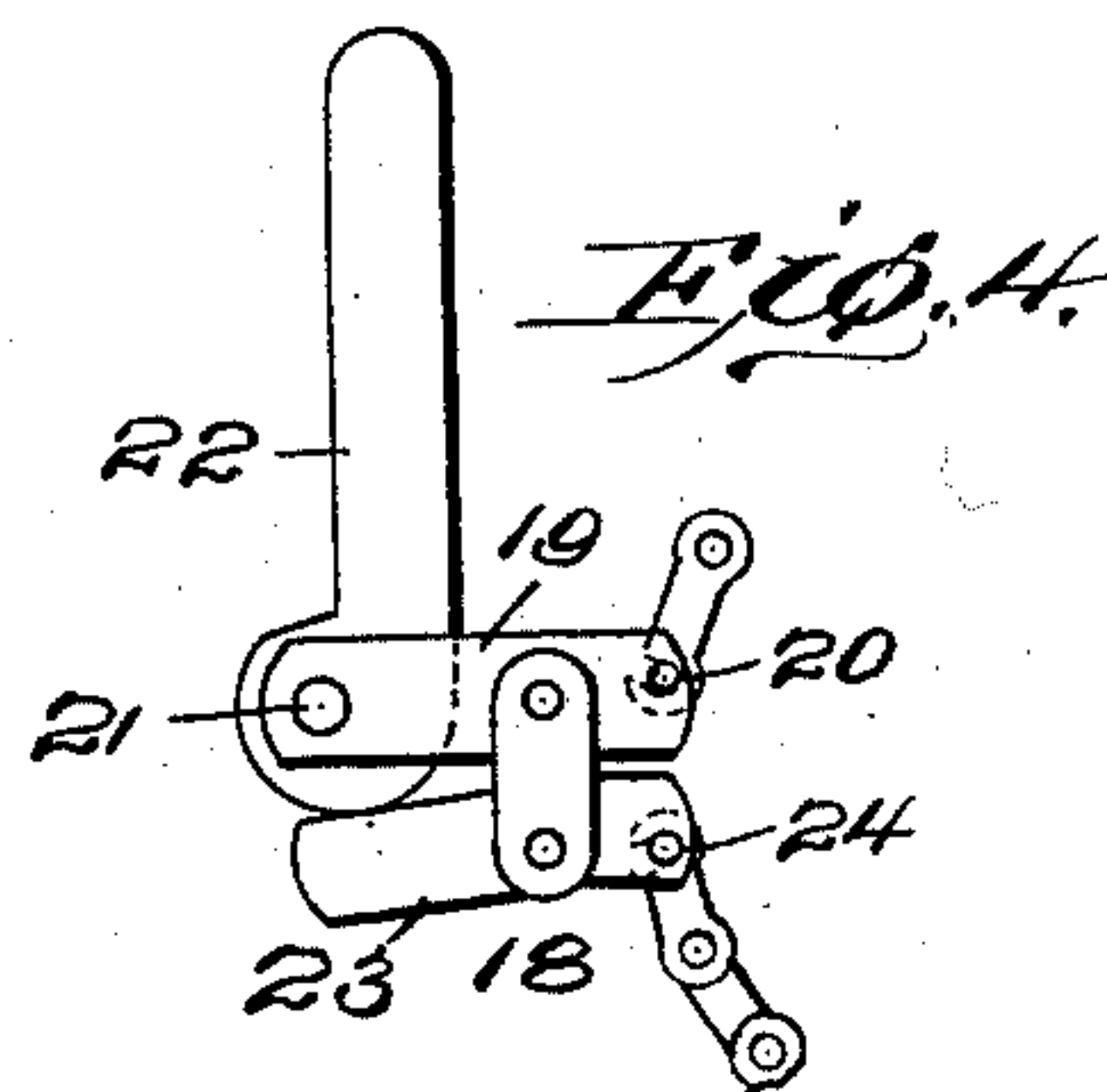
