

966,412.

H. ALINDER.
POWER HAMMER.
APPLICATION FILED JULY 11, 1908.

Patented Aug. 9, 1910.

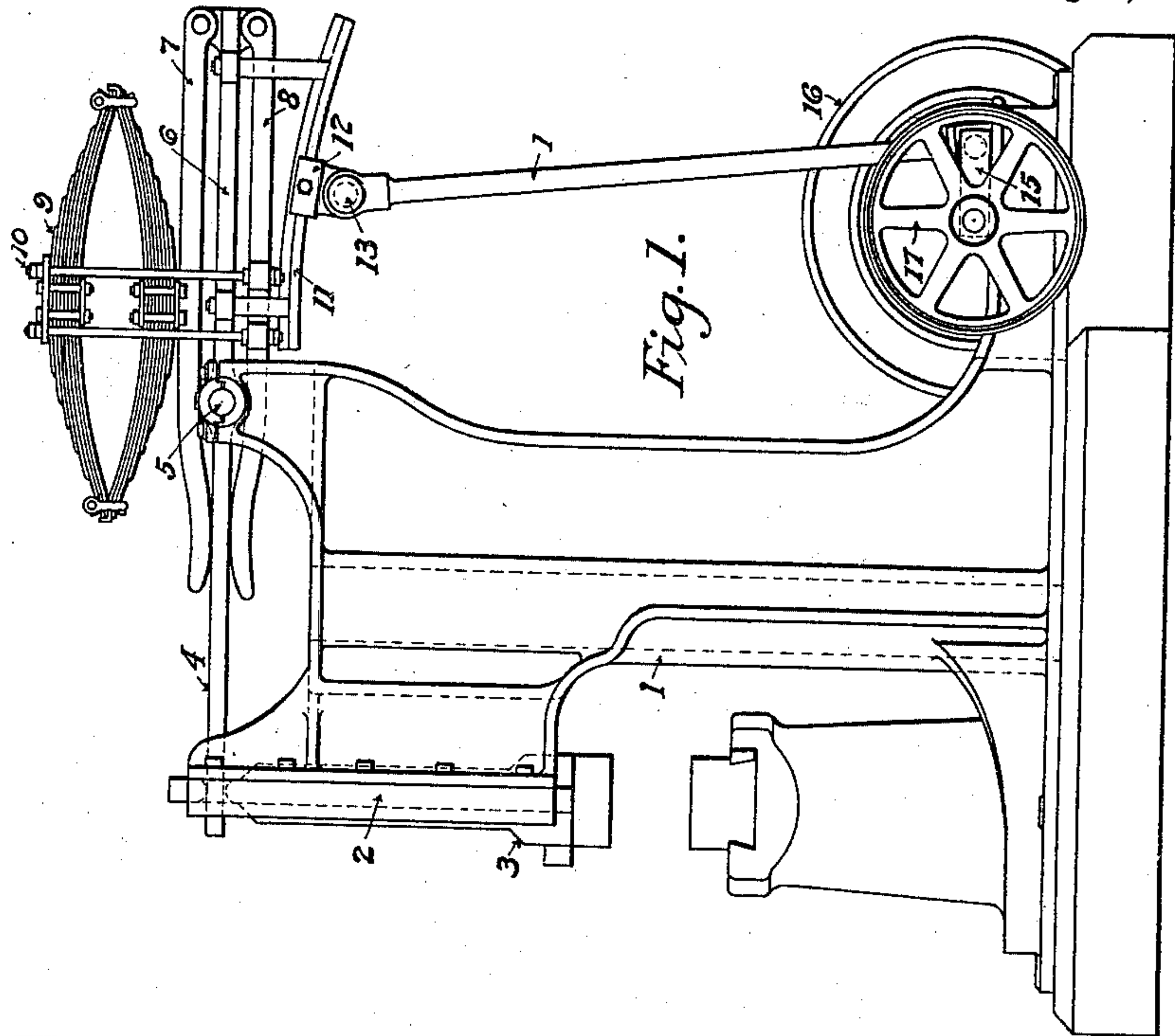


Fig. 1.

