

(No Model.)

2 Sheets—Sheet 1.

J. A. MILLIKEN.
CLIPPING MACHINE.

No. 558,973.

Patented Apr. 28, 1896.

Fig 1

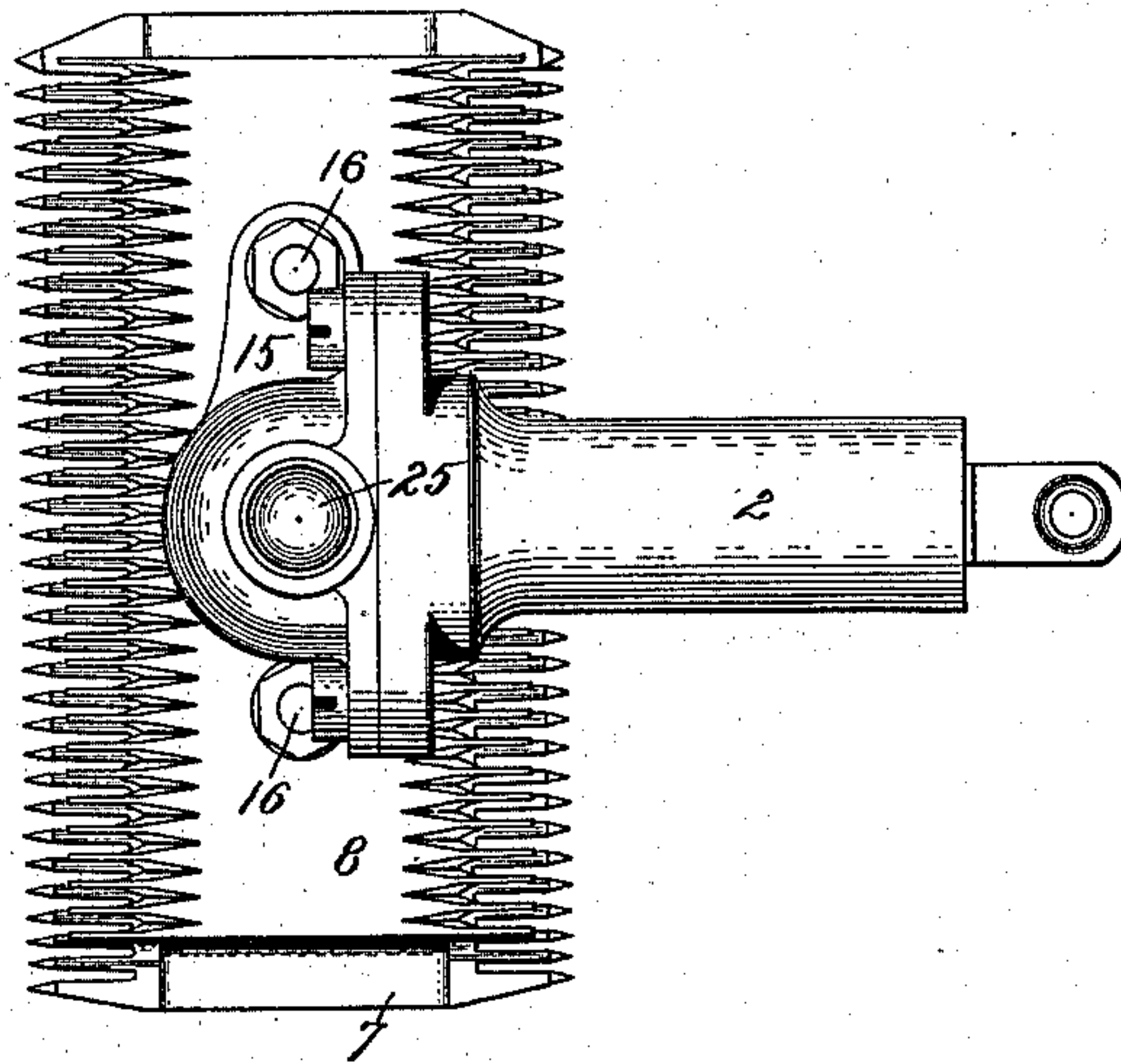
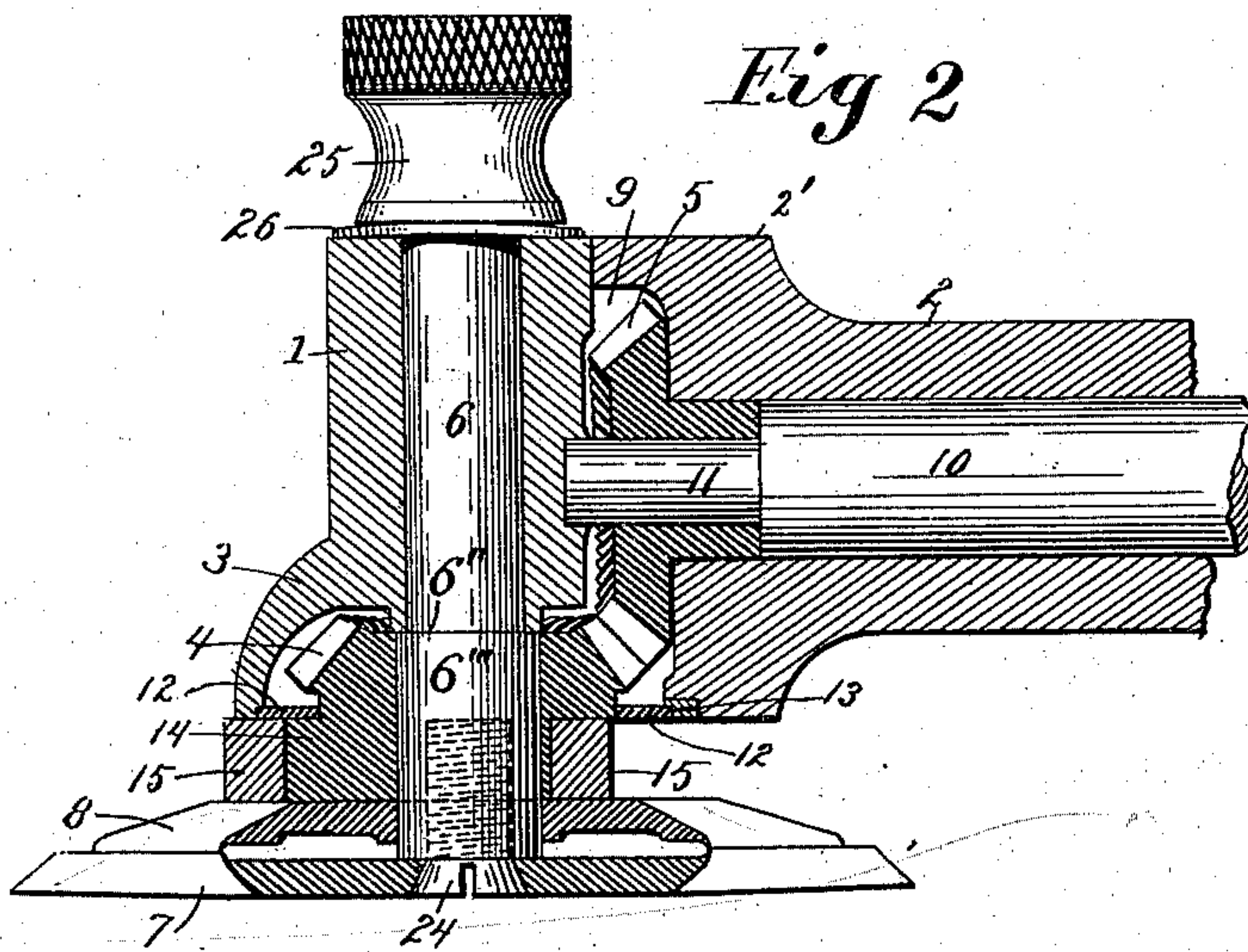


