

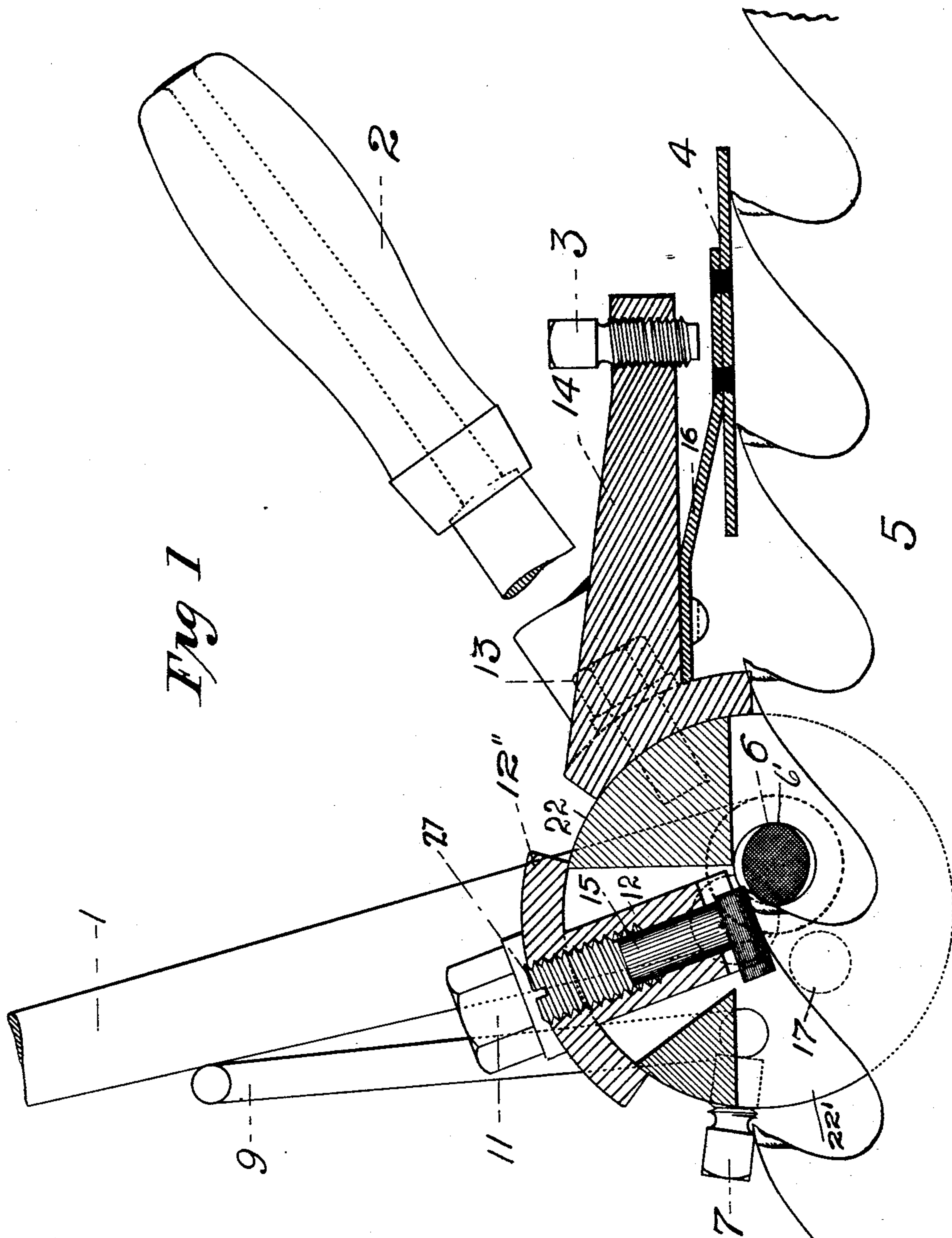
(No Model.)

2 Sheets—Sheet 1.

A. E. WHITE.
SAW SWAGE.

No. 587,539.

Patented Aug. 3, 1897.



WITNESSES:

Charles M. Catlin
Frank D. Bluestone.

INVENTOR

Albert E. White

BY

Aug. R. Catlin

ATTORNEY.

(No Model.)

2 Sheets—Sheet 2.

A. E. WHITE.
SAW SWAGE.

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Fig. 2.