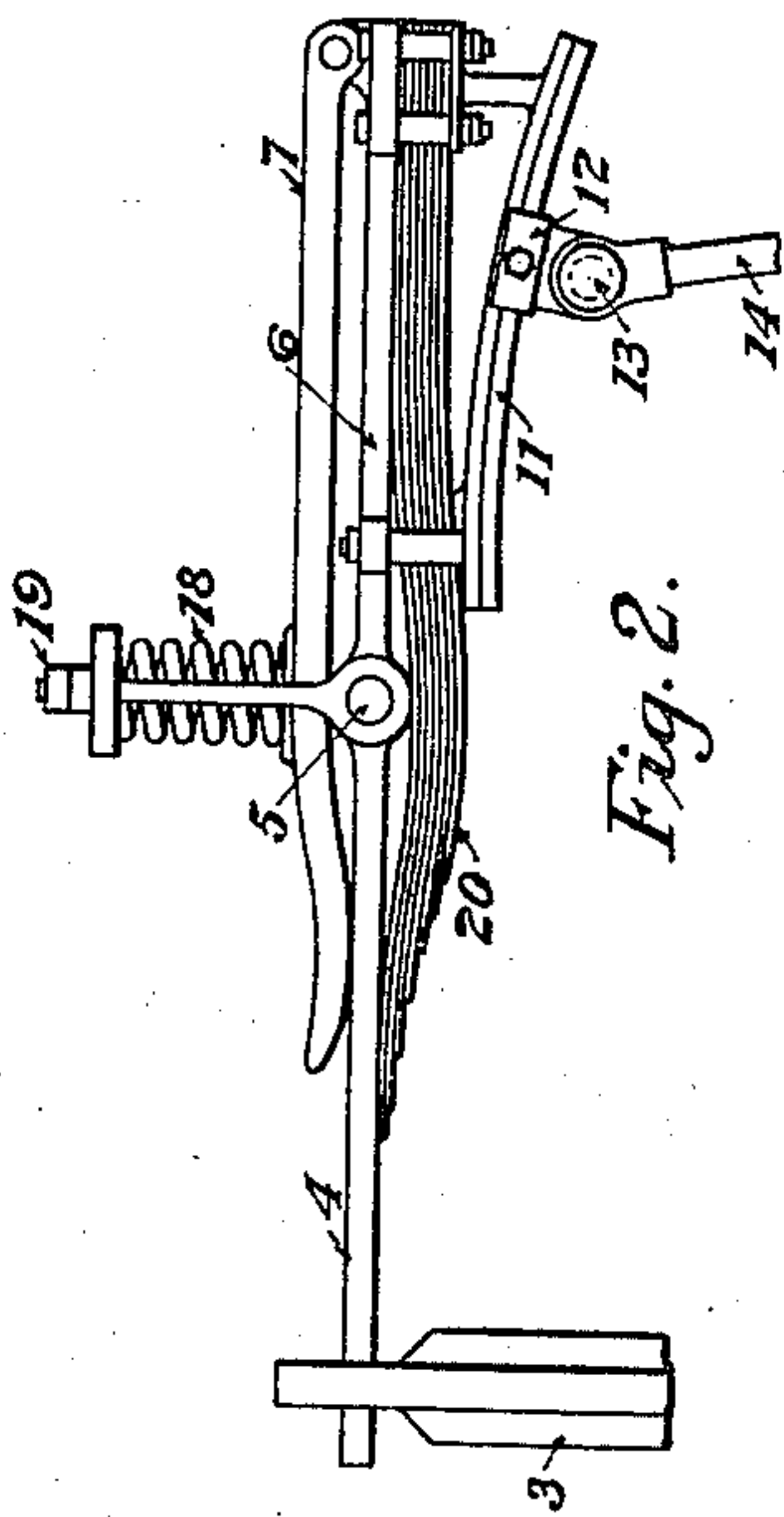


Fig. 2.

