

(No Model.)

M. H. GROSS.
SAW SET.

No. 407,438.

Patented July 23, 1889.

Fig. 1.

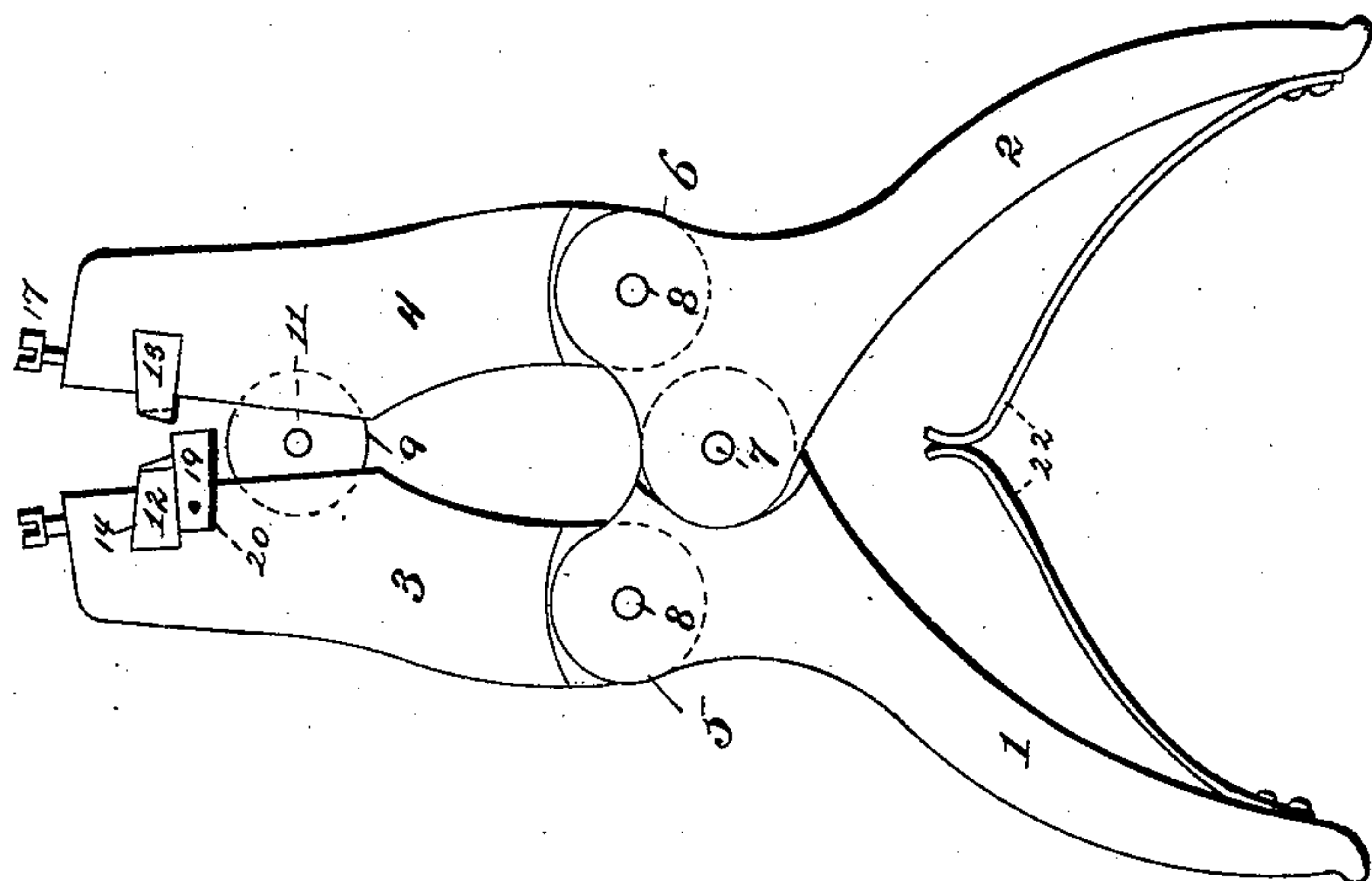


Fig. 2.