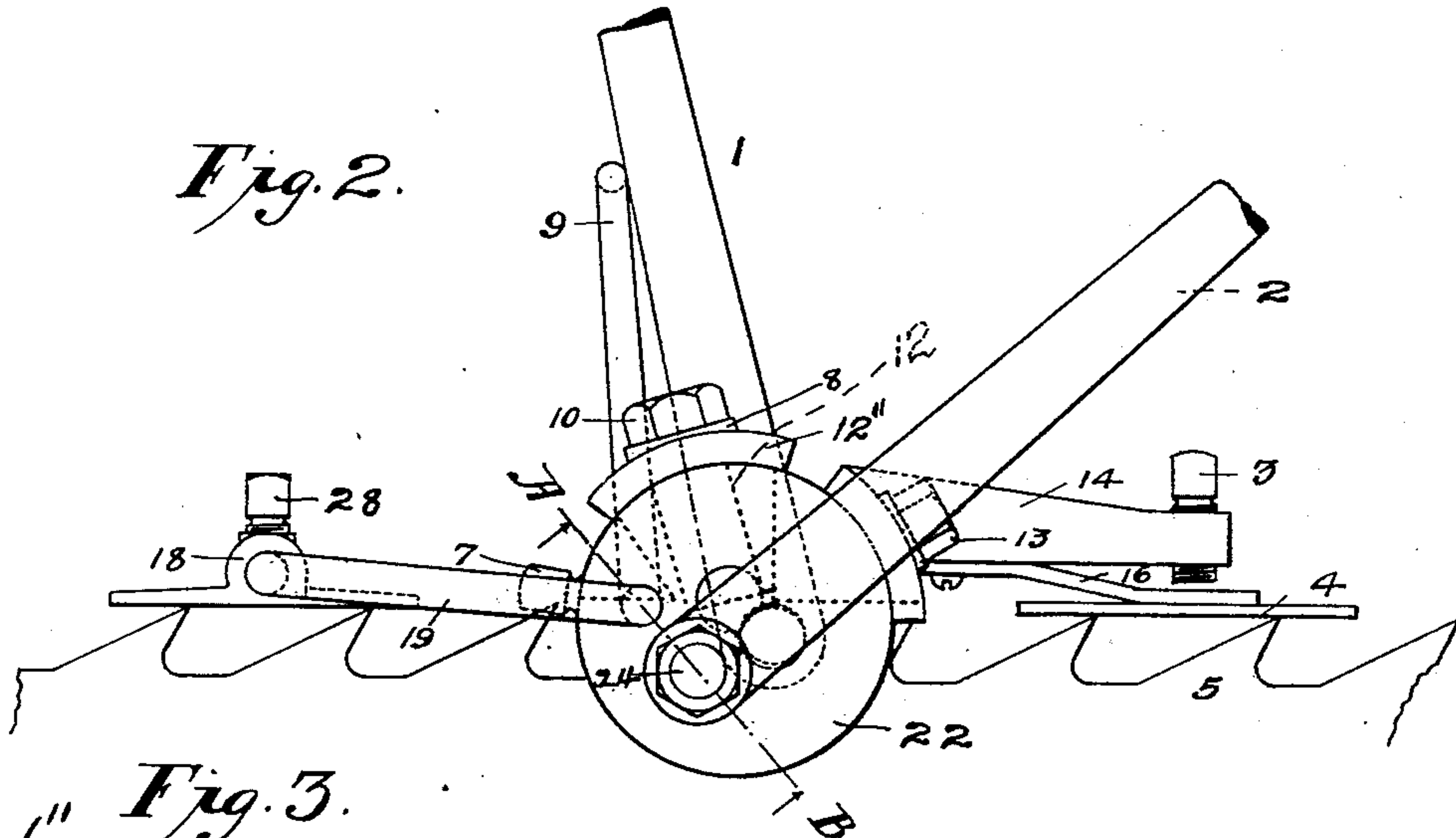


Fig. 3.

