

No. 751,522.

PATENTED FEB. 9, 1904.

A. A. KOCH.  
POWER HAMMER.

APPLICATION FILED FEB. 27, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig 1

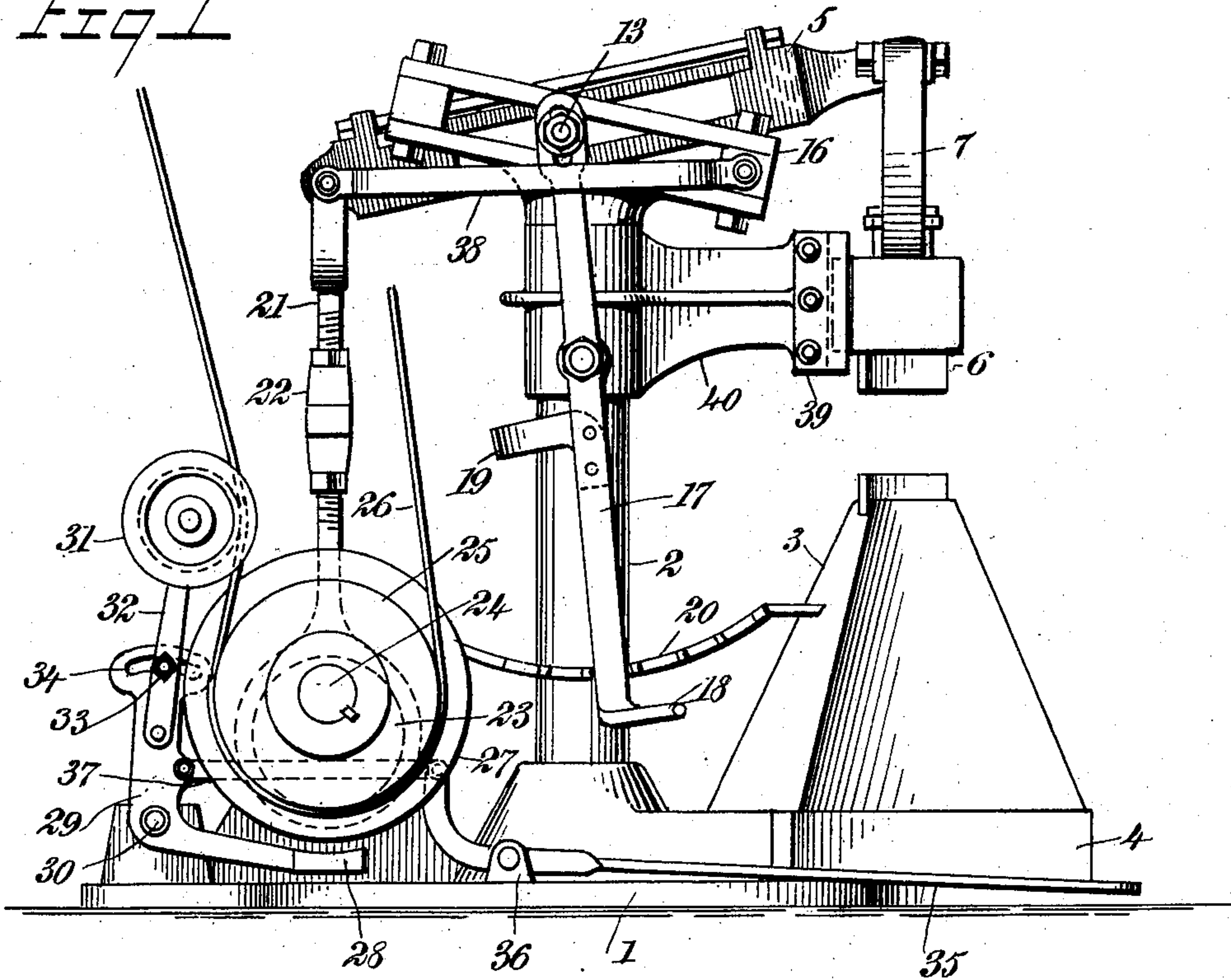
