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PATENTED MAY 28, 1907.

L. WILSON & F. I. MATTHEWS.

POWER HAMMER.

APPLICATION FILED JAN. 26, 1906.

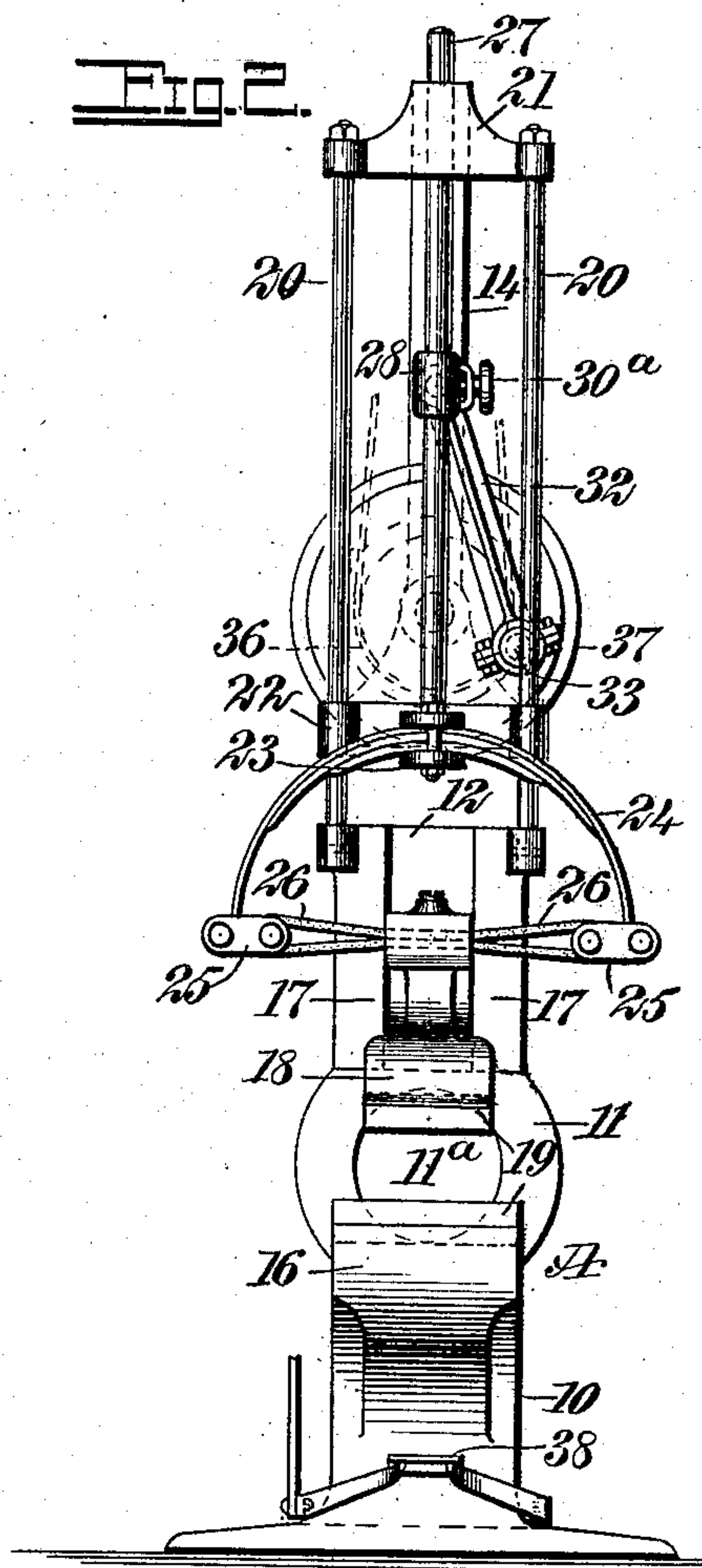
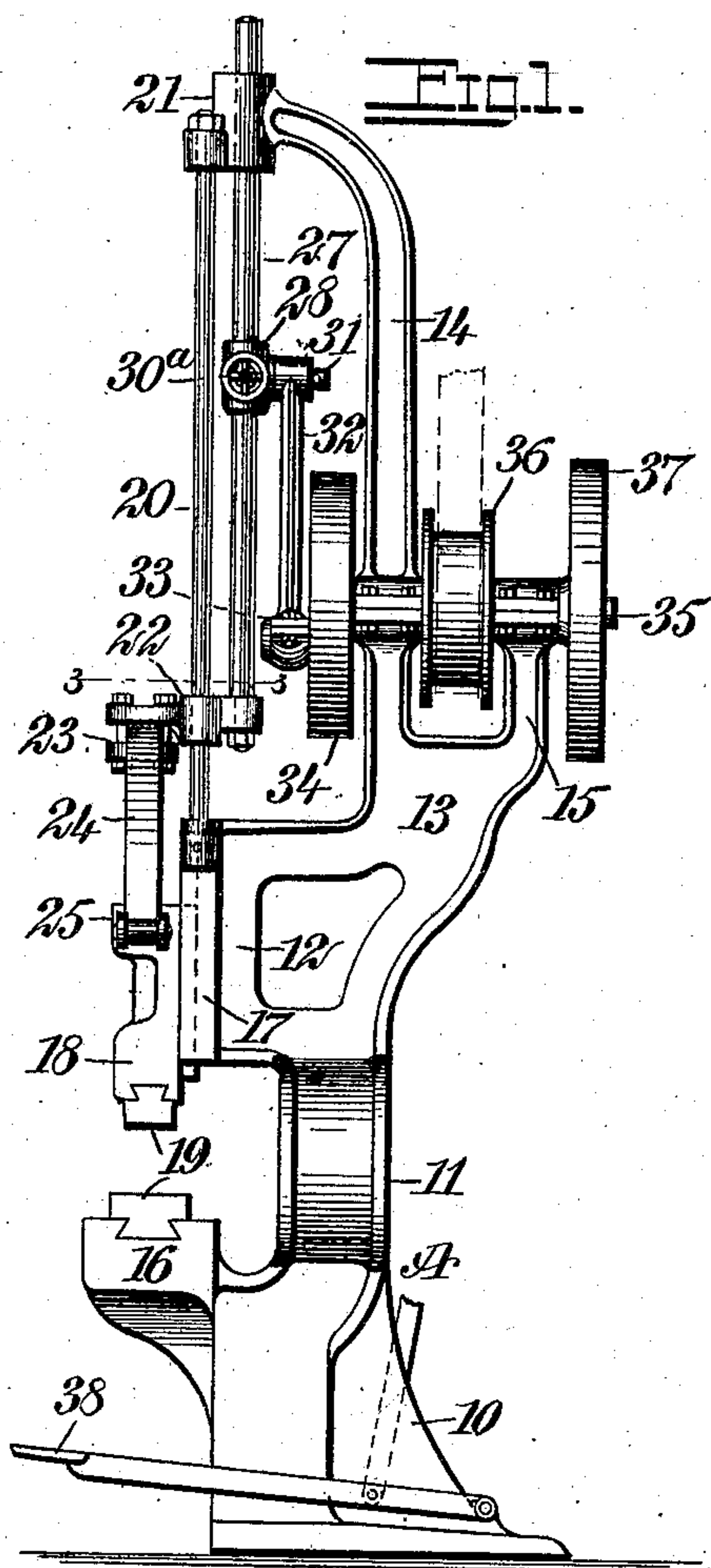
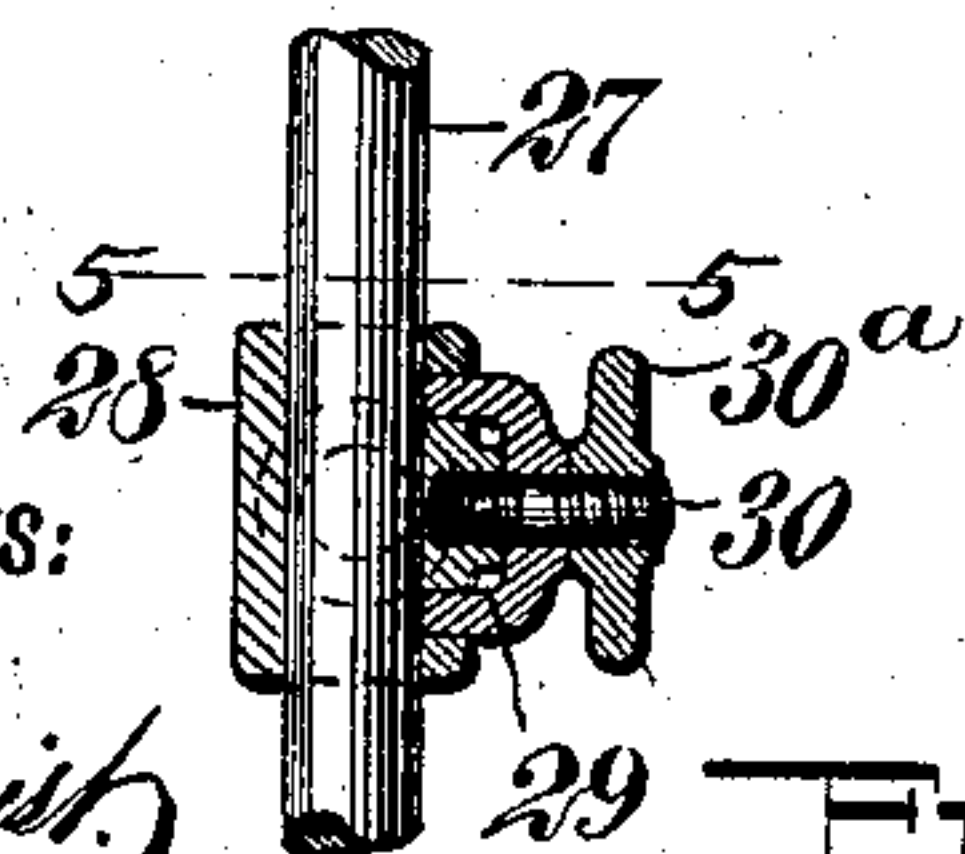