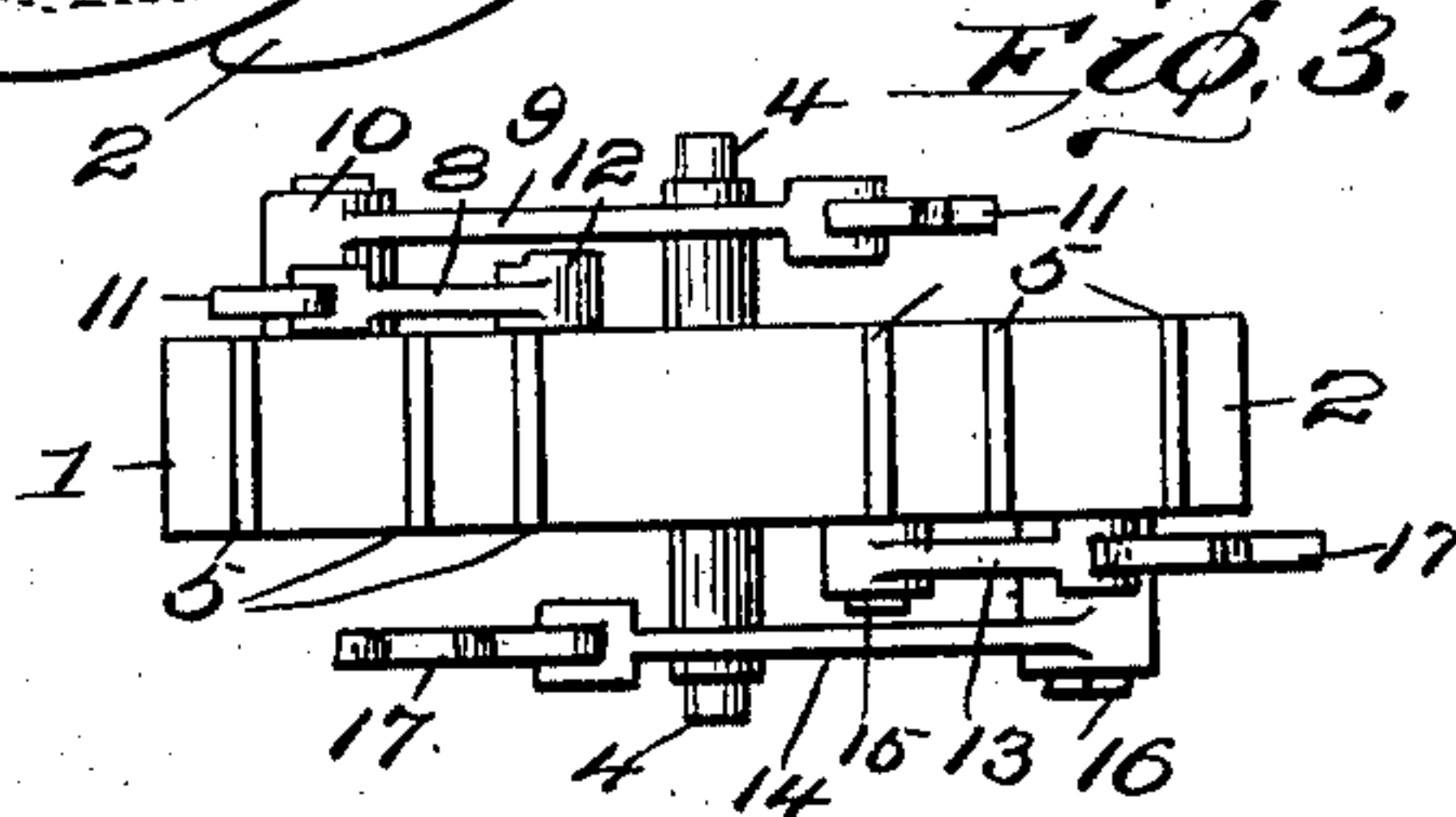