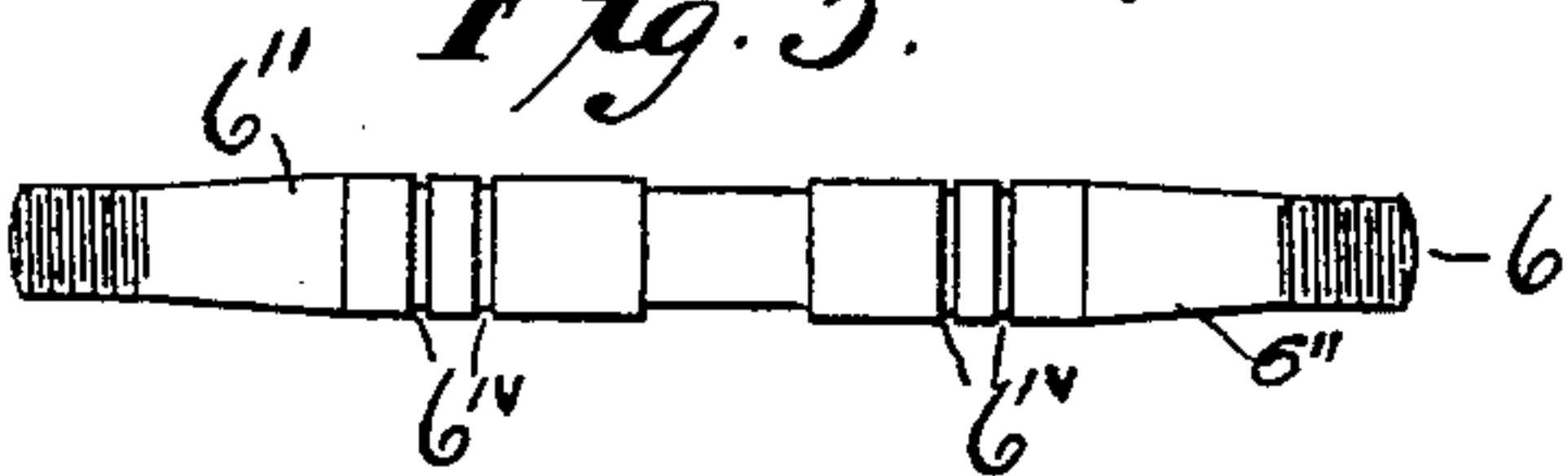


Fig. 4.