Fig 2



WITNESSES:

C. C. Burdine
J. B. Owens.

INVENTOR

John A. Milliken

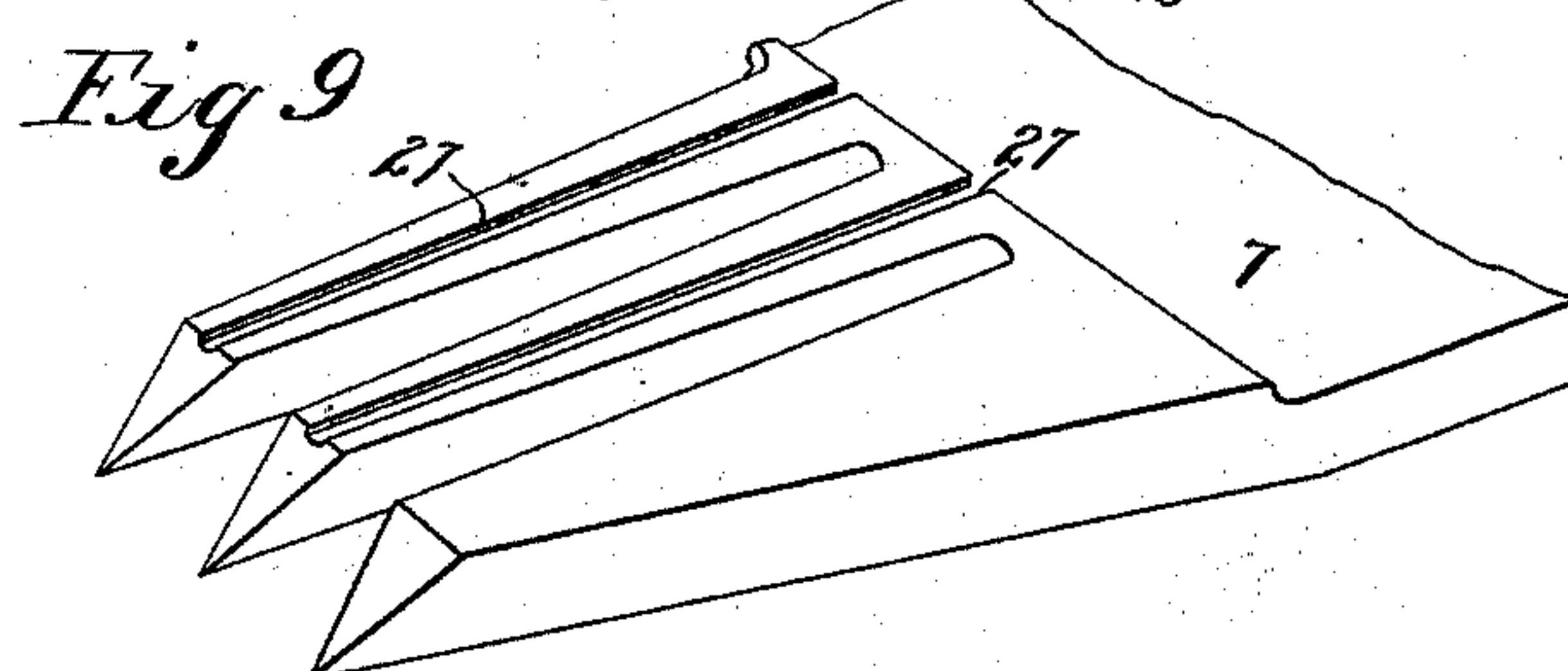
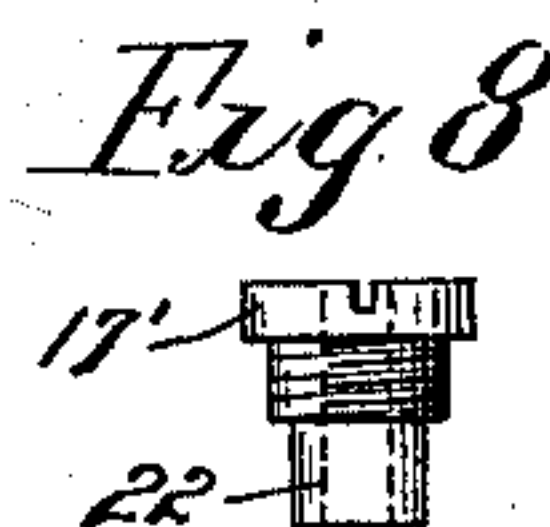
