14. This movement causes the curved cutting member to be drawn in toward the stationary cutting member and causes the severing of the material projecting through the comb and between the cutting members. As the pitman 18 passes the dead center of the wheel 19, it is brought out of engagement with the spring 21 and into engagement with the spring 20, so that further movement causes the simultaneous withdrawal of the curved cutting member 8 into the casing and the forcing of the pivot pin 12 to the inner end of the cutting member, to the position shown in Fig. 2, from which position the motion above described is repeated. The spring 20 prevents the projection 17 and the pitman 18 from passing beyond the line of centers through the shaft 4 and the pivot pin 12, so that as soon as the pivotal point of the pitman 18 and wheel 19 passes the center from the position shown in Fig. 4, the spring 20 prevents the cutting device from further rotation around the pivot pin 12 and causes it to be withdrawn into the casing.

The operating mechanism above described serves to give the movable cutting blade 8 a motion similar to the swinging of a sickle. The blade moves first around the arc of a circle and then is drawn in toward the center of the circle and in engagement with the stationary cutting member 6, whereby the material is severed. The lower or stationary cutting member 6 is supported upon the base plate 1, and the vertical front edge which it presents is of a sufficient height to prevent the flesh which may rise slightly between the teeth of the comb, from coming into engagement with the edges of the cutting members.

The device is very simple in its operation and very efficient in the shearing of animals of various kinds, as, for instance, sheep, horses, goats, and the like.

Various changes may be made in the specific details of the machine without departing from the spirit of my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A shearing machine, comprising a stationary cutting member, a movable cutting member, and means for moving said last mentioned cutting member longitudinally into a position substantially parallel to the first mentioned cutting member and then bringing it into engagement with said member.

2. A shearing machine, comprising a comb, a stationary cutting member adjacent the base of said comb, a curved cutting member, and means for moving said curved cutting member into a position substantially parallel with said stationary cutting member and then bringing it into engagement with said member.

3. A shearing machine, comprising a casing, a stationary cutting member adjacent one end of said casing, a second cutting member, and means for moving said last mentioned member out of said casing into a position substantially parallel to the first mentioned cutting member and then moving it into engagement with said cutting member.

4. A shearing machine, comprising a curved stationary cutting member, a curved pointed movable cutting member, and means for moving said last mentioned cutting member first in the arc of a circle and then into engagement with the first mentioned cutting member.

5. A shearing machine, comprising a comb, a curved stationary cutting member adjacent the base of said comb, a curved movable cutting member, and means for moving said last mentioned cutting member in the arc of a circle and then radially into engagement with the stationary cutting member.

6. A shearing machine, comprising a curved cutting member, an arm secured to one end of said cutting member and supporting the same, a pivot pin to which the opposite end of said arm is secured, and means for moving said arm around said pivot as a center and then moving said arm laterally in respect to said pivot.

7. A shearing machine, comprising a stationary cutting member, a curved cutting member, an arm secured to the end of said curved cutting member and having a slot in its opposite end, a pivot pin extending through said slot, and means for turning said arm upon said pivot pin as a center and then moving said arm laterally in respect to the pivot pin.

8. A shearing machine, comprising a stationary cutting member, a curved pointed cutting member having an arm secured to one end of said member and at an angle thereto, said arm being provided with a slot in its opposite end, a pivot pin extending through said slot, and means for turning said arm about said pivot pin while maintaining said pin at one end of the slot, and then moving said arm laterally whereby the pin is brought to the opposite end of the slot.

9. A machine of the class described, comprising a stationary cutting member, a movable cutting member, an arm secured to the movable cutting member and having one end thereof provided with a slot, a pivot pin extending through said slot, and means secured to said arm for rotating said arm about said pivot pin and moving the arm to bring the pivot pin to the opposite end of the slot.

10. In a device of the class described, a stationary cutting member, a movable cutting member, an arm secured to said last mentioned cutting member, a pitman pivotally connected to said arm, a rotating wheel connected to the opposite end of said pitman, and means for supporting said arm whereby the movable cutting member is given a longitudinal and also a lateral movement by the rotation of the wheel.

11. In a device of the class described, a movable cutting member, an arm carried thereby, a rod pivotally connected to said arm and having its opposite end pivotally connected to a rotating member, and means for supporting said arm whereby it may rotate and also move in a lateral direction.

12. In a device of the class described, a stationary cutting member, a curved cutting member, an arm secured thereto, a rod pivotally connected to said arm and having its opposite end secured to a rotating member, springs in engagement with the sides of said rod, and means for supporting said arm whereby the cutting member is moved longitudinally and also laterally in respect to the stationary cutting member.

13. In a device of the class described, a stationary curved cutting member, a movable curved pointed member, an arm secured to the end of said last mentioned member, said arm having a slot in one end thereof extending radially in respect to the movable cutting member, a rod connected to said arm, and in alinement with said slot, and a rotating member secured to the opposite end of said rod whereby as motion is imparted to the rotating member the movable

cutting member is brought to a position substantially parallel to the stationary cutting member and then brought into engagement with said member.

14. In a device of the class described, a comb, a stationary cutting member adjacent the base of said comb, a curved movable cutting member, an arm connected to said movable cutting member and at substantially right angles thereto, a slot in said arm extending radially in respect to the curved cutting member, a pivot pin extending through said slot, a rod connected to said arm and in alinement

with said slot, and means connected to said rod, whereby the curved cutting member is moved first in the arc of a circle and then into engagement with the stationary cutting member.

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

JOHN J. VALLIERE.

Witnesses:

THOS. P. McELDOWNEY,
ALBERT M. RICH.