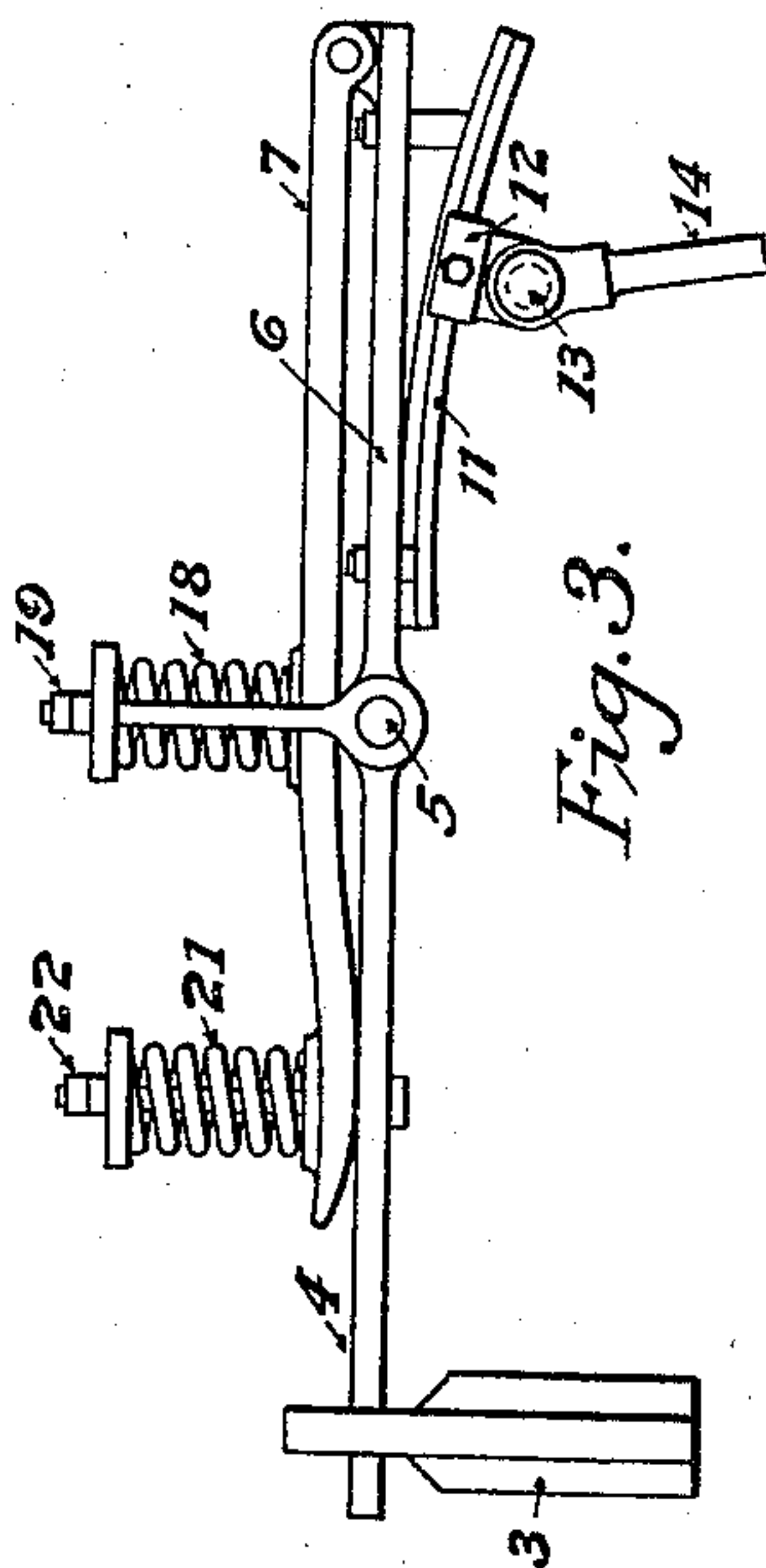


Fig. 3.