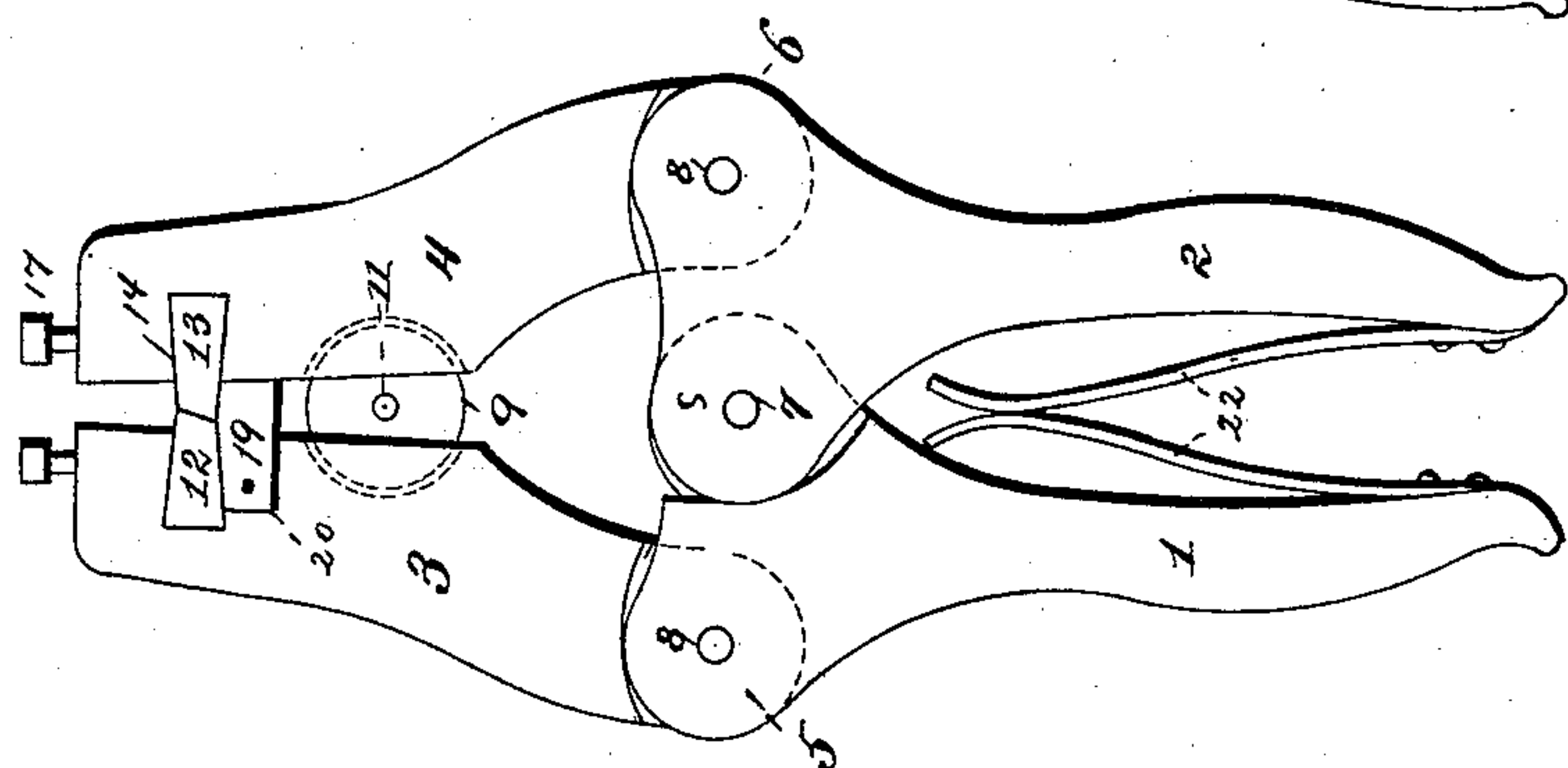


Fig. 3.

