

No. 860,198.

PATENTED JULY 16, 1907.

D. L. ELLIS.
PIPE VISE.

APPLICATION FILED OCT. 20, 1906.

2 SHEETS—SHEET 1.

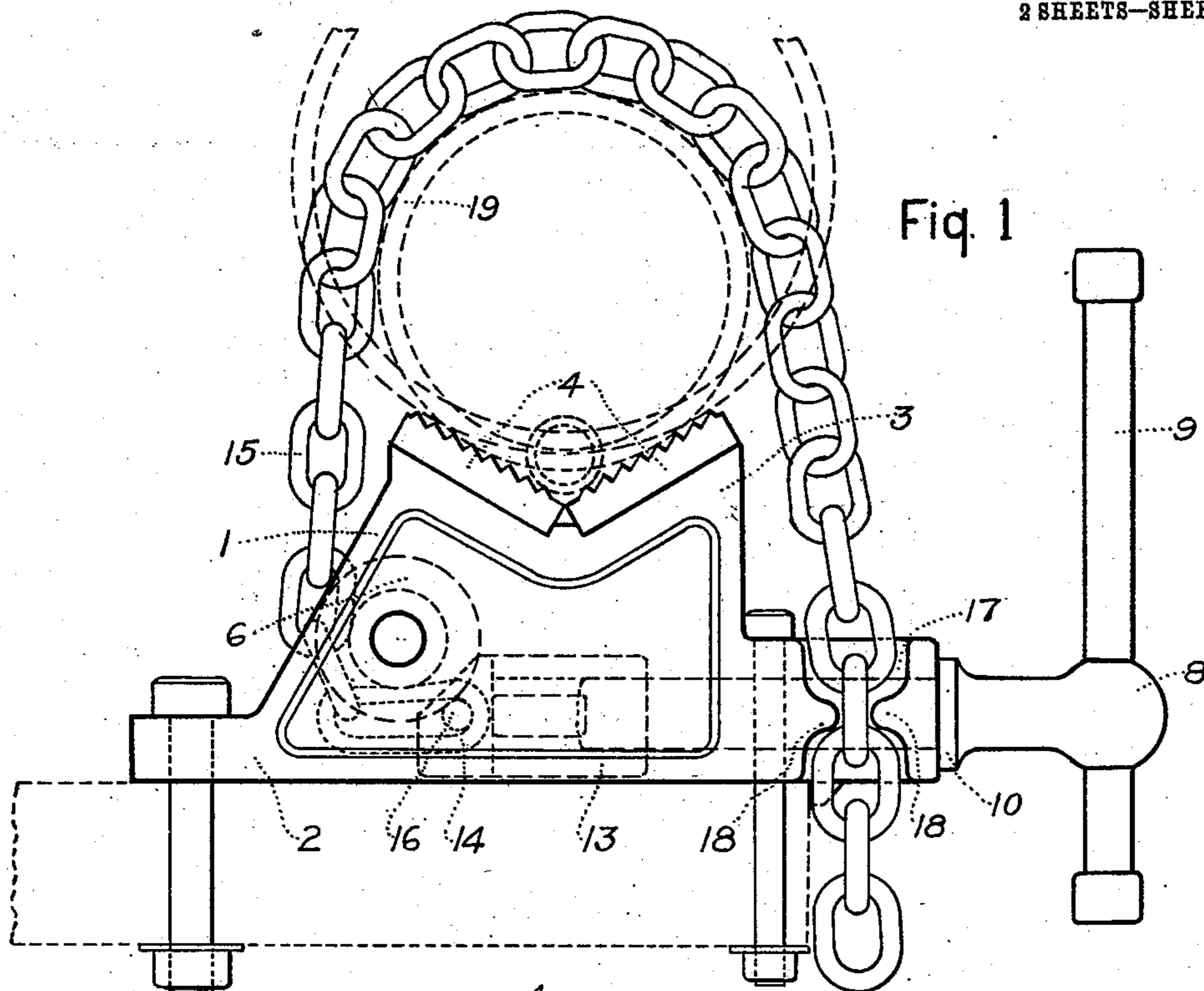


Fig. 1

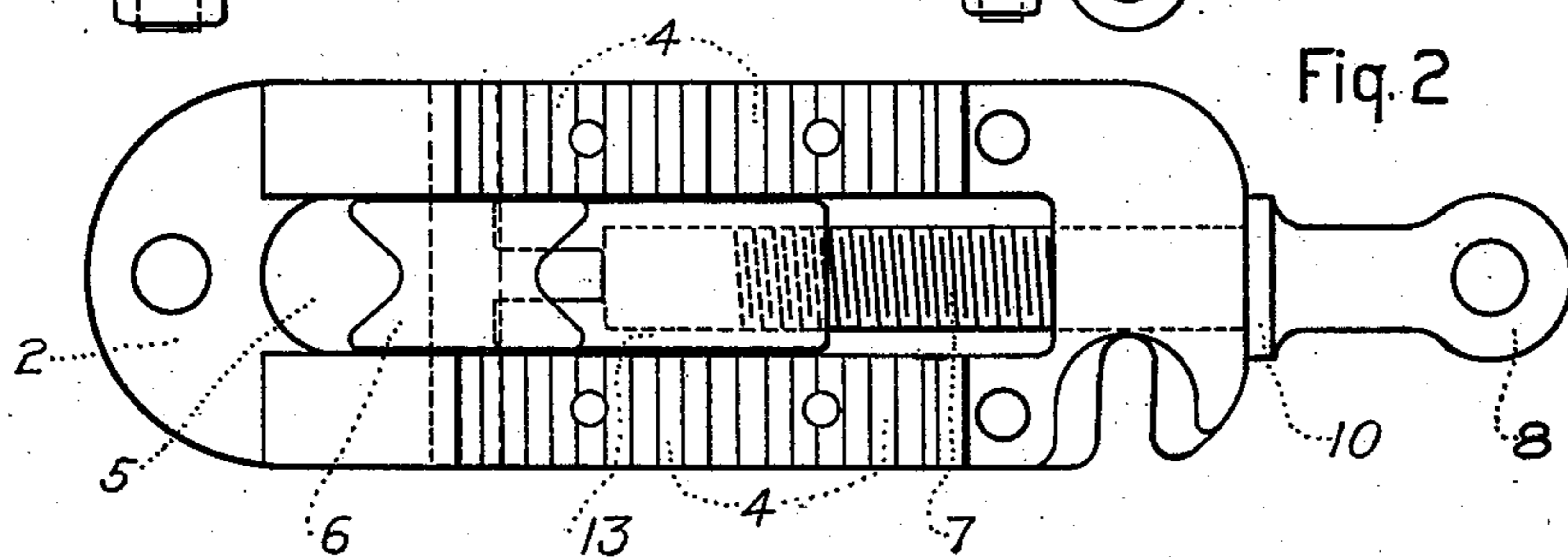


Fig. 2