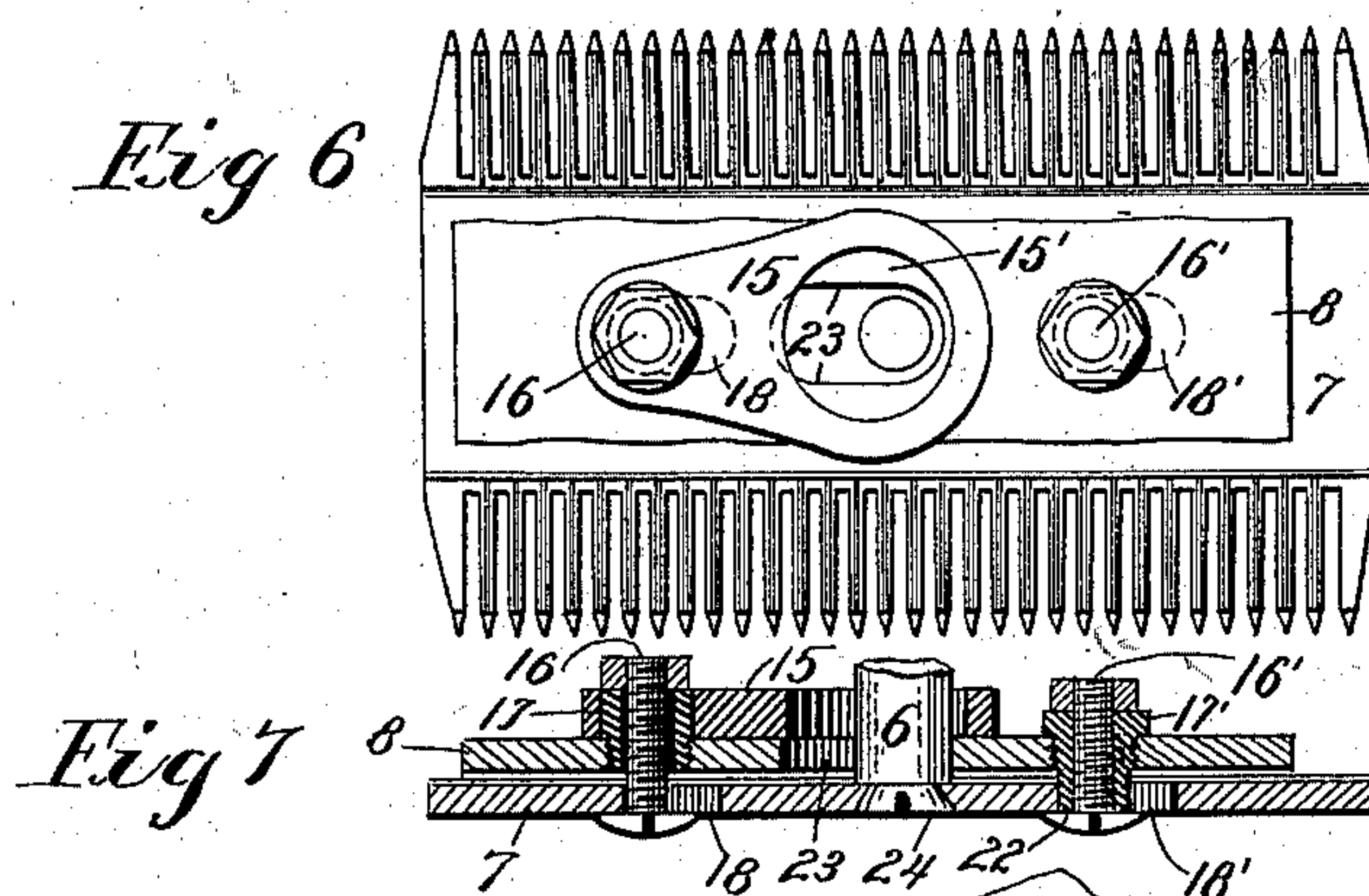