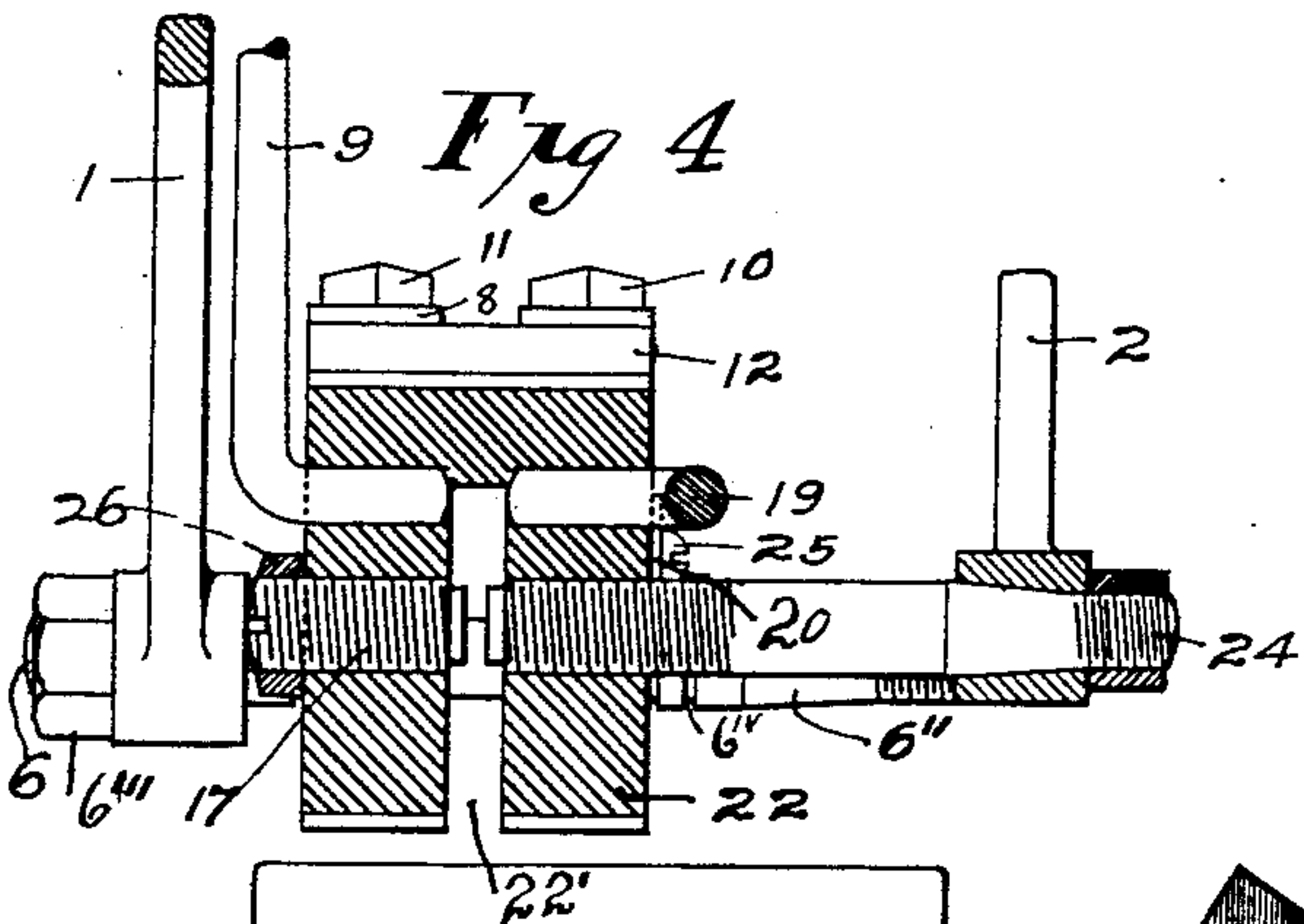


Fig. 5.