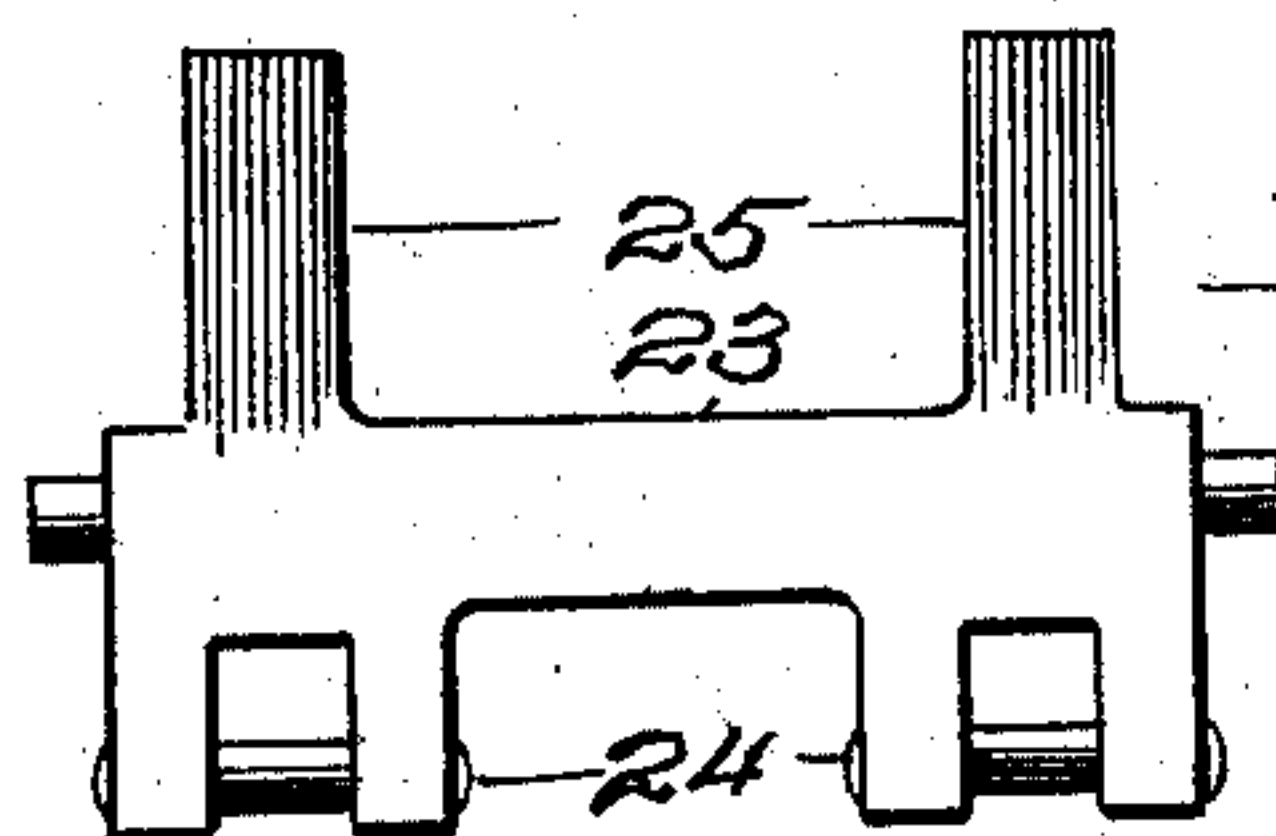
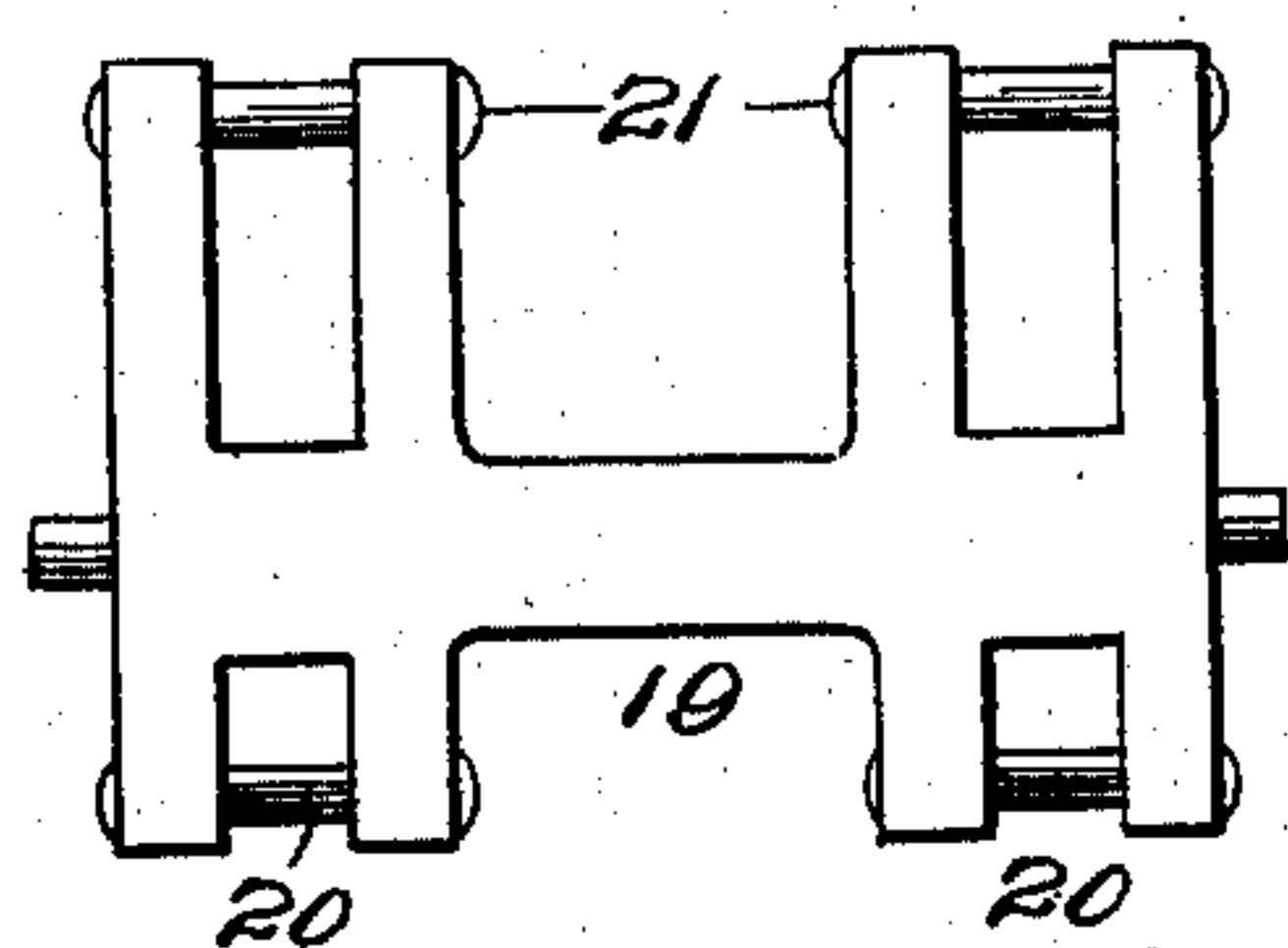