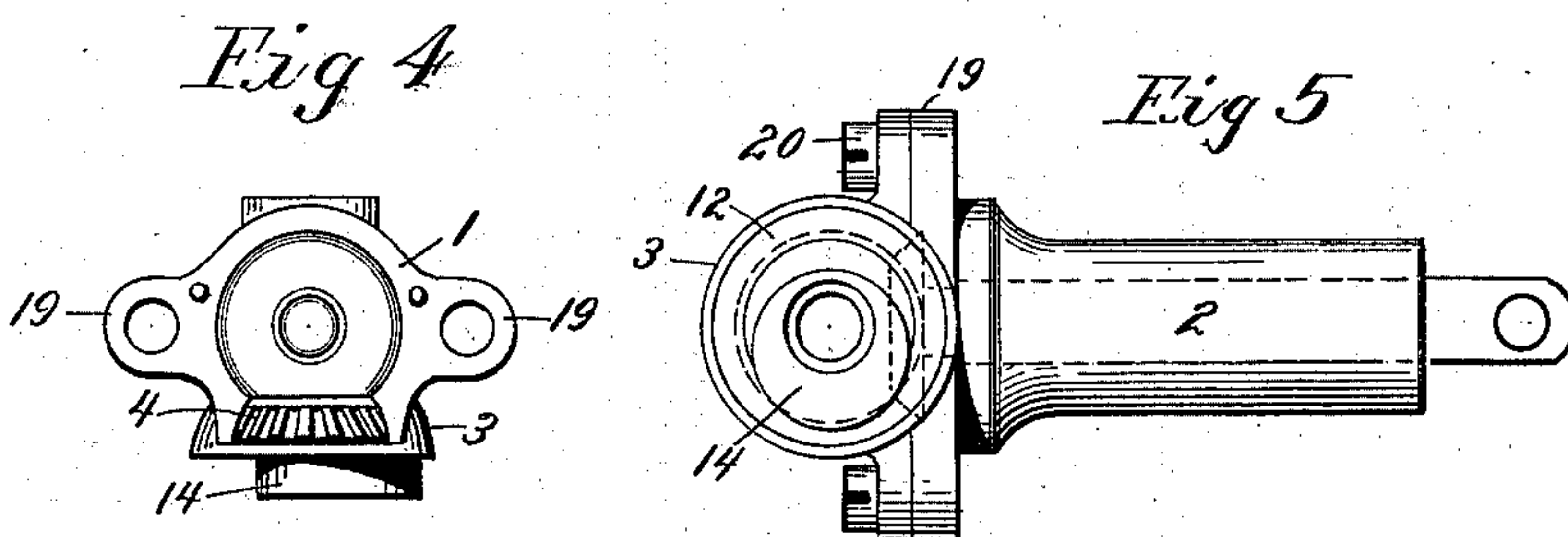
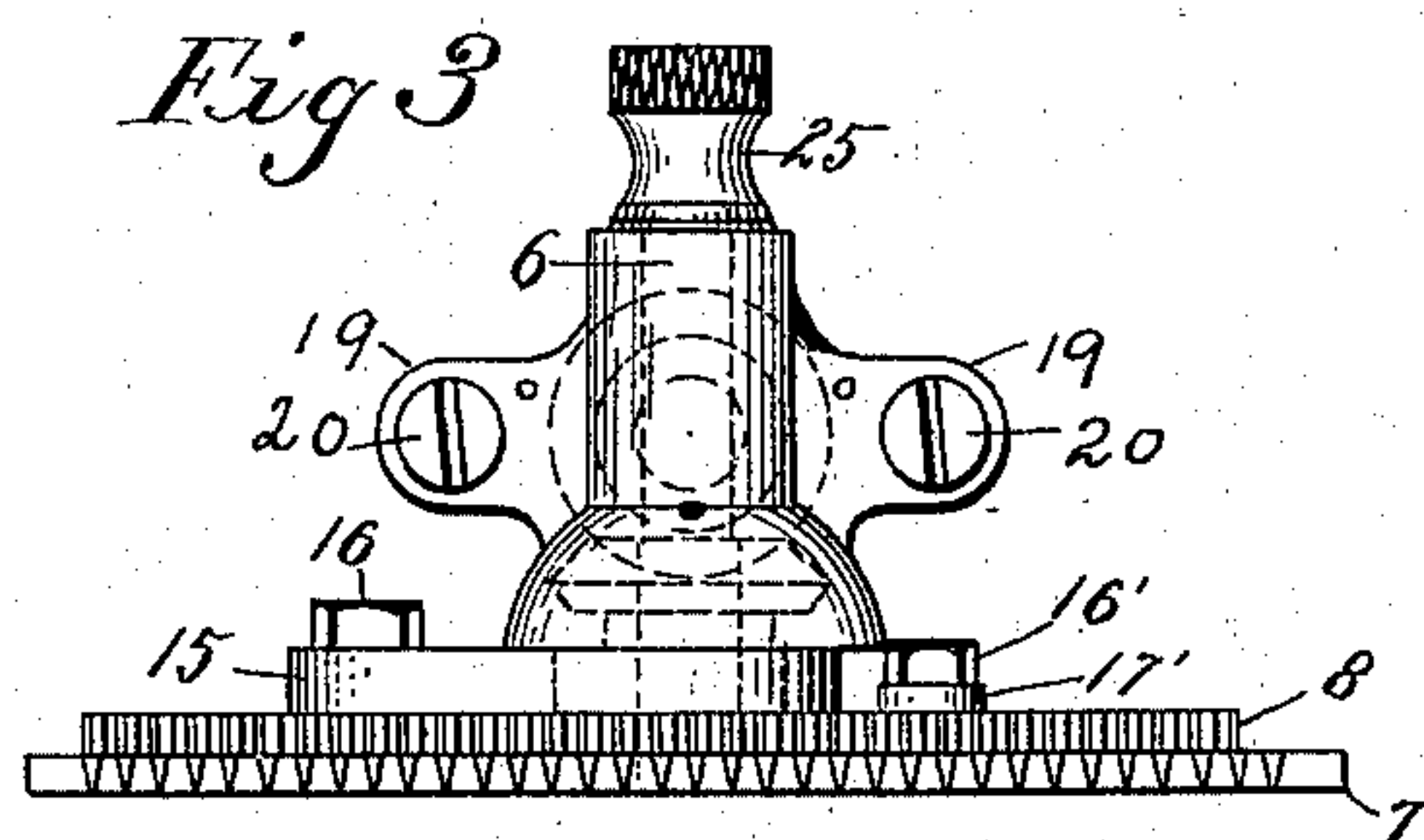
BY