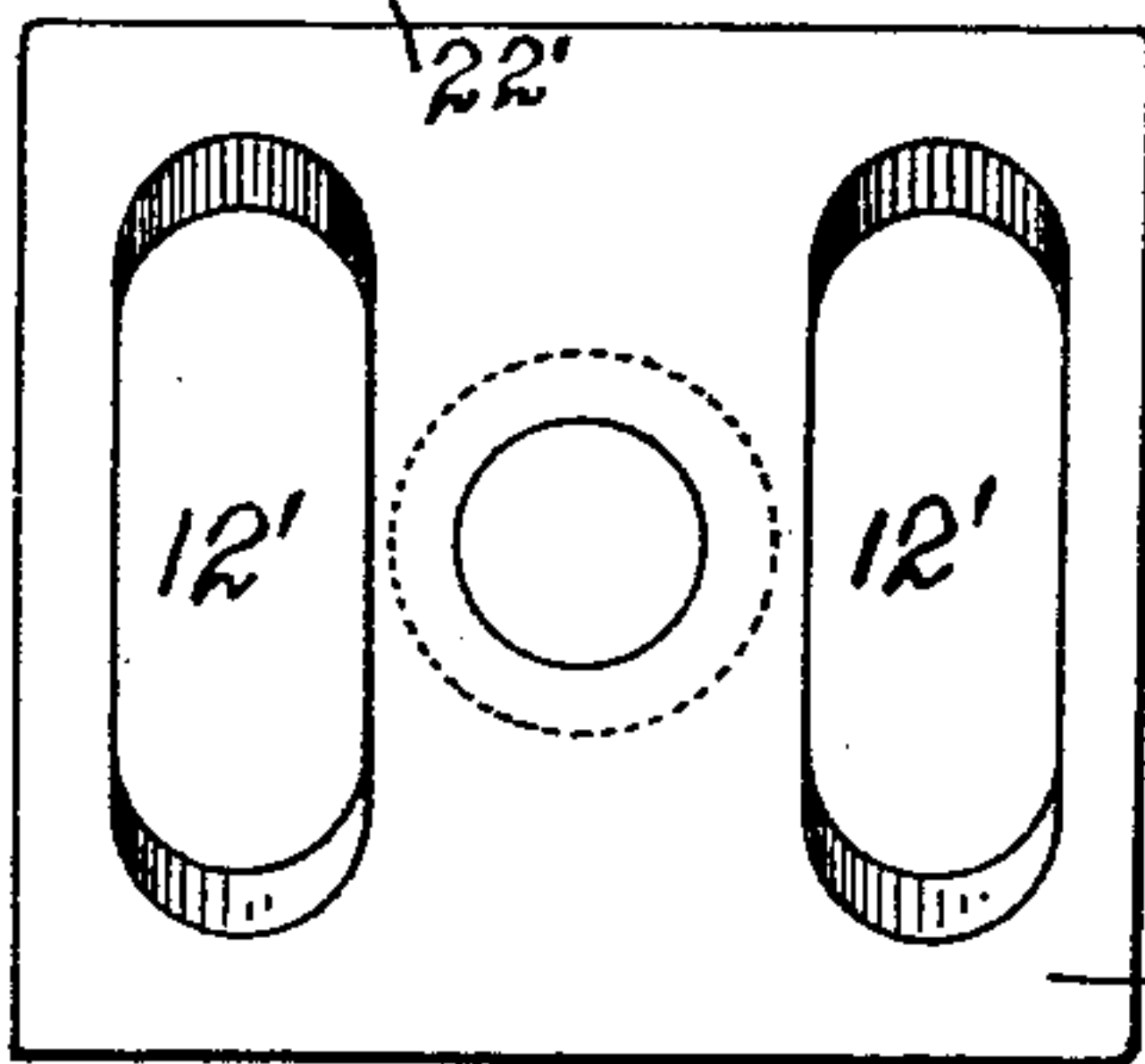


Fig. 7.