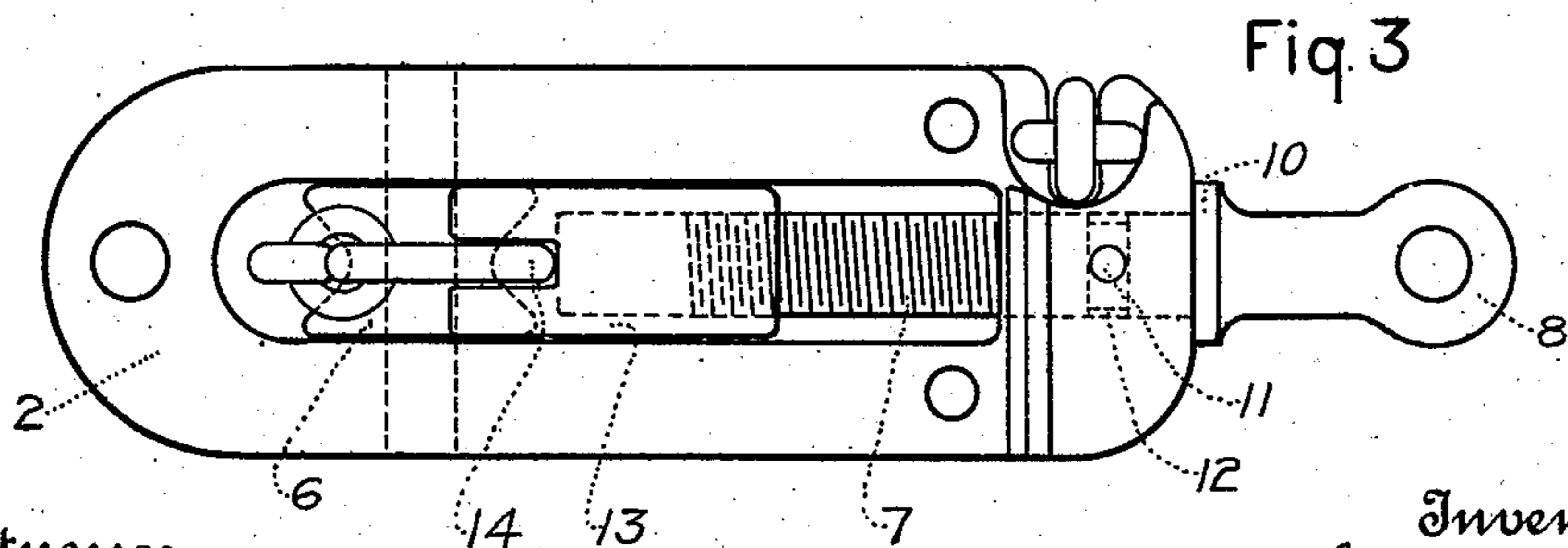


Fig. 3

Witnesses

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