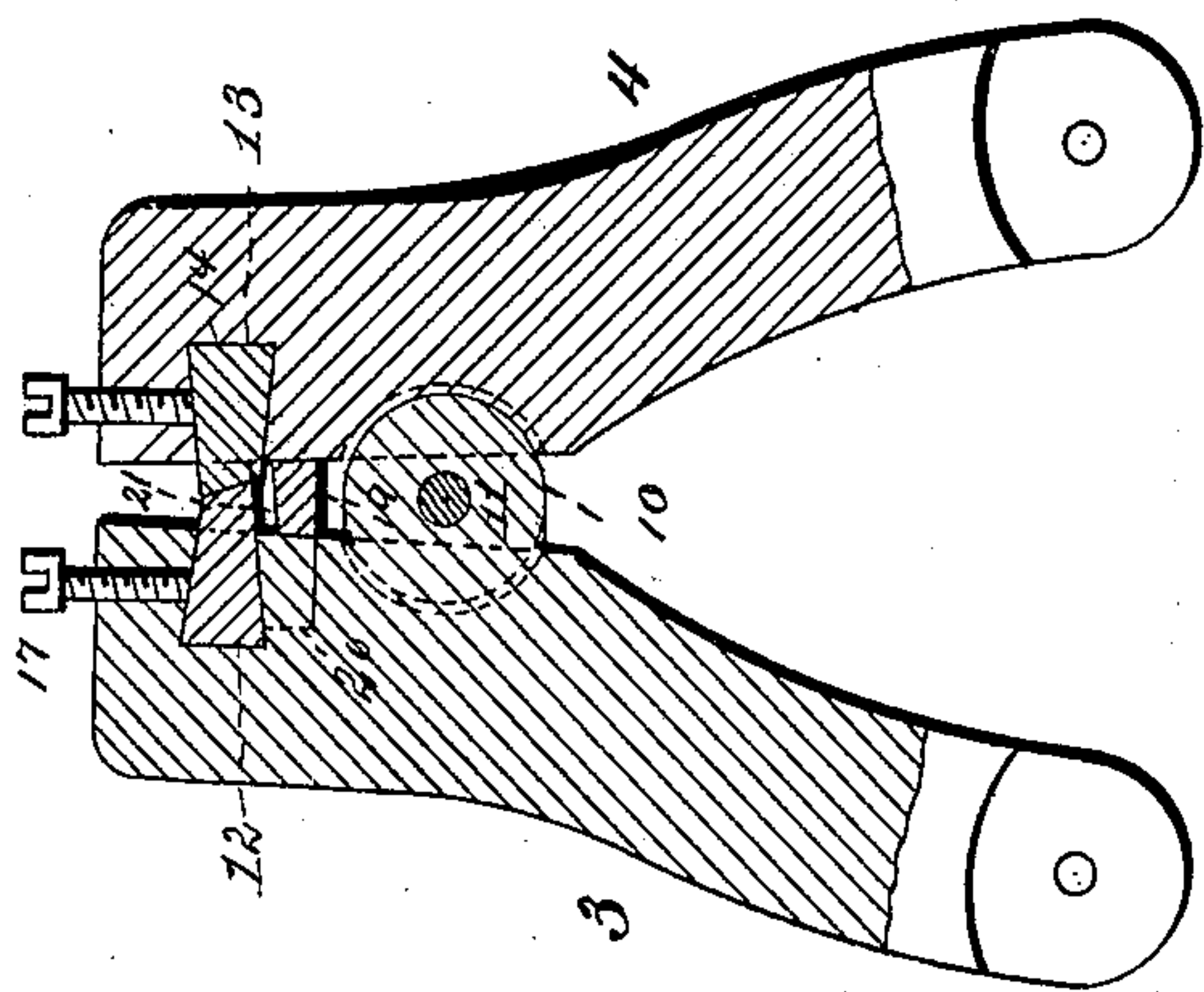


Fig. 5.