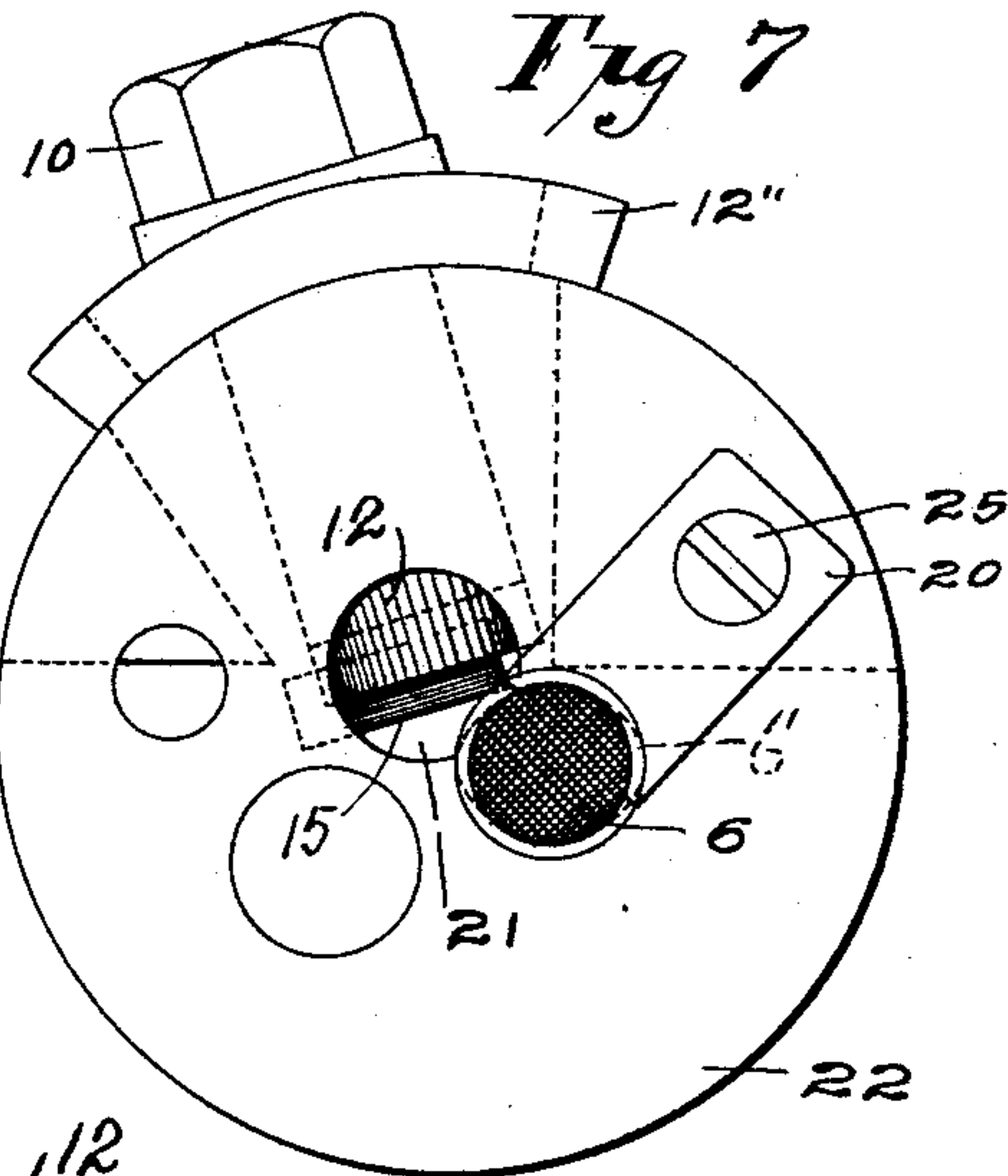
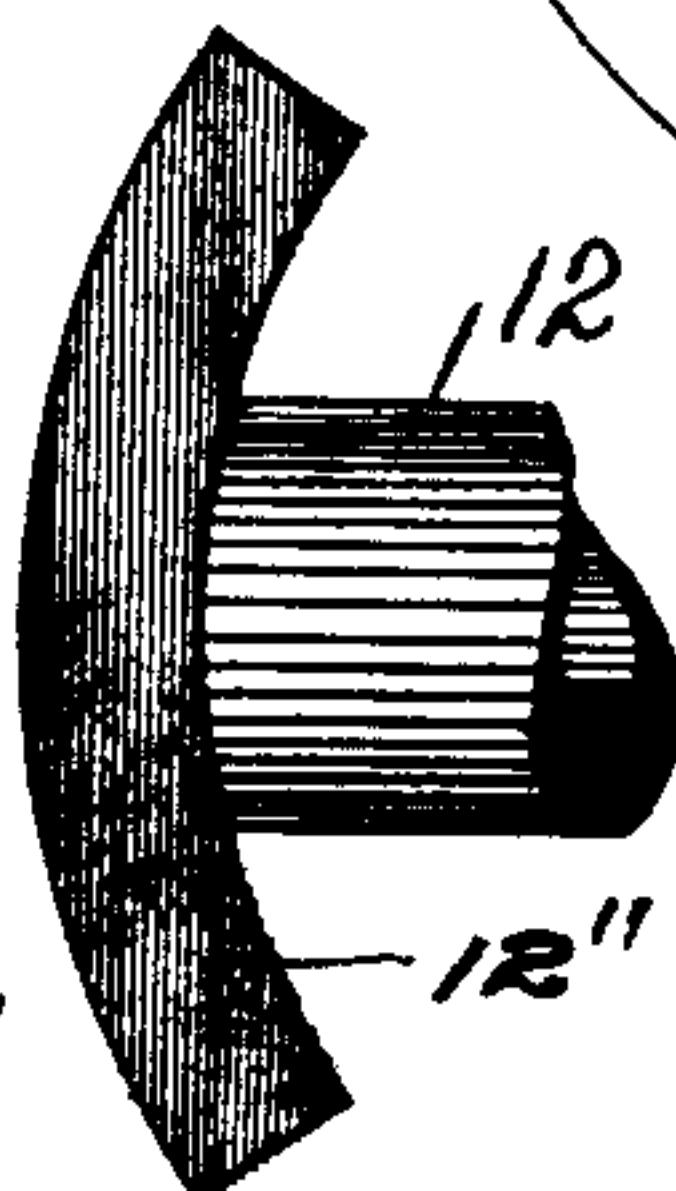


Fig. 6.



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Fig. 8.

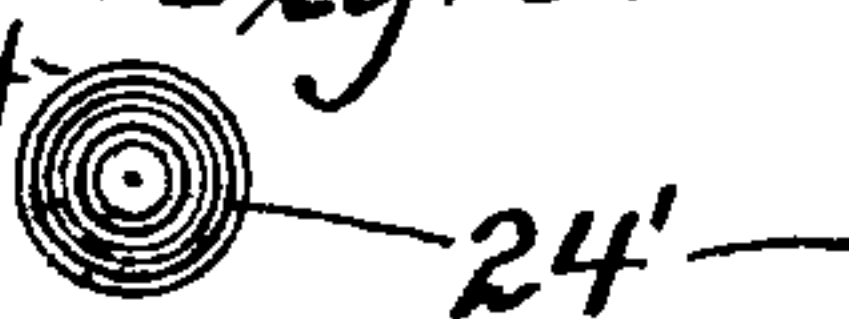


Fig. 9.



