

No. 833,770.

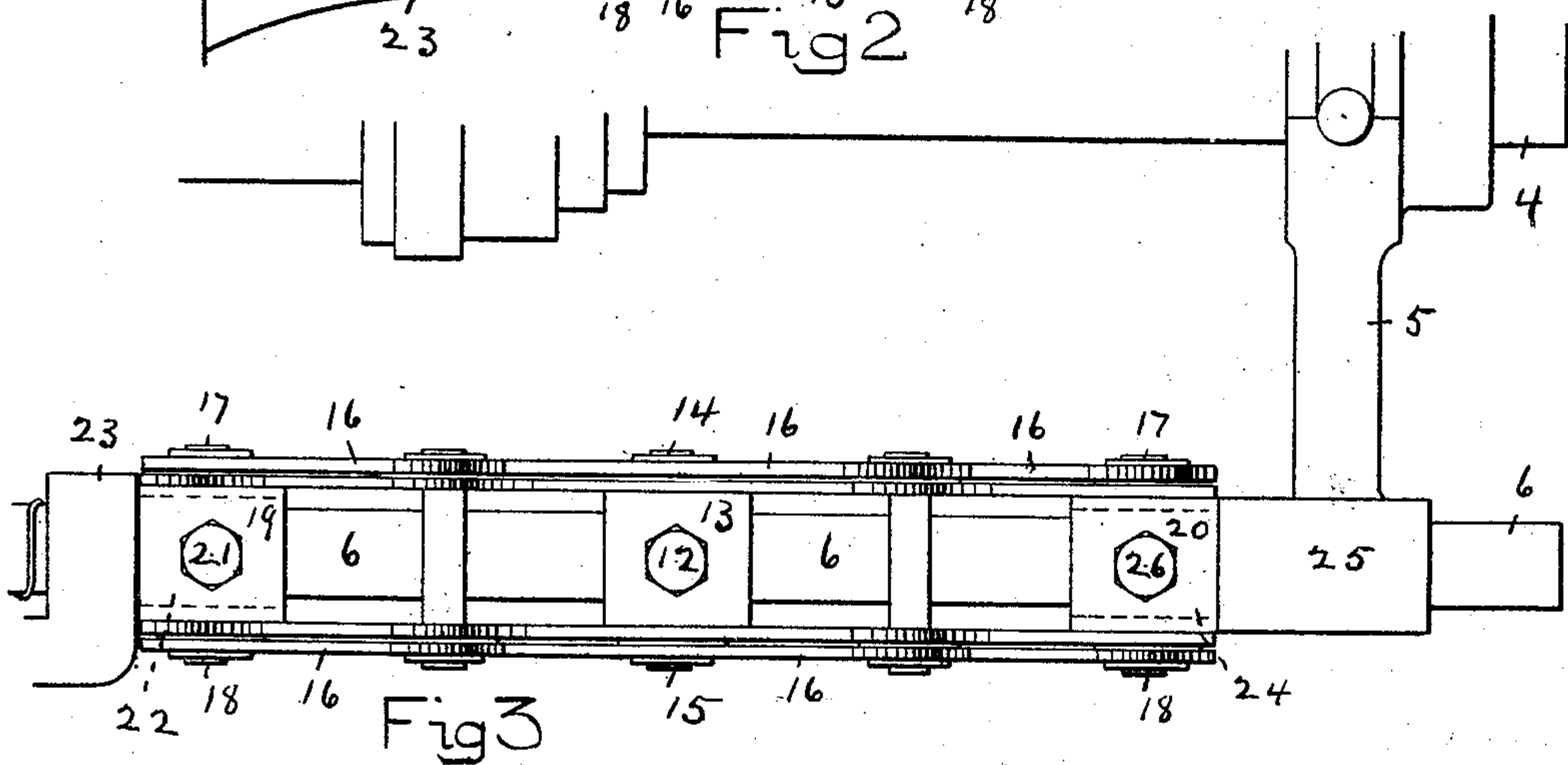
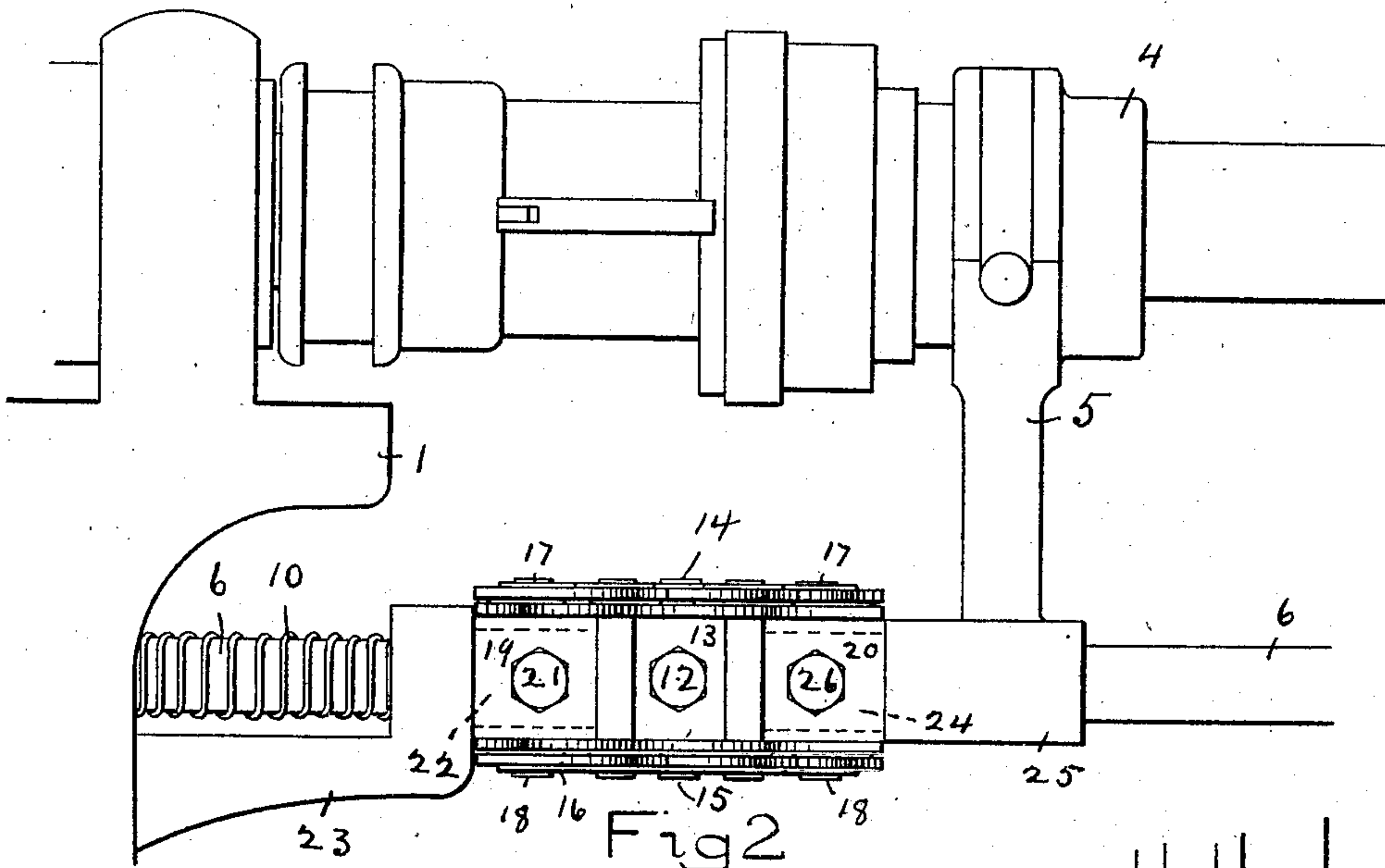