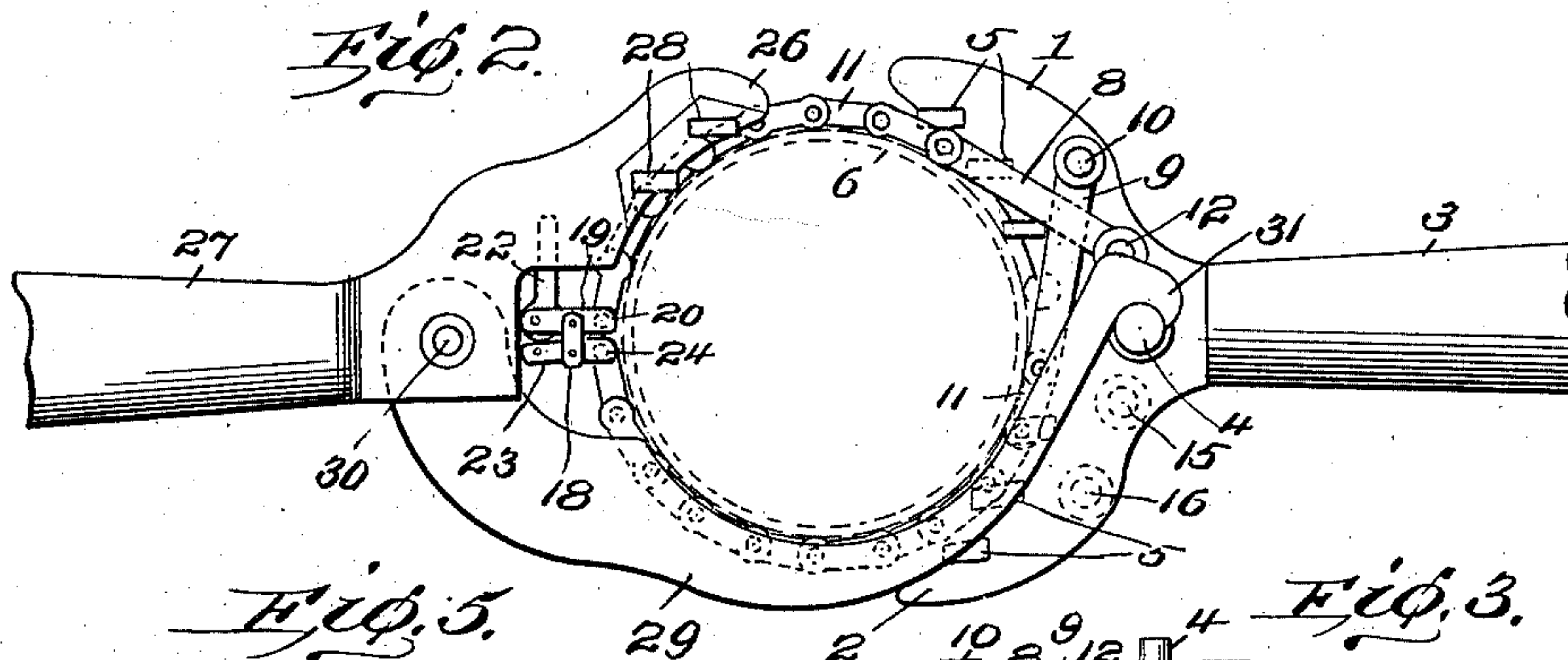