INVENTOR

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UNITED STATES PATENT OFFICE.

ALBERT E. WHITE, OF EAU CLAIRE, WISCONSIN.

SAW-SWAGE.

SPECIFICATION forming part of Letters Patent No. 587,539, dated August 3, 1897.

Application filed October 22, 1896. Serial No. 609,716. (No model.)

To all whom it may concern:

Be it known that I, ALBERT E. WHITE, a resident of Eau Claire, in the county of Eau Claire and State of Wisconsin, have invented certain new and useful Improvements in Saw-Swages; 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 pertains to make and use the same.

The invention relates to saw-swages; and its object is to provide a swage that will work equally well on all the different forms of saw-teeth, and which is simple in construction and durable, and which can be easily adjusted and is effective in operation and capable of swaging the teeth of band, gang, and circular saws.

The invention consists of certain parts and combinations, as will be hereinafter fully described and pointed out.

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

Figure 1 is a horizontal section showing the working parts of a swage. Fig. 2 is a side elevation, on a smaller scale, of the swage adjusted for work. Fig. 3 is a plan of a swaging-die. Fig. 4 is a section on line A B of Fig. 2. Fig. 5 is a plan of a sleeve-holding cap. Fig. 6 is a partial end elevation of the same. Fig. 7 is a side elevation of the swage, the operating-levers and other parts being omitted. Fig. 8 is an end view of a detail, and Fig. 9 is a central section thereof.

The improved saw-swage is provided with a round head 22, three inches in diameter and two and one-fourth long. In it is cut a slot 22', three-eighths of an inch wide and one and eleven-sixteenths of an inch deep, through which may be passed a saw-blade 5, the teeth of which are to be swaged. Across this slot extends a swage-die 6, so made and combined that it can be adjusted and worked in four different positions, having two wearing corners or beds situated diametrically opposite each other in each position. When the first two so-called "corners" or "wearing-beds" are worn off, the die being moved endwise to provide the second bed, the die can be turned half over to provide two more wearing corners or beds, a suitable endwise adjustment

being made to provide a second bed, as before, and the die may be changed end for end and then turned and adjusted in like manner to bring into operative position four more working corners or beds. These corners or beds consist of separate portions of the eccentric surfaces adjacent the middle of the die, (indicated at 6' by dotted lines in Fig. 7 and in full lines in Fig. 1.)

To enable the operation above described to be effected, the die 6 is provided with annular grooves 6^{IV}, into any one of which can be placed a stop 20, fixed to head 22 by means of screw 25. This stop holds the die from moving endwise and transversely through the head 22, but permits the same to be turned circumferentially. When the die becomes worn, the stop 20 can be removed and the die slipped endwise until the next groove registers with the exterior face of head 22, where it may be held by stop 20, suitably reapplied for the purpose.

Each lengthwise half of the die is made symmetrical with the other to provide for its use when changed end for end, thereby increasing the extent of the centrally-situated eccentric portions that can be utilized.

The swage-die 6 is provided with a lever 1 for its manipulation. This lever 1 is attached to the die 6 by means of a tapered joint (indicated at 6'') and by a nut 6'''. The lever 1 rests on an arm 9, adjustably held in the head 22 by means of a set-screw 7.

The saw-blade 5 is held in place by two oppositely-arranged screws 17 and 24. (See Fig. 4.) The inner end face of these screws has three rings turned in the same in manner to provide sharp edges 24' to firmly grip the saw-tooth and prevent the machine from slipping while the tooth is being swaged. One of these screws 24 is provided with a lever 2 for turning it into or out of contact with the side of a saw-tooth, while the other screw 17 is provided with a jam-nut 26 to hold the same from turning while the machine is being operated, but permitting the screw to be adjusted to accommodate the different thicknesses of saw-plate.

Both ends of the die are provided with grooves 6^{IV} to provide for locking it when reversed.

Into the sleeve 12 is fitted an anvil 15, adapted to rest on the back of a saw-tooth, (see

Fig. 1,) said sleeve 12 being firmly fastened to the head 22 by means of screws 10 and 11, passing through slots 12' in the sleeve-holding cap 12". When these screws are loosened, the cap can be adjusted about the head and the anvil thus tilted forward or back to fit the back of the tooth to be swaged.