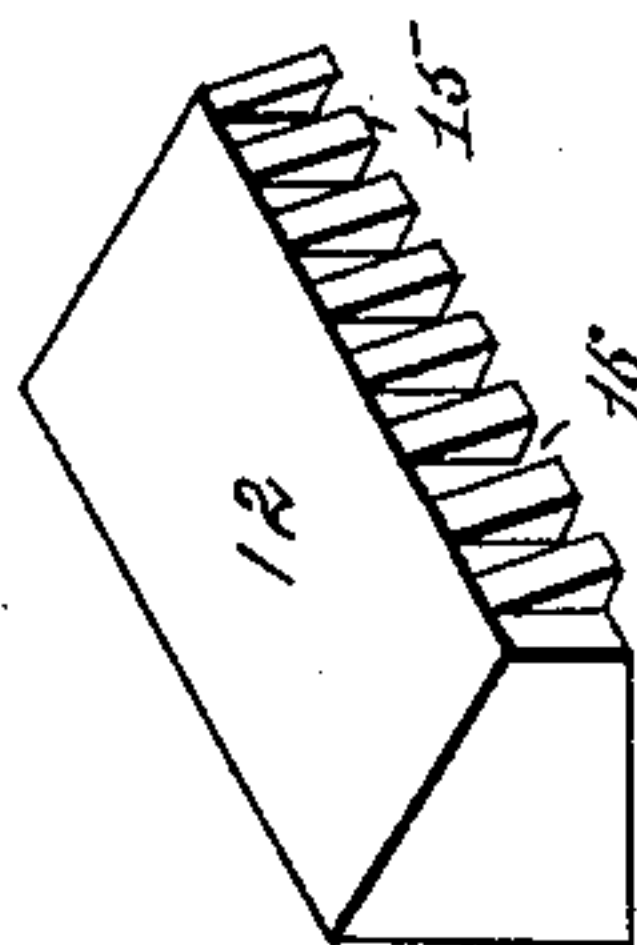
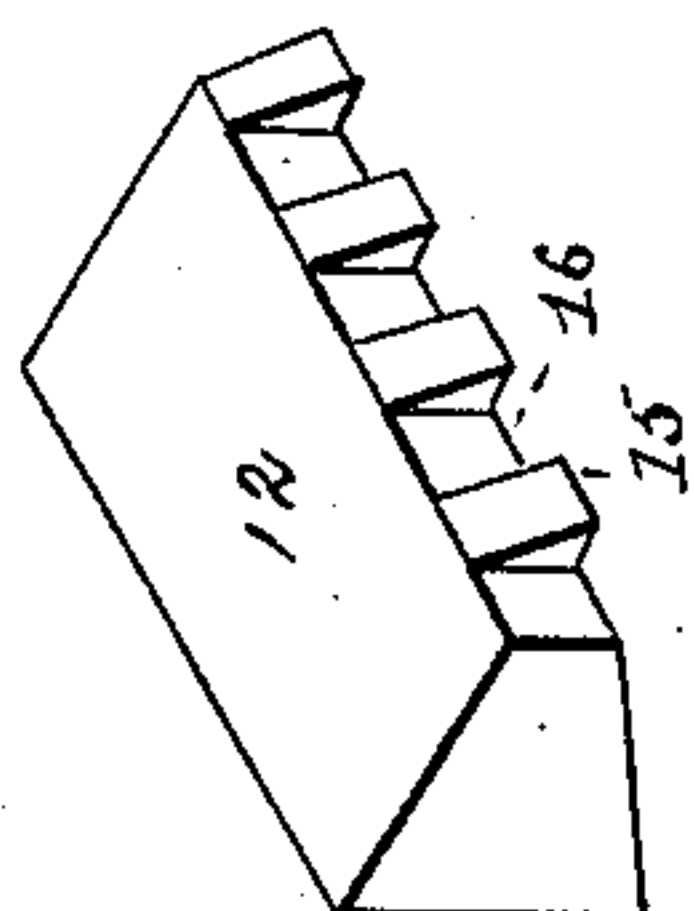


Fig. 4.



Witnesses

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SAW-SET.

SPECIFICATION forming part of Letters Patent No. 407,438, dated July 23, 1889.

Application filed November 27, 1888. Serial No. 291,971. (No model.)