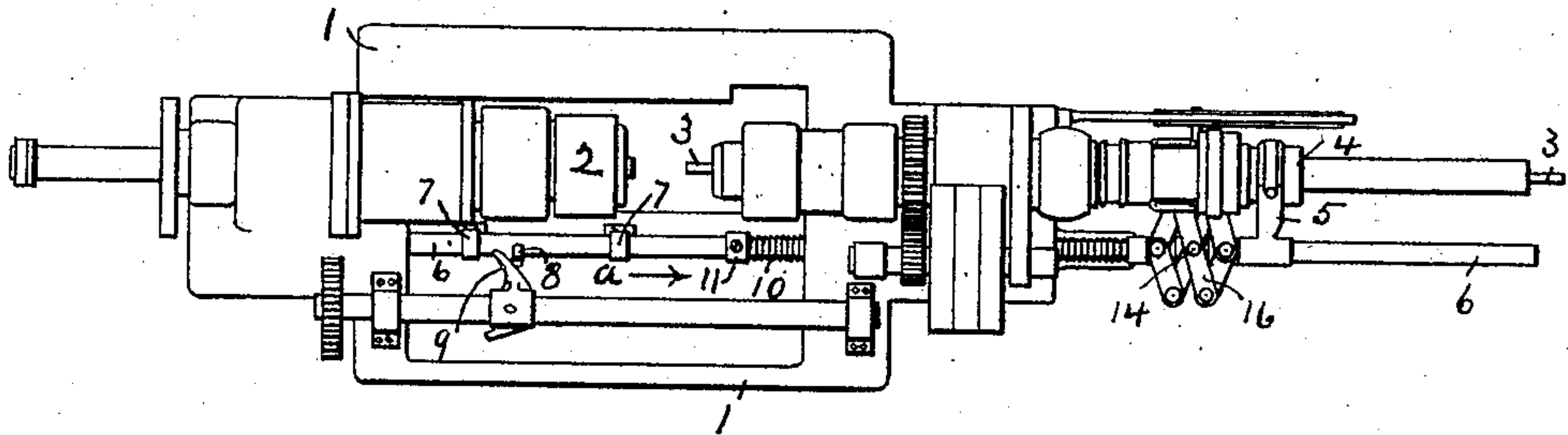
PATENTED OCT. 23, 1906.