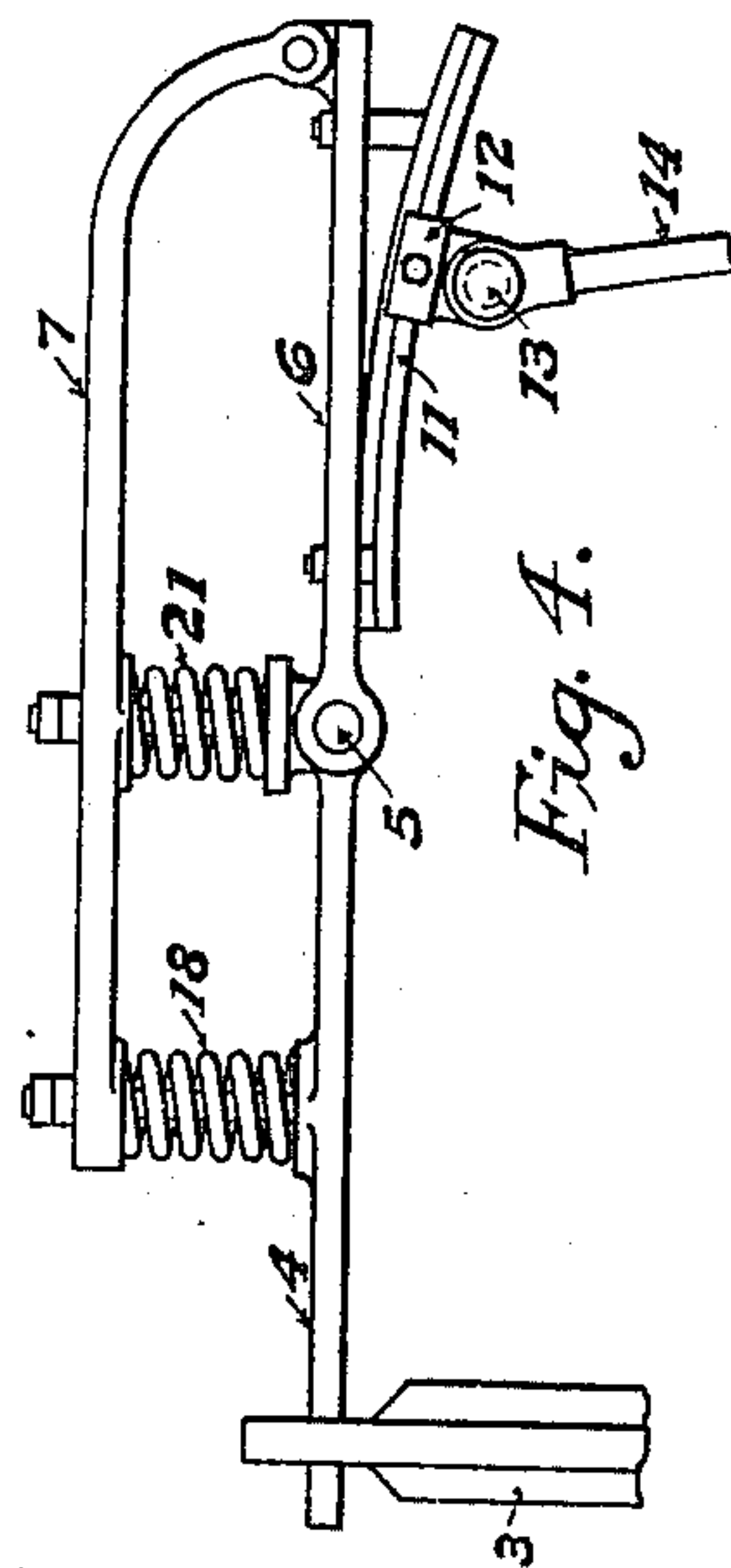


Fig. 4.

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POWER-HAMMER.

966,412.

Specification of Letters Patent.

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Application filed July 11, 1908. Serial No. 443,152.