Lawrence D. Boyer
ATTORNEYS,

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WITNESSES:

C. C. Burlingame
J. B. Owens.

INVENTOR
John A. Milliken
BY
D. J. Boist & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN A. MILLIKEN, OF BROOKLYN, NEW YORK.

CLIPPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 558,973, dated April 28, 1896.

Application filed February 21, 1893. Serial No. 463,147. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. MILLIKEN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Clipping-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to that class of clippers in which one of the cutting-blades has a reciprocating movement in contradistinction to those machines employing a rotary blade; and the several objects of my invention are to provide a machine of this particular class which will be more cheap and simple in construction; to tightly house the driving mechanism against the entrance of dirt and hair; to pivot or hang the cutting-blades so that they will swing in the arc of a complete circle and can be turned to cut sidewise as well as backward or forward in relation to the handle portion; to render the machine or tool more compact and light, and consequently more convenient to handle and manipulate in the cutting operation, and to so construct the whole as to enable it to be easily, quickly, and conveniently taken to pieces for repairs and put together again.

To accomplish these several ends, my invention consists more particularly in the peculiar construction of the housing and its position in relation to the knives, the mechanism for driving the latter, the adjustability of the knives, together with the other novel features and combinations more fully described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a top or plan view of the exterior of my complete invention; Fig. 2, a vertical section in which some of the parts are left in elevation; Fig. 3, a front elevation; Fig. 4, a detail rear view of the front section of the casing which contains the horizontal bevel gear-wheel, to the bottom of which the eccentric drive-cam is attached; Fig. 5, a detail bottom view of the casing and drive-cam; Fig. 6, a top view of the knives, the link connec-

tion, the driving-gear, and the cam, the teeth of the reciprocating blade being removed; Fig. 7, a longitudinal vertical section through the preceding figure, a portion of the central bolt being shown in full; Fig. 8, a detail view of one of the bushings; Fig. 9, a detail perspective view of the construction of the teeth of the fixed bottom knife.

The reference-figures 1 and 2 constitute, respectively, two separable sections disposed at right angles to each other and composing the housing for the driving mechanism and its immediate connections. The section 1, which for convenience will be termed the "head-section," is enlarged at its base to form a dome-shaped chamber 3 for the reception of the lower beveled gear 4, and its upper portion is made cylindrical and centrally bored to receive a bolt or pivot 6, on which the said gear revolves and to the lower end of which the usual fixed blade or comb-plate 7 is attached. The functions of this bolt or pivot will be described more fully hereinafter. The sections are held tightly together by means of ears 19, to which screws 20 are applied. The forward end of the section 2, which for convenience will be termed the "handle-section," is also provided with an enlargement 2', in which is formed a chamber 9, the remainder of the section being made cylindrical to form a handle and bored longitudinally to receive a drive-shaft 10, which extends substantially at right angles to the bolt 6.

A bevel-gear 5, meshing with gear 4, is fixed to the reduced end 11 of the shaft, revolving in a cavity in the side of the front section 1.

Dust is excluded from the gear-chambers by means of a thin flat ring 12, snugly embracing the body of the lower gear 4 and fitting neatly within a circular rabbet 13 in the bottom of the casing, so that its exterior will lie flush with the under surface of the housing and fit tightly upon the top of an eccentric 14, which eccentric serves to retain it tightly in place. This eccentric is fixed to revolve with the lower gear, and actuates the reciprocating blade 8 through the medium of a link 15, the free end of which is provided with a circular opening 15', made to receive and exactly fit the eccentric, as better seen in Figs. 5 and 6. The link is hinged to a bolt, fixed to move with the reciprocating blade, a bushing 17 being placed around the bolt to form a smooth connection for the link. This