21 (see Fig. 7) is a sight-hole giving a view of the anvil, die, and saw-tooth.

The sleeve-holding cap is curved to fit the exterior of the circular head and hold the anvil always in the center. Upon loosening the screws 10, 11, and 13 the head can be rotated to raise or lower the die 6, held therein, and the cap-held sleeve and the bracket adjusted to insure suitable relative position of the anvil 15, bracket 14, and die 6. This bracket is fixed to the head 22 by said screw 13. On its under side is fixed a spring 16, to which is attached a bearing or guide plate 4. The set-screw 3 is an adjustable stop for this plate. Said bracket is adapted, in cooperation with a plate, guide, or shoe 18, (see Fig. 2,) to hold the swage in place while it is being clamped to a saw-plate 5. The spring 16 holds the plate 4 on the teeth, but allows the rotating head 22 to be tipped or rotated forward when the lever 1 is suitably pulled from its rest 9 to swage the point of a tooth.

On the opposite side of the head 22 from the bracket 14 is an arm 19, adjustably held by a set-screw 7. This arm is bent at each end, and the bent portion near the head is entered in a suitable hole therein. Said hole is indicated in Fig. 1, and the transverse screw 7 is shown seated in the head and reaching to the hole. In Fig. 2 the arm is shown in place, and the screw is partially concealed thereby. In Fig. 4 the short bent end of the arm is shown, the main part of the arm being cut away. In this figure the screw is behind the short end of the arm, and therefore does not appear. On the end of this arm 19 is the shoe or guide 18, adjustable by means of a set-screw 28. This guide prevents the swage from tipping backwardly as it is pushed from one tooth to another.

The swage is operated as follows: The machine is placed on the saw, as shown in Fig. 2, and the lever 2 turned forward until the saw-tooth is firmly clamped between screws 17 and 24, whereupon lever 1 is pulled from its rest 9 until the die 6 touches the anvil 15. The lever 1 is then pushed back to its former position on the rest 9. The lever 2 is next turned back until the tooth is freed from the clamping-screws and the swage is then pushed forward to the next tooth, all without removing the hands from levers 1 and 2, and the operation is repeated until all of the teeth of the saw are swaged.

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

1. In a saw-swaging device the combination of the circular slotted head, an anvil-supporting sleeve adjustable circumferentially

with respect to the head, and a die supported in the head and adjustable with respect to the head and anvil, substantially as described.

2. In a saw-swaging device the combination of the circular slotted head, an anvil-supporting sleeve adjustable circumferentially with respect to the head, and a die supported in the head and adjustable with respect to the head and anvil, a bracket fixed to said head and made circumferentially adjustable therein and adapted mediately to bear on the saw-teeth, substantially as described.

3. In a saw-swaging device the combination of a head provided with an anvil and the die provided with eccentric die-surfaces at two points each equidistant from an end of the die, said die being lengthwise reversible to place the said surfaces adjacent either end into operative position at will and constructed to receive a handle at either end, substantially as described.

4. In a saw-swaging device the combination of the head provided with an anvil and a die provided with opposite die-surfaces on each side of its center, said die being reversible endwise to successively place said lengthwise separated surfaces into operative position, the die being also rotatable and endwise adjustable, and provided with grooves adjacent each end, and a stop 20 adapted to engage any one of said grooves, substantially as described.

5. In a saw-swaging device a lengthwise-reversible die adapted at each end to receive an operating-lever and provided toward each end with a plurality of grooves 6^{IV}, a lock for either of said grooves, said die having a plurality of die-surfaces suitably situated with reference to its ends, whereby the die can be reversed and whereby in either position it can be adjusted endwise to bring different surfaces into operative position, substantially as described.

6. The combination in a saw-swaging device, of a head 22, a cap 12" fitting said head and provided with slots 12', a sleeve fixed to said cap, an anvil supported in said sleeve and a die with eccentric die-surfaces adjustably supported in said head, substantially as described.

7. In a saw-swaging device the combination of a rotatable swage-head, a bracket, a guide-plate, a spring fixed to the bracket and plate to hold the latter on the saw-teeth, and a stop movably held in the bracket to limit the rotation of the head, said stop being adjustable without varying the relative situation of the bracket or varying the tension of the spring, substantially as described.

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

ALBERT E. WHITE.

Witnesses:

W. B. SPENCER,
COLIN MUNRO.