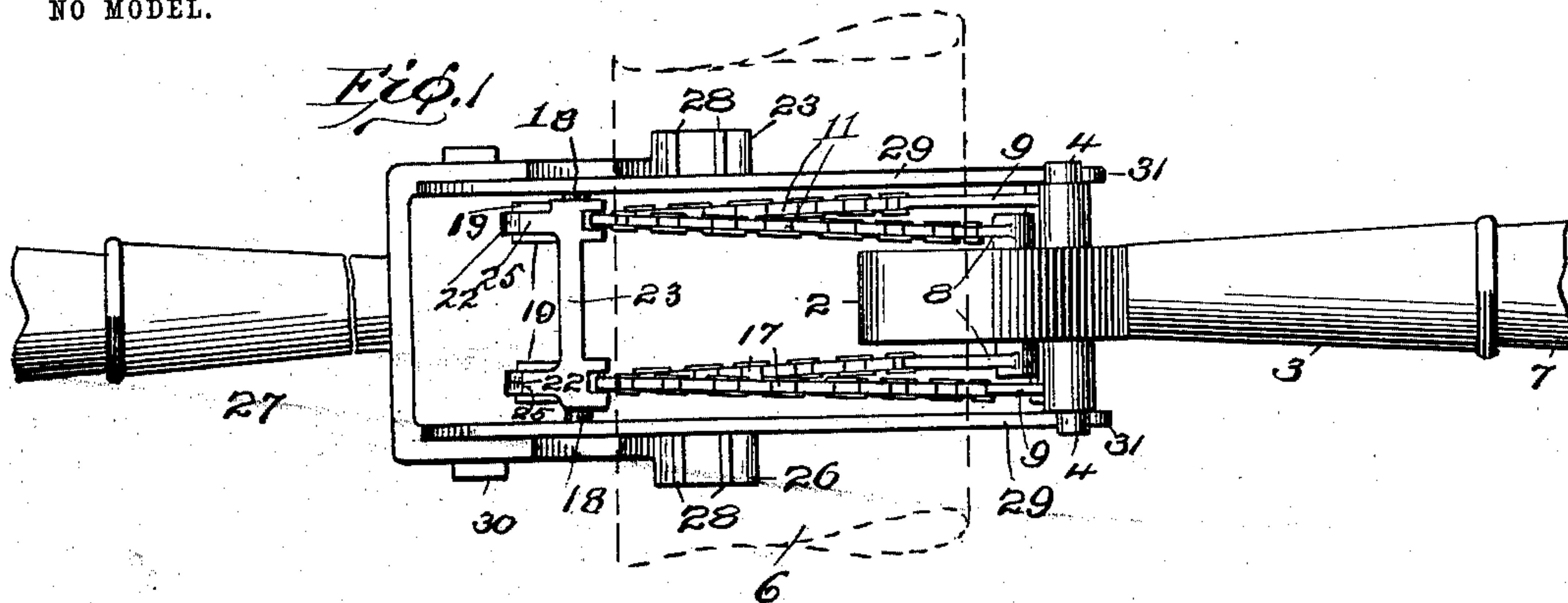