G. L. BROWNELL.

FEEDING MECHANISM FOR METAL WORKING MACHINES.

APPLICATION FILED FEB. 17, 1904.

Fig 1



Witnesses

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# UNITED STATES PATENT OFFICE.

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## FEEDING MECHANISM FOR METAL-WORKING MACHINES.

No. 833,770.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed February 17, 1904. Serial No. 194,029.

*To all whom it may concern:*

Be it known that I, GEORGE L. BROWNELL, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in a Feeding Mechanism for Metal-Working Machines, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a top view of a screw-machine provided with a feeding mechanism embodying my invention. Fig. 2 represents a side view of part of the feeding mechanism in detail shown on a larger scale and in its normal position, and Fig. 3 represents a side view of that part of the feeding mechanism shown in Fig. 2 but in its extended position.

Similar figures of reference refer to similar parts in the different views.

My invention relates to a feeding mechanism by which operations upon the end of a rod—such as screw-cutting, milling, &c.—may be successively performed, comprising a clutching mechanism adapted to slide back and forth and seize and advance a rod on its forward movement; and my invention relates particularly to that portion of the mechanism by which back-and-forth motion is imparted to the rod-clutching mechanism, whereby the amplitude of its movement is increased.

In the accompanying drawings I have illustrated my invention with reference to screw-cutting machines in which a rod is successively fed by an endwise movement to a screw-cutting die.