Fig. 4.



WITNESSES:

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Fig. 5.

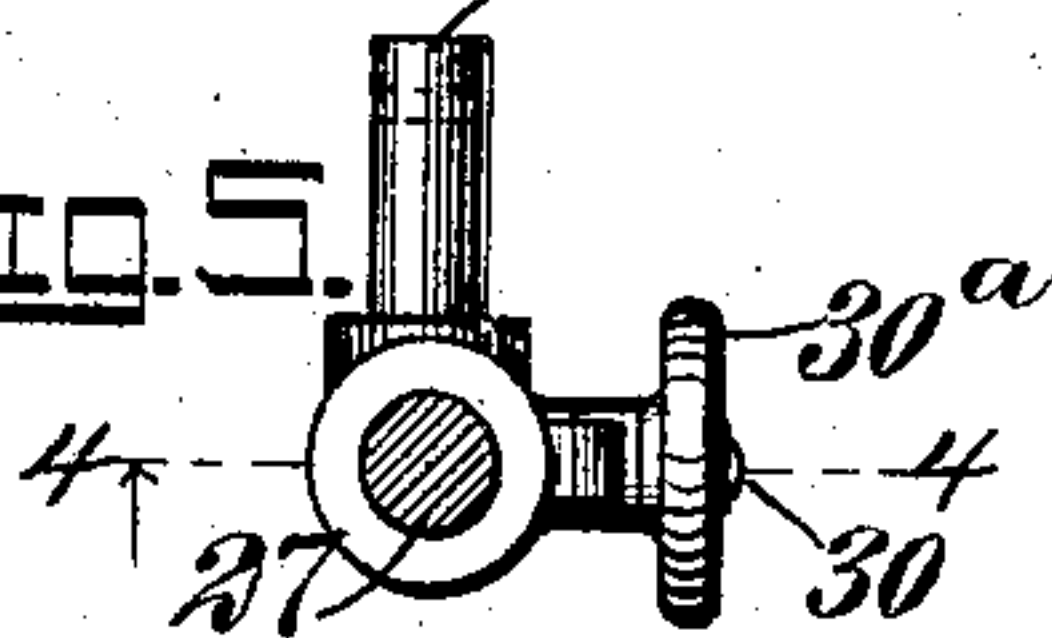
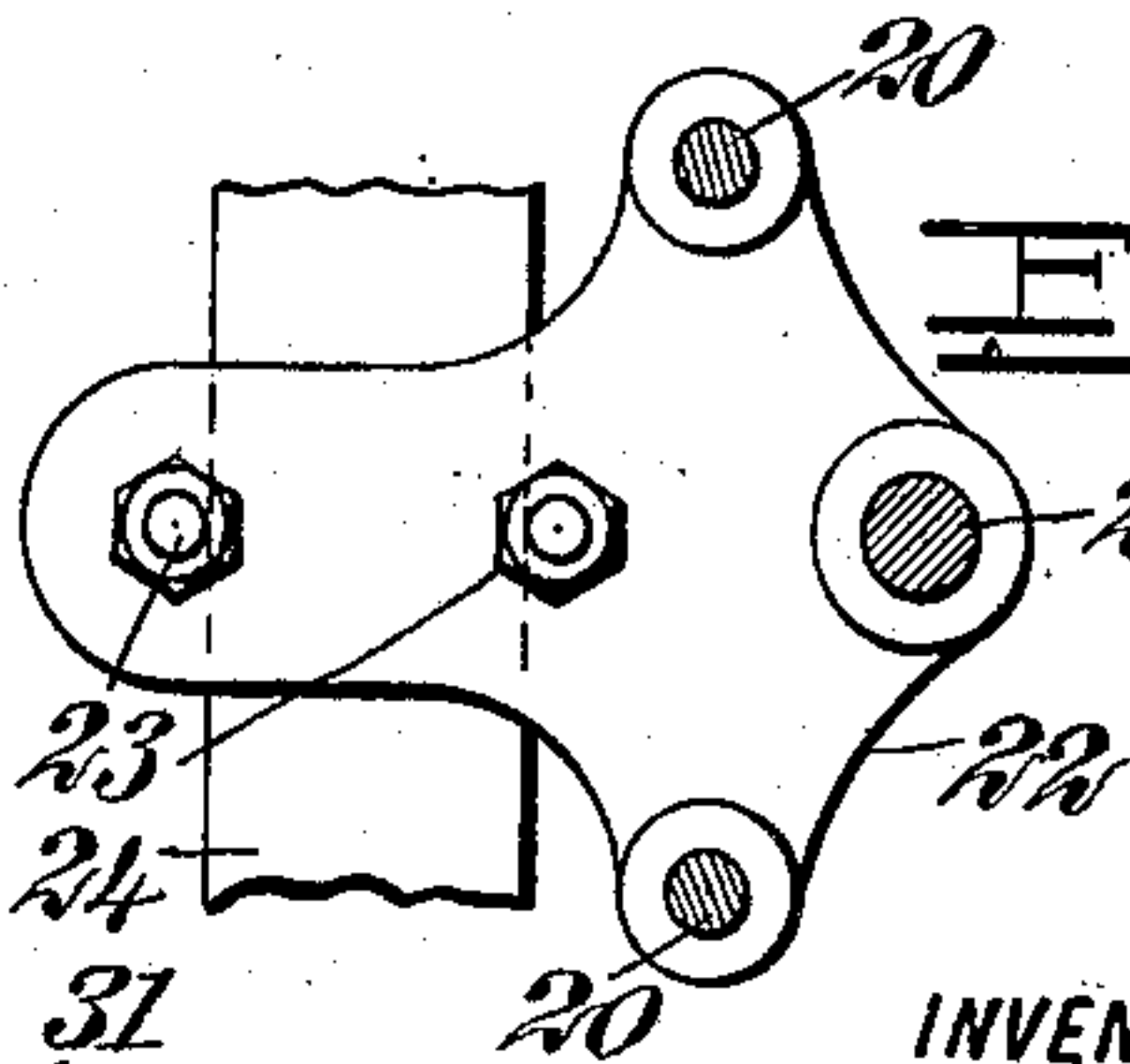


Fig. 3.



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LEWIS WILSON AND FRANCIS I. MATTHEWS, OF OAKLAND, CALIFORNIA.

POWER-HAMMER.

No. 855,151.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed January 25, 1905. Serial No. 242,595.

To all whom it may concern:

Be it known that we, LEWIS WILSON and FRANCIS I. MATTHEWS, both citizens of the United States, and residents of Oakland, in the county of Alameda and State of California, have invented a new and Improved Power-Hammer, of which the following is a full, clear, and exact description.

Our invention relates to power-hammers, its principal object being to provide a convenient apparatus especially adapted for operation upon tires and other continuous bands.

It consists in the various features and combinations hereinafter described and more particularly claimed.

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

Figure 1 is a side elevation of one embodiment of our invention, parts being broken away; Fig. 2 is a front elevation thereof; Fig. 3 is a horizontal sectional detail on the line 3—3 of Fig. 1; Fig. 4 is a vertical sectional detail through the connecting-sleeve, it being taken on the line 4—4 of Fig. 5; and Fig. 5 is a horizontal section on the line 5—5 of Fig. 4.