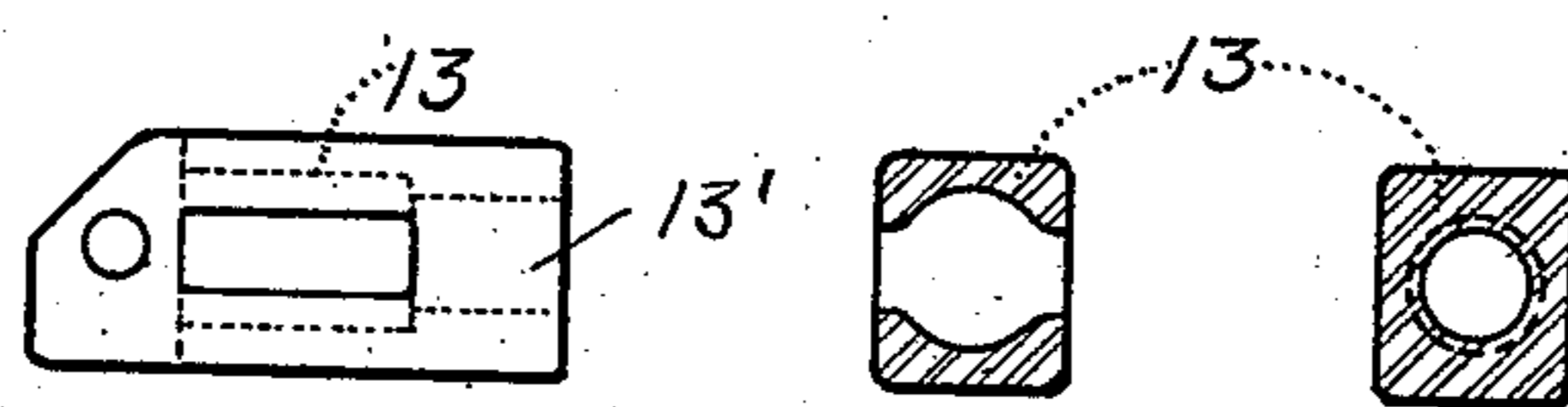
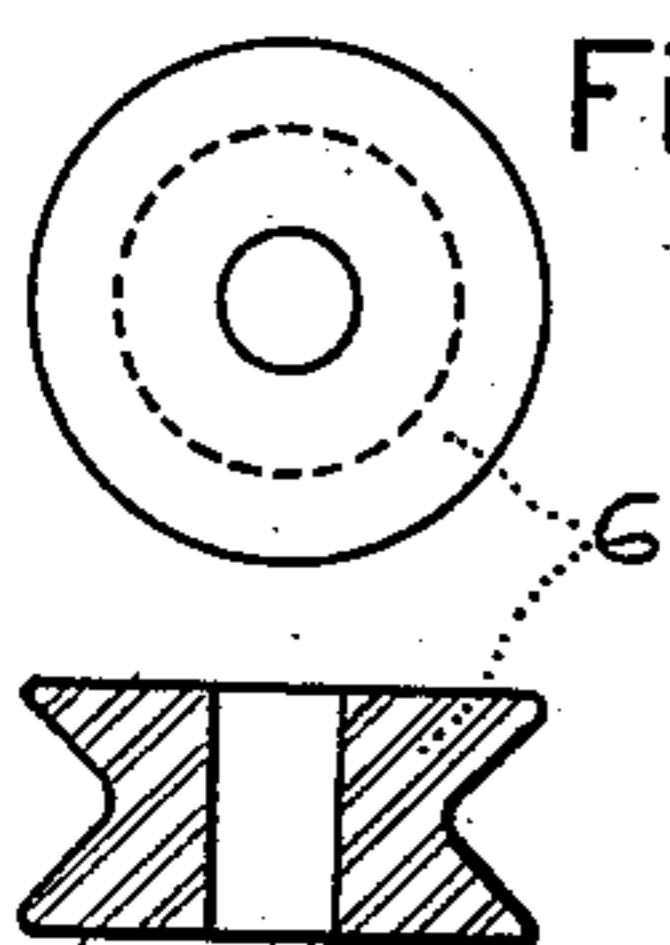
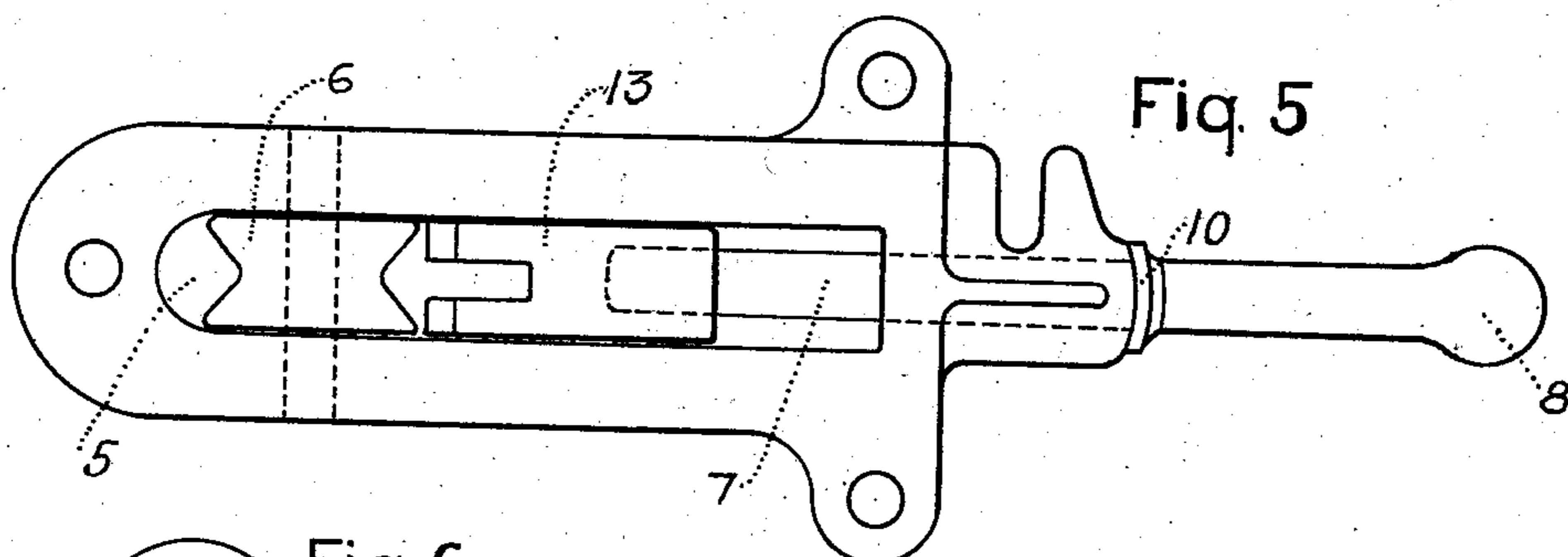