Referring to the accompanying drawings, 1 denotes the framework of an ordinary screw-cutting machine having a die-holding member 2 for holding a screw-cutting die on the end of a rod 3, which is held during the operation by a clutching mechanism held in the sliding sleeve 4, to which a back-and-forth movement is given by the feeding mechanisms to which my present invention relates, as hereinafter described. The sliding clutch-holding sleeve 4 as it moves back releases the rod 3 and engages it again on its forward movement toward the screw-cutting die, enabling the screw-thread to be cut on the end of the rod 3, a piece of the rod of the desired length to be cut off, and the rod fed up to the die to be again threaded and cut

off, the operation being repeated until the entire rod is used up. These operations of the machine are common in screw-cutting and similar machines, and they will be well understood by those conversant with this class of machines without further detailed illustration or description.

The back-and-forth movement of the sleeve 4 is accomplished by engaging the sleeve by a forked arm 5, which is actuated by a feeding mechanism embodying my invention, consisting of a feed-rod 6, sliding in bearings 7 7 on the frame of the machine and provided with a radial pin 8 in the path of a rotating cam 9, which periodically pushes the rod in the direction of the arrow *a*. As the cam 9 leaves the pin the rod is reversed by a spring 10, acting against the frame and against a collar 11, attached to the rod 6.

Attached to the rod 6 by a set-screw 12 is a block 13, carrying studs 14 15 in its upper and lower surfaces, which are pivotally connected by diagonal bars 16 with similar studs 17 and 18 on blocks 19 and 20, said bars 16 forming, with their pivotally-connected blocks, the well-known mechanical device termed "lazy-tongs." The central block 13 is moved with the rod 6. The block 19 is attached by a set-screw 21 to a hub 22 on a bracket 23, attached to the frame of the machine. The block 20 is attached by a screw 26 to a hub 24 on the base 25 of the forked arm 5, which is capable of sliding on the rod 6, so that as the rod 6 is moved in the direction of the arrow *a*, carrying the central block 13 away from the fixed block 19, the block 20 will at the same time be moved away from the block 13 an equal distance. The movement of the block 20 therefore is double the movement of the rod 6. This arrangement enables a considerable movement of the forked arm 5 with a comparatively short movement of the rod 6, requiring an easy action of the cam 9. By interposing additional blocks between the blocks 13 and 20, capable of sliding on the rod 6, the movement of the forked arm can be still further magnified. In case it is desired to limit the movement of the rod 6 to the throw of the cam 9 the set-screw 12 is loosened and the set-screw 26 advanced through the hub 24 to engage the rod 6. The lazy-tongs then become inoperative, and the arm 5 is carried directly by the rod 6. By my invention the



forked arm 5 and connected clutch-holding sleeve may be moved the throw of the cam 9 or any desired multiple thereof.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a feeding mechanism, comprising a clutching device for seizing the work to be fed, the combination of a reciprocating feed-rod, a central block attached to said feed-rod, a block on one side of said central block attached to a fixed framework, a block on the opposite side of said central block connected with said work-clutching mechanism, a lazy-tongs connecting said central and said side blocks, and means for imparting a reciprocating movement to said feed-rod.

2. The combination with a fixed framework, of a lazy-tongs comprising three blocks in alinement and pivotally-connecting levers, a reciprocating feed-rod passing through said blocks, a work-clutching mechanism, a

forked arm connecting with said clutching mechanism, means for detachably attaching the central of said blocks to said feed-rod, means for attaching the block on one side of said central block to the fixed framework, and means for attaching said forked arm either to the feed-rod or to the block on the other side of said central block.

3. In a feeding mechanism, the combination of a feed-rod, a cam for advancing said rod, a spring for withdrawing said rod, a lazy-tongs operated by said feed-rod, one end of said tongs attached to the frame of the machine, and the other attached to clutching mechanism, whereby the work to be operated upon is advanced.

Dated this 3d day of February, 1904.

GEORGE L. BROWNELL.

Witnesses:

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