No. 750,440.

PATENTED JAN. 26, 1904.

W. H. DOWNING.
DOUBLE ACTING CHAIN WRENCH.
APPLICATION FILED NOV. 4, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM H. DOWNING, OF PARKERSBURG, WEST VIRGINIA, ASSIGNOR OF
ONE-HALF TO JOHN W. SOLLEY, OF PARKERSBURG, WEST VIRGINIA.

DOUBLE-ACTING CHAIN WRENCH.

SPECIFICATION forming part of Letters Patent No. 750,440, dated January 26, 1904.

Application filed November 4, 1903. Serial No. 179,840. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DOWNING, a citizen of the United States, residing at Parkersburg, in the county of Wood and State of West Virginia, have invented certain new and useful Improvements in Double-Acting Chain Wrenches; 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.

This invention relates to pipe wrenches or tongs, and pertains especially to the class of link or chain wrenches.

The object of the invention is to provide certain improvements in chain tongs or wrenches and in a coacting spanner whereby various size pipe, and particularly well tubing or casing, may be more expeditiously operated.

A further object of the invention is to provide a double-acting link or chain wrench having rigid or fixed jaws in or on each of which is pivoted a pair of arms having one end of chains connected thereto and a cam clamp or coupling at the other end of the chains to operate the latter and the spanner.

A still further object of the invention is to provide a chain pipe-wrench having jaws rigid with the handle-socket, a pair of overlapping chain-arms pivoted on one side of one jaw and like arms pivoted on the opposite side of the other jaw, pivots or fulcrum-posts centrally between the jaws, and peculiar spanner-hooks to fit said posts, so as to coact with the wrench.

With these and various other objects in view the invention consists in the arrangement for a chain wrench of the chain-arms, the pivots or fulcrum-posts, the spanner connected to the posts, so as to leave the handle-socket of the spanner projecting opposite the handle-socket of the wrench, thereby affording means for increasing the leverage and producing a double grip, and the chain coupling or clamp to simultaneously effect and release the double grip.

In the accompanying drawings, forming a part of this application, Figure 1 is an elevation showing the application of the invention. Fig. 2 is a top view with the device in position as shown in Fig. 1. Fig. 3 is a front view

of the wrench-jaws. Fig. 4 is a detail side elevation of the chain-coupling. Fig. 5 is an elevation of one part of the chain-coupling. Fig. 6 is a like view of the other part of the chain-coupling.

The same numeral - references denote the same parts throughout the several views of the drawings.

The jaws 1 and 2 are made in with or formed on the handle-socket 3, with pivots or fulcrum-posts 4 projecting from each side or face of the wrench centrally between the jaws, and the jaws have bits 5 standing in the path of a pipe or well-casing section 6 and so arranged as to grip the casing for screwing and unscrewing, according to the movement of the handle 7, without turning the wrench from side to side.