To all whom it may concern:

Be it known that I, HENRY ALINDER, a subject of the King of Sweden, but having declared his intention of becoming a citizen of the United States of America, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and useful Improvement in Power-Hammers, of which the following is a specification.

My invention relates to improvements in power hammers known as tilt or dead stroke hammers, and the object of the invention is to provide a power hammer having a simple spring construction which combines elasticity, adjustment and strength in the operating parts of the hammer. It is adjustable as to the length of the stroke and force of the blow as required by the piece to be forged. The hammer will permit working on both the wide and narrow side of a flat bar without any adjustment. I attain these objects by the mechanism illustrated in the accompanying drawing in which,—

Figure 1 is a side view of the entire hammer; Fig. 2, Fig. 3, and Fig. 4 are side views of a part of the hammer showing modifications of my invention.

Similar figures refer to similar parts throughout the several views.

The power hammer consists of a frame 1, with guides 2 in which the hammer head 3 is movable up and down. The hammer head 3 is connected to arm 4 of the two-armed lever, which serves to actuate the hammer, the connection being made by inserting the fore end of said arm 4 into an oblong hole in top of hammer head 3. The arm 4 is pivoted to a horizontal pin 5 turning in bearings of frame 1. On the pin 5 is pivoted another arm 6, constituting the other arm of the said two-armed lever. At the rear end of arm 6 are hinged auxiliary arms 7 and 8, the fore ends of which embrace arm 4, as illustrated in Fig. 1, said auxiliary arms 7 and 8 serving to yieldingly transmit the power for actuating the hammer from said arm 6 to arm 4 by means of spring 9. Said spring 9 resting on top of arm 7, is

connected to arm 8 by bolts 10. To the under side of arm 6 is secured a straight or curved guide 11, carrying a sliding piece 12 connected by pin 13 to a crank rod 14, the lower end of which connects to a crank shaft 15, turning in bearings of frame 1 and carrying a flywheel 16, and tight and loose pulleys 17.

Referring to Fig. 2 and Fig. 3,—a helical spring 18 rests on top of arm 7 and is by means of eye bolts 19 connected to pin 5. Said spring 18 serves to substitute the action of spring 9 on arm 7 shown in Fig. 1. Arm 8 shown in Fig. 1, is in Fig. 2 substituted by a leaf spring 20 rigidly fixed to the under-side of arm 6 and embracing arm 4 with its fore end. Said spring 20 serves to substitute the action on arm 4 by arm 8 shown in Fig. 1. In Fig. 3, a helical spring 21 rests on the fore end of arm 7 and is connected to arm 4 by means of bolt 22. Said spring 21 serves to substitute the action on arm 4 by arm 8 shown in Fig. 1.

Referring to Fig. 4, this view shows a modification of my spring construction shown in Fig. 3, and differs only from Fig. 3 in arranging the springs. Spring 18 above pin 5 of Fig. 3, has the same action on arm 4 as spring 18 of Fig. 4, and the same may be said of spring 21 of Fig. 3 and spring 21 above pin 5 in Fig. 4.

I claim:

1. In a power hammer, the combination of a frame, two arms pivoted to the frame, an auxiliary arm pivoted to one of said arms and transmitting force directly to the other said arm, and elastic means coacting with the auxiliary arm to maintain or tending to maintain said frame-pivoted arms in a definite relative position the one to the other.

2. In a power hammer, the combination of a frame, two arms pivoted to the frame, auxiliary arms pivoted to the frame-pivoted arms and transmitting force directly thereto, and a single elastic means coacting with said auxiliary arms to maintain or tending to maintain the said frame-pivoted arms in a definite relative position the one to the other.

3. The combination of a frame, two arms

pivoted to each other and to said frame, an auxiliary arm pivoted to the free end of one of said arms and coacting directly with the other said arm to transmit force, and elastic means to hold or tending to hold all of
5 said arms in a definite relative position one to the other.

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

HENRY ALINDER.

Witnesses:

G. F. DE WEIN;
H. C. CASE.