bushing is screwed fast into a hole in the blade, and the bolt passes down through an oblong slot 18 in the fixed blade 7. The lower end of the bolt is provided with a slotted head to receive a screw-driver. This head projects beyond the sides of the oblong slot and serves to guide and hold the plates together. A corresponding bolt 16' is applied to the plates on the opposite side of the bolt 6 and is also fixed to move with the reciprocating plate. It is also surrounded by a bushing 17', internally and externally threaded to engage the bolt and plate, respectively. The lower end 22 of the bushing is smooth and projects down into the oblong slot 18' in the fixed blade, and its diameter is about equal to the width of the slot, in order to prevent the reciprocating blade from wobbling. The latter blade is further provided with an oblong slot 23, through which the bolt 6 extends. The movements of the bolts in this oblong slot, in conjunction with the slots in the fixed blade, guide the movements of the reciprocating blade. The fixed blade is attached to the bottom of the bolt 6 by means of a screw 24. The top of said bolt is provided with a thumb-nut 25. A spring-washer 26 is interposed between the bolt and the top of the casing. By loosening the nut 25 the bolt will be free to revolve, and as the bolt is fixed to the blades the latter will revolve with it, so that they can swing in the arc of a complete circle and be placed in any desired position relative to the handle portion of the casing.

A shoulder 6'' is formed on the bolt 6, where its lower portion 6''' is enlarged, so that when the nut 25 is tightened it will draw the shoulder up against the housing 1 and prevent the bolt, and hence the knives, from turning. The washer 26 above allows yielding contact between the shoulder and housing. In this way the friction between the comb-plate and reciprocating knife is rendered unaffected by the tightening operation of the adjustable bolt 6.

The teeth of the blades are of the usual shape, but instead of having their upper surfaces smooth I form in the top of each tooth a longitudinal groove 27, which reduces the area of said surfaces and causes the reciprocating blade to wear the teeth down faster, and by so doing automatically keep the cutting edges of the teeth sharp. It is evident that this order could be reversed and the grooves made in the teeth of the reciprocating blade. It is further evident that many other slight changes which might suggest themselves to a skilled mechanic could be made without departing from the spirit and scope of my invention.

From the foregoing construction it will be seen that when the drive-shaft is revolved the bevel-gears will operate to rotate the eccentric, which, revolving on the bolt 6, carries with it the link, which in turn reciprocates the blade.

The machine may easily and quickly be taken apart for cleaning or other purposes by simply removing the thumb-nut 25, which allows the bolt 6 to be withdrawn from the housing-section 1, and this section can be readily separated by removing the screws 20 from the ears 19. Hence it will be seen that my structure is exceedingly simple, its parts exceedingly few and accessible, and that it is light, strong, effective, and not easily disordered.

A further and great advantage of my construction lies in the fact that the clipping-blades can be easily swung on their axes in the arc of a complete circle, thereby greatly facilitating the movements of the operator.

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

1. In a clipper of the class described, a fixed blade, and a movable blade, a bolt to which the fixed blade is attached, a link pivoted to the movable blade and provided with an opening, a cam centered on the bolt and adapted to fit within the opening, and a housing containing driving-gear connected to actuate the cam, as and for the purpose set forth.

2. A clipping-machine having a comb-plate and reciprocating blade, in combination with a pivot to which the comb-plate is attached, an eccentric centered on the pivot, and a link connection between the eccentric and reciprocating blade, as and for the purpose set forth.

3. A clipping-machine of the reciprocating type provided with a comb-plate and knife pivoted to swing in the arc of a complete circle on an axis substantially at right angles to the plane of the drive-shaft, in combination with gearing interposed between the drive-shaft and knife for operating the latter, as and for the purpose set forth.

4. In a clipping-machine of the class described, the combination with the clipping mechanism and its housing, of a pivot to which the mechanism is attached, said pivot being arranged to bind against the housing without affecting the reciprocations of the clipping-blade, substantially as described.

5. In a clipping-machine of the reciprocating type, the combination with the clipping-knives, and their housing, substantially as described, of a pivot and surrounding parts which permit the said mechanism to turn, a shoulder on said pivot adapted to engage the casing, and a binding-nut whereby the friction between the casing and pivot is regulated without affecting the friction between the knives, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. MILLIKEN.

Witnesses:

HENRY G. WEBB,
HOWARD CARPENTER.