One face of the jaw 1 is provided with a pair of links or arms 8 and 9, the latter being pivoted at 10 and overlapping the former and extending across to the jaw 2, where it is secured to one portion of the top chain 11. The arm 8 is pivoted at 12 and extends toward the end of the jaw 1, where it is secured to the other portion of the top chain. The opposite face of the other jaw 2 has a pair of overlapping links or arms 13 and 14, pivoted at 15 and 16, respectively, and positioned relative to the jaw 2 the same as the arms 8 and 9 are to the jaws 1, and the arms 13 and 14 have the portions of the bottom chain 17 connected thereto. The chains 11 and 17 each have a two-part coupling, connected by links 18, one part, 19, having one end of the chains 11 and 17 attached thereto by bolts 20 and provided with pivot-bolts 21 for cam-levers 22, and the other part, 23, having bolts 24, to which the other ends of the chains are hooked, and fulcrum-levers 25, having an inclined face, against which the cam-levers work.

The spanner has jaws 26, rigid with the handle-socket 27, and the jaws are provided with bits 28. Spanner-arms 29 are pivoted at 30 and terminate in hooks 31, with sufficient space between said arms to permit them to straddle the wrench when the hooks are placed on the fulcrum-posts 4.

It is obvious that after the chains have been

coupled around the pipe or casing and the spanner hooked to the fulcrum-posts the cam-levers are operated to clamp the chains about the pipe, which will draw the spanner against the pipe and cause the spanner-bits and wrench-bits to simultaneously impinge the pipe or casing. In this position the handles of the wrench and spanner point in opposite directions from the pipe and conveniently afford any desired leverage required to either screw or unscrew the pipe or casing without changing the position of the wrench and spanner.

It will be understood that pipes or casings of various diameters may be operated by lengthening or shortening the chains and by changing the spanner-arms, a set of which is provided for each implement.

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

1. The combination, with a chain wrench, having fulcrum-posts, of a spanner having a fixed jaw, and pivoted arms to straddle the wrench and hook to the said post.

2. The combination, with a chain wrench, of a two-part chain-coupling one part thereof forming a fulcrum-lever, a cam-lever carried by the other part and working against the fulcrum-lever, and the links connecting the parts.

3. The combination, with the chains, and means for clamping them together, of the rigid jaws having a handle-socket, and the links pivoted to the jaws and connecting the chains with the jaws.

4. The combination, with the chains, and means for clamping them together, of the rigid jaws having a handle-socket, a pair of links pivoted to the face of one jaw, and a pair of links pivoted to the opposite face of the other jaw.

5. The combination, with the rigid jaws having a handle-socket, a pair of links pivoted to each jaw, and a pair of chains attached to the links, of a two-part chain-coupling one part thereof forming a fulcrum-lever and the other part having a cam-lever working against the fulcrum-lever.

6. The combination, with the jaws having

fulcrum-posts, a pair of links pivoted to each jaw, a pair of chains attached to the links, and the two-part chain-coupling, of the spanner carried by the said posts astraddle the chains, jaws and coupling, the latter being operated to close the chains and the spanner simultaneously.

7. In a chain wrench, the combination, with the rigid jaws having bits, and the chain-coupling, of a pair of overlapping arms pivoted to the face of one jaw, and a pair of overlapping arms pivoted to the opposite face of the other jaw and connecting the chains to the jaws.

8. In a double-acting implement for screwing and unscrewing well-casing sections, the combination, with the wrench-jaws rigid with a handle-socket and having bits, arms pivoted to the jaws, fulcrum-posts projecting centrally between the jaws, and the chains connected to the jaws by the arms, of the spanner-jaw rigid with a handle-socket and having bits, a pair of arms pivoted to the spanner-jaw and terminating in hooks to fit the fulcrum-posts, and the chain coupling or clamp to effect and release the grip of the wrench and the spanner.

9. In a wrench, the combination of the chains pivotally connected to the wrench-jaws, a spanner having jaws to straddle the chains, spanner-arms connected to the wrench-jaws astride the latter and said chains, and a coupling device to open and close the chains and thereby effect simultaneous coaction of the spanner and wrench jaws.

10. In a wrench, the combination of the chains having a link leverage connection with the wrench-jaws, a spanner having jaws between which the chains are coupled, arms pivoted to the spanner-jaws and detachably connected to the wrench-jaws astride the latter and the chains, and a coupling device to open and close the chains and thereby effect simultaneous coaction of the spanner and the wrench jaws.

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

WILLIAM H. DOWNING.

Witnesses:

WM. M. COX,
JOHN F. LAIRD.