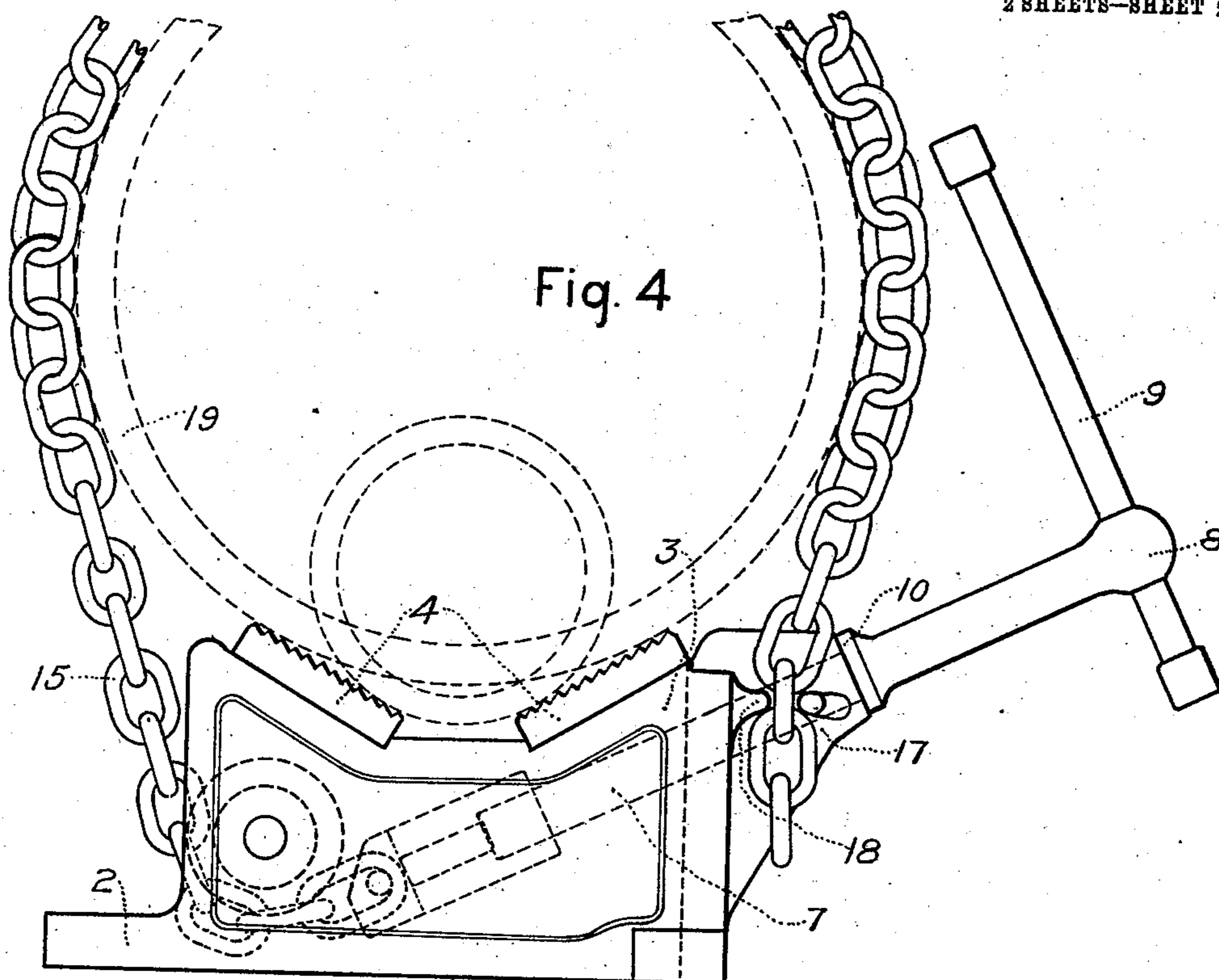
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Witnesses