To all whom it may concern:

Be it known that I, MILTON HENRY GROSS, a citizen of the United States, and a resident of Abilene, in the county of Dickinson and State of Kansas, have invented certain new and useful Improvements in Saw-Sets; and I do hereby 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.

My invention relates to improvements in saw-sets; and it consists of the novel combination and construction of parts, as will be hereinafter fully described and claimed.

One of the objects of my invention is to provide a saw-set with a pair of coacting dies of novel construction, which simultaneously act on a series of saw-teeth to force the alternate teeth in the same direction, or, in other words, to force each two adjoining or consecutive teeth in opposite directions, and set said teeth at the same inclination or angle to the axis of the saw-blade.

My invention also contemplates the easy and expeditious removal of the pair of dies from the movable jaws of the saw-set, so that another pair of dies having a larger or smaller number of teeth can be substituted for the dies previously removed.

The object of providing these interchangeable dies is to adapt the same implement to set saws having a larger or smaller number of teeth to the inch. Thus some saw-blades have eight teeth to the inch, while others have ten or more teeth to the inch.

A further object of my invention is to provide a simple and inexpensive implement to be operated by hand, and which is capable of exerting the requisite power or force for setting the saw-teeth by a simple pressure on the levers thereof by the operator's hand.

To enable others to understand my invention, I will now proceed to describe the same in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of my improved saw-set with the jaws thereof open to separate the dies. Fig. 2 is a similar view with

the jaws and dies closed. Fig. 3 is a vertical sectional view taken transversely through the dies and jaws. Figs. 4 and 5 are detached perspective views of two dies having an unequal or varying number of teeth, a pair of either of which can be readily fitted in the jaws of the implement.

Referring to the drawings, in which like numerals of reference denote corresponding parts in all the figures, 1 2 designate the handles or levers of my improved saw-set, which are jointed together; and 3 4 are the jaws. Each lever is provided at one end with two outwardly-extending lugs 5 6, the lugs 5 of the levers being pivotally connected together by a pin 7, and to the lugs 6 of said levers are pivotally connected the lower ends of the jaws 3 4 by means of the pins 8, as clearly shown. In practice I prefer to mortise the lugs 5 of one of the levers and reduce the corresponding lug of the other lever, this reduced lug fitting snugly in the mortised lug and working freely therein, and the lugs 6 of said levers are likewise mortised to receive reduced portions of the jaws, thereby materially strengthening the parts. The jaws are also pivotally connected to one another at an intermediate point of their length by means of two lugs 9 and 10, which project toward each other from the opposing faces of the jaws and are connected by means of pivot-pin 11.

It is obvious that when the two levers are drawn or pressed toward each other the upper ends of the jaws above the pivot 11 thereof will be moved nearer together, and in these ends of the jaws I provide the two setting-dies 12 13, one being secured in each of the jaws. These dies are fitted in sockets 14, formed in the opposing faces of the jaws, and one of the lateral faces of each die projects a short distance beyond the inner face of the jaw, so that the opposing faces of the dies will act upon the teeth of the saw-blade, which is inserted between said dies.

In the opposing faces of the dies are formed a series of offsets or teeth 15, which are spaced apart at suitable intervals to provide an intermediate series of depressions or recesses

16, and the dies are so arranged in the jaws of the instrument that the offsets of one die fit in the recesses of the other die when said dies are forced together. The offsets on the 5 faces of the dies are made tapering or V-shaped in cross-section, so that the base or larger end of each offset is at the lower edge of the die, and said offsets merge into or disappear at the upper edge of the die, as clearly 10 shown in Figs. 4 and 5.

To provide for securely holding the dies in the jaws and for expeditiously removing them, so that they can be replaced by other sets of dies with a different number of offsets 15 to properly set the teeth of saws having a varying number of teeth within a given space—say eight, ten, or an indefinite number of teeth to an inch—I make the sockets 14 dovetail in cross-section and open at their 20 ends through the lateral faces of the jaws. The dies are correspondingly shaped to fit snugly in these sockets, and they are clamped firmly in place by means of binding-screws 17, which work in threaded apertures formed 25 in the upper ends of the jaws. (See Fig. 3.)