A frame A is shown, comprising a base portion 10 from one side of which rises a standard 11, conveniently provided with an opening 11^a through which work may pass, and having at its upper end a lateral projection 12 extending over the base and an extension 13 from which rises an inner arm 14 and a shorter outer arm 15. Offset from the base at one side, and projecting therefrom at some distance above the bottom, is an anvil 16, preferably cast integrally with the frame. The portion 12 of the frame is provided with ways 17, in which a hammer 18 is mounted to slide. Both the anvil and hammer may have removable contact-faces 19. Extending upwardly from the frame-portion 12 above the ways are separated guide-rods 20, 20, held at their upper ends by a bracket 21 formed as a continuation of the arm 14. Movable upon these rods is a cross-head 22, with which coacts a clamp 23 for securing upon the cross-head, above the hammer, a spring 24, which is shown as of the compound leaf type. This spring is conveniently connected with the hammer by means of links 25 and flexible straps 26, as is customary in this class of apparatus. At the opposite side of the guide-rods from the spring, and lying in a

vertical plane at one side of that in which the hammer operates, is fixed a rod 27, which may be guided at its upper end by passing through an opening in the bracket 21. Surrounding this rod is a sleeve 28 which may be frictionally secured to the rod by a block 29 forced against said rod by a screw 30 having threaded upon it a hand-wheel 30^a. From this sleeve projects a stud 31, which is connected by a downwardly-extending link 32 with rotatable driving mechanism. In the present instance this consists of a crank-pin 33 carried by a disk 34 fast upon a shaft 35 journaled in the arms 14 and 15. Upon the shaft may be fixed a pulley 36, to which power may be applied from any suitable source. The shaft also carries the usual balance-wheel 37.

The apparatus may be provided with any convenient controlling devices, which may be governed by a treadle 38 fulcrumed upon the base.

The use of our improved hammer will be obvious, but it is desired to call attention to certain advantages accruing. When tires or similar bands of relatively small diameter are to be welded, they may be placed upon the anvil and allowed to depend from it, its offset permitting them to occupy a vertical position without their contacting with the base portion of the frame. If such bands are of too great diameter they may be inverted, extending over the hammer, the position of the driving mechanism, wholly situated at the opposite side of the guide-rods, permitting this. These guides furnish a guard for the driving mechanism and keep the work and other objects out of contact with it. By varying the position of the connecting-sleeve upon the rod the stroke of the hammer may be altered to suit different classes of work, while the downward extension of the link from this sleeve to the crank-pin shortens and preserves a better balance of the frame and economizes metal. At the same time the adjusting device for the sleeve is kept within easy reach of the operator. The guiding in right lines of both the hammer and the cross-head carrying the spring, avoids imparting the objectionable swaying motion to said spring which is common in hammers of this class, and the guide-rods by which this is accomplished effectively brace the upper portion of the frame, rendering it possible to make it comparatively light.

Having thus described our invention, we

claim as new and desire to secure by Letters Patent:—

1. In a power hammer, a frame having vertical ways upon the front, a hammer carrying
5 ram with slides movable in said ways, a curved arm extending above the ways and forming a recess rearwardly from the line of said ways, said arm carrying bearing boxes
10 for the crank-shaft and having its upward end projecting forward substantially into line with the ways, a crank-shaft in said boxes, guide-rods having their upper ends fixed to the said upper projection of the frame
15 and the lower ends to the ways, a cross-head slidable upon said guides, a rod located behind the cross-head and forming a connection between it and the crank, arms projecting forwardly from the cross-head, a segmental or bow spring having its center fixed
20 to said arms in direct line with the hammer carried by the ram, and an anvil supported in the same line below the hammer.

2. In a power hammer, the combination with the anvil of a frame having ways, a
25 hammer movable upon the ways, guides rising from the frame, a cross-head having a forwardly extended arm and movable upon the

guides, a spring fixed to the arm and connected with the hammer, a rod extending from the cross-head, rotatable driving mechanism, a sleeve variable in position upon the rod and provided with a stud, and a link connecting the stud and driving mechanism. 30

3. In a power hammer, the combination with a frame and the anvil carried thereby, 35 of a hammer guided and movable upon the frame and coacting with the anvil, rotatable driving mechanism, a cross-head, guides upon which it is slidable, a rod guided and movable in unison with the cross-head, a 40 sleeve adjustable upon the rod, a link connecting the sleeve with the driving mechanism, and an elastic connection between the cross-head and the hammer, said elastic connection being movable in the direct line of 45 movement of the hammer.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

LEWIS WILSON.

FRANCIS I. MATTHEWS.

Witnesses:

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FREDA R. GROTHEER.