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UNITED STATES PATENT OFFICE.

DAVID L. ELLIS, OF DETROIT, MICHIGAN.

PIPE-VISE.

No. 860,198.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed October 20, 1906. Serial No. 339,852.

To all whom it may concern:

Be it known that I, DAVID L. ELLIS, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Pipe-Vises, of which the following is a description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to pipe vises of the class in which a chain is employed in connection with serrated jaws to grip and hold the pipe and the invention has for its object to provide a device of this class which shall be simple in construction and convenient and effective in operation.

With this object in view my invention consists in the construction and combination of elements hereinafter described and particularly pointed out in the claims.

In the drawings, Figure 1 is a side view of my improved pipe vise showing a pipe held in it; Fig. 2 is a top view of the vise with the chain removed; Fig. 3 is a bottom view of the vise; Fig. 4 is an end view of a modified form of my improved vise adapted for use with large pipe; Fig. 5 is a bottom view of the construction shown in Fig. 4; and Figs. 6 and 7 are detail views showing parts of the device.

Referring to the drawings, 1 indicates the body portion of the vise comprising a base 2 adapted to rest on and be bolted or otherwise secured to a work bench, and an upwardly extending portion 3 having a V-shaped recess in its upper face in which are secured serrated jaw plates 4, 4, on which the pipe rests when the vise is in use. In the body portion of the vise is formed a slot 5 extending nearly to the front end of the base 2. Near the rear end of the base 2 a grooved roller or pulley 6 is journaled and through the forward end of the base 2 extends a feed screw 7 having on its outer end a head 8 perforated to receive a lever 9 for rotating the screw. The feed screw 7 is provided with an integral collar 10 adapted to bear against the front end of the base and it is preferably held from longitudinal movement in the end of the base by means of a pin or screw 11 entering an annular recess 12 in it.

The inner end of the feed screw engages a screw-threaded opening 13' in a block 13, the rear end of which is slotted to receive the end link 14 of a chain 15, the link 14 being held in the slot by a pin 16.

The block 13 is made with a solid end in which the screwthreaded opening 13' is formed and the portion of the block between this end and the slot in which the end link 14 is secured is hollowed out as shown in Fig. 7 to permit the screw 7 to pass freely through it.

On one side of the front end of the base, I provide a recess 17 having projections 18 therein adapted to engage links of the chain 15.

19 indicates the pipe to be held in the vise. In order to grip and hold the pipe the feed screw 7 is rotated

until the block 13, which slides in the slot 5 and is held from rotation by the sides of the slot, is in its rearmost position. The pipe is then placed upon the jaw plates 4, 4, and the chain 15 is brought over the pipe and drawn snugly and the links near its free end are inserted in the recess 17 so that the projections 18 will engage and hold the end of the chain from movement.