In Figs. 4 and 5 of the drawings I have shown two dies which have an unequal number of offsets, and to serve as an illustration I have shown one die with a series of four off- 30 sets, while the other die has a series of six offsets; but I would have it understood that I do not confine myself to these proportions, as my invention contemplates the provision of sets of interchangeable dies having the 35 series of offsets of indefinite number to accommodate saw-blades having varying numbers of teeth within a given length. As will be readily understood, one set of dies can be removed by simply loosening the binding- 40 screws and sliding the dies endwise out of the sockets to be replaced by another set of dies, which are secured in the jaws in the same manner.

To limit the distance that the saw-teeth can 45 be inserted between the dies, and thus properly adjust the teeth between the dies, I have provided a fixed block or stop 19, that is secured to one of the jaws below the die thereof. This stop 19 has ears 20 at its ends, which lap 50 over the sides of the jaw, and these ears are secured to the jaw by any suitable fastenings.

In the upper face of the stop I have provided a longitudinal recess 21 to receive the 55 points of the saw-teeth when they are inserted between dies, and this stop is made wider than the projecting edge of the die secured to the same jaw of the implement that said stop is secured to, in order that the outer edge 60 of the stop will lie to one side of the meeting line of the two jaws when the latter are forced together.

To the opposing edges of the levers I have secured leaf-springs 22, one end of each of 65 which is fixed to one of the levers, while the other ends of said springs abut together when

the levers are closed, whereby the springs force the levers apart when the hand-pressure is removed therefrom.

The operation of my invention is obvious 70 from the foregoing description, taken in connection with the drawings.

The saw-teeth are inserted between the opposing faces of the dies, so that the offsets therein will be forced against the teeth, which 75 are prevented by the stop from passing too far between the dies, and the levers are now forcibly compressed to cause the offsets on the dies to press the saw-teeth in opposite directions, 80 each offset of one die forcing one saw-tooth into the opposite recess of the other die, and as the offsets and recesses are inclined or tapered the entire series of saw-teeth are set at the 85 same inclination or angle to the axis of the blade. The levers are now released, to be forced outward by the springs, and the dies move away from the saw-blade, the latter is moved forward to bring other teeth thereon in position between the dies, and the opera- 90 tion of setting the saw-teeth repeated.

Having thus fully described my invention, what I claim is—

1. In a saw-set, the combination of the levers, the jaws pivotally connected together at an intermediate point of their length and 95 pivoted to the levers, and the dies carried by the jaws, substantially as and for the purpose described.

2. In a saw-set, substantially as described, the combination of a pair of jaws pivotally 100 connected together at an intermediate point of their length, a pair of dies secured to the opposing edges of the jaws at one side of the pivotal connection thereof, said dies having coincident teeth and notches in their oppos- 105 ing contiguous faces, and a pair of levers pivotally connected to the jaws for moving the latter and the dies laterally, as and for the purpose described.

3. In a saw-set, substantially as described, 110 the combination of a pair of laterally-movable jaws 3 4, pivotally connected together at an intermediate point of their length, a pair of dies carried by said jaws and located on one side of the pivotal connection thereof, near 115 the free ends of the same, and a pair of levers pivotally connected to each other at 7 and to the jaws at 8, as and for the purpose described.

4. In a saw-set, substantially as described, 120 the combination of a pair of pivoted jaws 3 4, a pair of dies carried by said jaws, the levers pivoted to the jaws for moving the latter and the dies laterally of each other, and a transverse stop fixed to one of the jaws be- 125 low the die thereof, as and for the purpose described.

5. In a saw-set, substantially as described, the combination of a pair of jaws pivotally 130 connected to each other at an intermediate point of their length, a pair of dies detachably secured to the jaws and having the co-

incident teeth and depressions in their contiguous opposing faces, a transverse stop fixed to one of the jaws below the die thereon and projecting laterally of the jaw to a line beyond
5 the exposed face of the die on the jaw, to which said stop is fixed, and a pair of levers pivoted to each other and to the jaws, as and for the purpose described.

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

MILTON HENRY GROSS.

Witnesses.

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