The feed screw 7 is then rotated to draw the block 13 forward drawing the end link 14 with it and drawing the chain over the roller or pulley 6. As the chain is held near its other end by its engagement with the projections 18 in the recess 17, this movement of the link will cause the chain to be drawn tightly down upon the pipe causing it to be firmly gripped and held between the chain and the jaw plates 4, 4.

The construction shown in Figs. 4 and 5 differs from that shown in Figs. 1, 2 and 3 in that the recess in the upper face of the body portion has its walls at a more obtuse angle and further in that the feed screw 7 instead of being arranged parallel with the base is arranged at an angle so that it may be readily operated when the vise is resting upon a floor or other surface which would interfere with the free movement of the lever 9. This construction is particularly adapted for use with pipe which is too large to be readily lifted onto a bench.

The chain 15 is of ordinary welded link construction and is much less expensive than the pivoted link chains ordinarily used in chain vises. This ordinary link chain is flexible in any direction and is more easily placed in position about the pipe than the pivoted link chain and is particularly adapted to conform to the shape of the pipe and to grip and hold smaller sizes of pipe as well as the larger sizes. The links being uniform any of them may be inserted in the recess 17 and will be firmly held by the projections 18.

The feed screw being arranged horizontally as in Figs. 1 to 3 inclusive or at a slight angle to the horizontal as in Fig. 4 is readily operated by the lever 9 in the same way that the screw of the ordinary bench vise is operated.

The recess 17 in which the free end of the chain is engaged after it is passed over the pipe being at the front of the device in close proximity to the point at which the power is applied to the feed screw is in convenient position both for engaging the chain and for observing the action as the chain is tightened.

The roller or pulley 6 is mounted to rotate on a hardened steel pin 20 of sufficient diameter to support the strain of the chain as it is tightened by the feed screw.

The pipe vise as thus described comprises the fewest parts possible and these parts are of the simplest and least expensive construction possible.

The jaw plates 4 are preferably made removable but if preferred may be made integral with the body of the vise.

It will of course be understood that I do not desire to be limited to the precise construction or arrangement of parts shown, as these may be modified without departing from the spirit of the invention.

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

1. The combination with the body portion of a pipe vise having jaws in its upper face and having a slot formed therein, of a roller mounted in said slot, a block movable 10 in said slot and a chain passing about the roller and connected at one end to the movable block, the body portion being provided near its front end with an anchor recess adapted to receive and hold the chain, and a feed screw arranged to be operated from the front end of the body 15 portion for moving the block to tighten the chain and grip the pipe between it and the jaws.

2. The combination with the body portion of a pipe vise having jaws in its upper face and having a slot formed therein, of a roller mounted in said slot, a block movable 20 in said slot and a chain composed of interlocked links passing about the roller and connected at one end to the movable block, the body portion being provided near its front end with an anchor recess adapted to receive and

hold the chain, and a feed screw arranged to be operated from the front end of the body portion for moving the 25 block to tighten the chain and grip the pipe between it and the jaws.

3. The combination of the body portion of a pipe vise having a slot formed therein and having an upward extension provided with jaw plates, a block movable hori- 30 zontally in said slot supported and moved by a screw rod, a chain secured at one end to the movable block, a roller about which the chain passes and means carried by the body portion for engaging the chain.

4. The combination of the body portion of a pipe vise 35 having a slot formed therein and having an upward extension provided with jaw plates, a block movable horizontally in said slot supported and moved by a screw rod, a chain composed of interlocked links secured at one end to the movable block, a roller about which the chain passes and 40 means carried by the body portion for engaging the chain.

This specification signed and witnessed this 19th day of October A. D. 1906.

DAVID L. ELLIS.

In the presence of—

A. M. PARKINS,
A. P. MULEY.