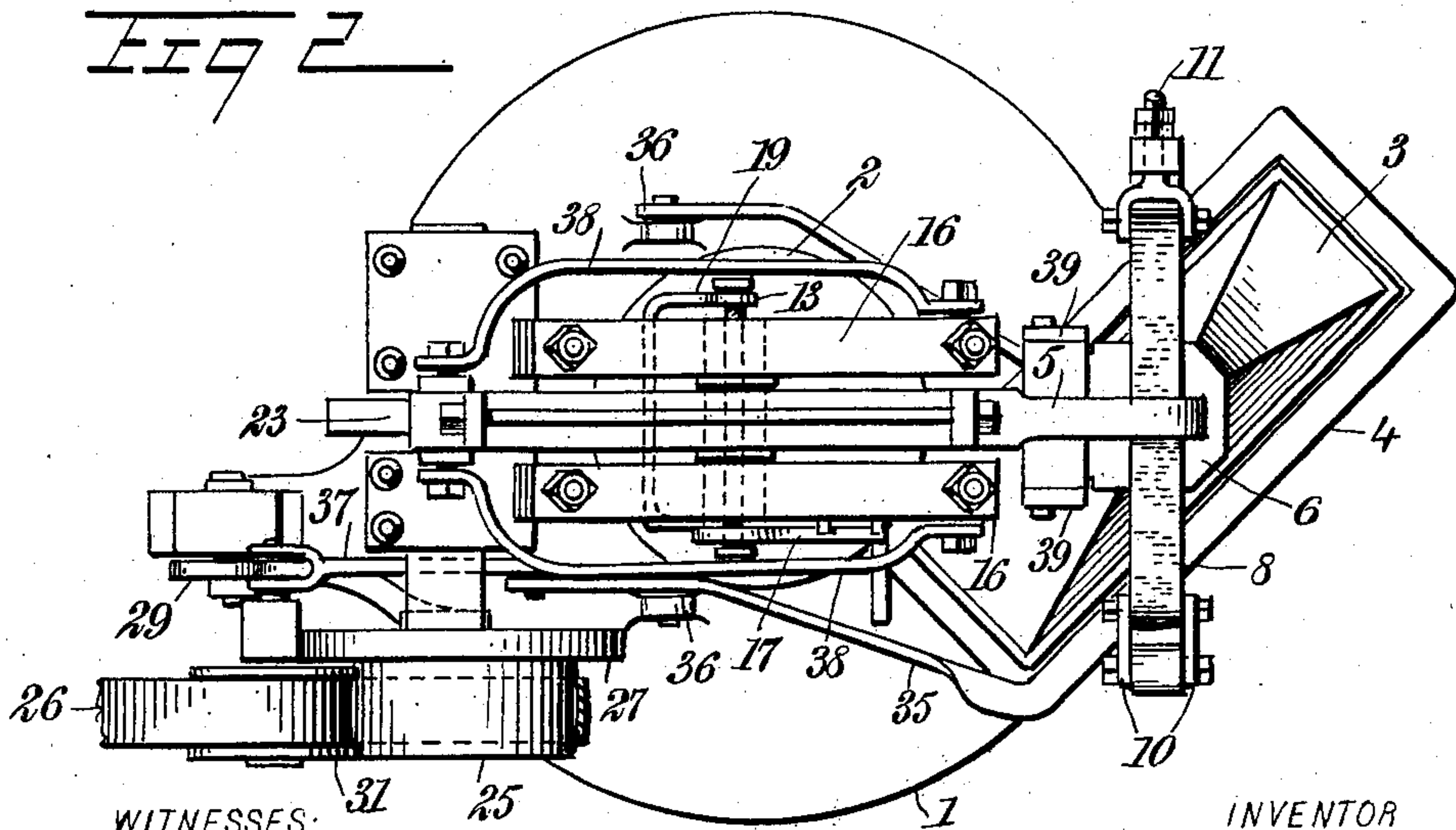


Fig 2



WITNESSES:

H. Walker  
C. R. Ferguson

INVENTOR

Arthur A. Koch

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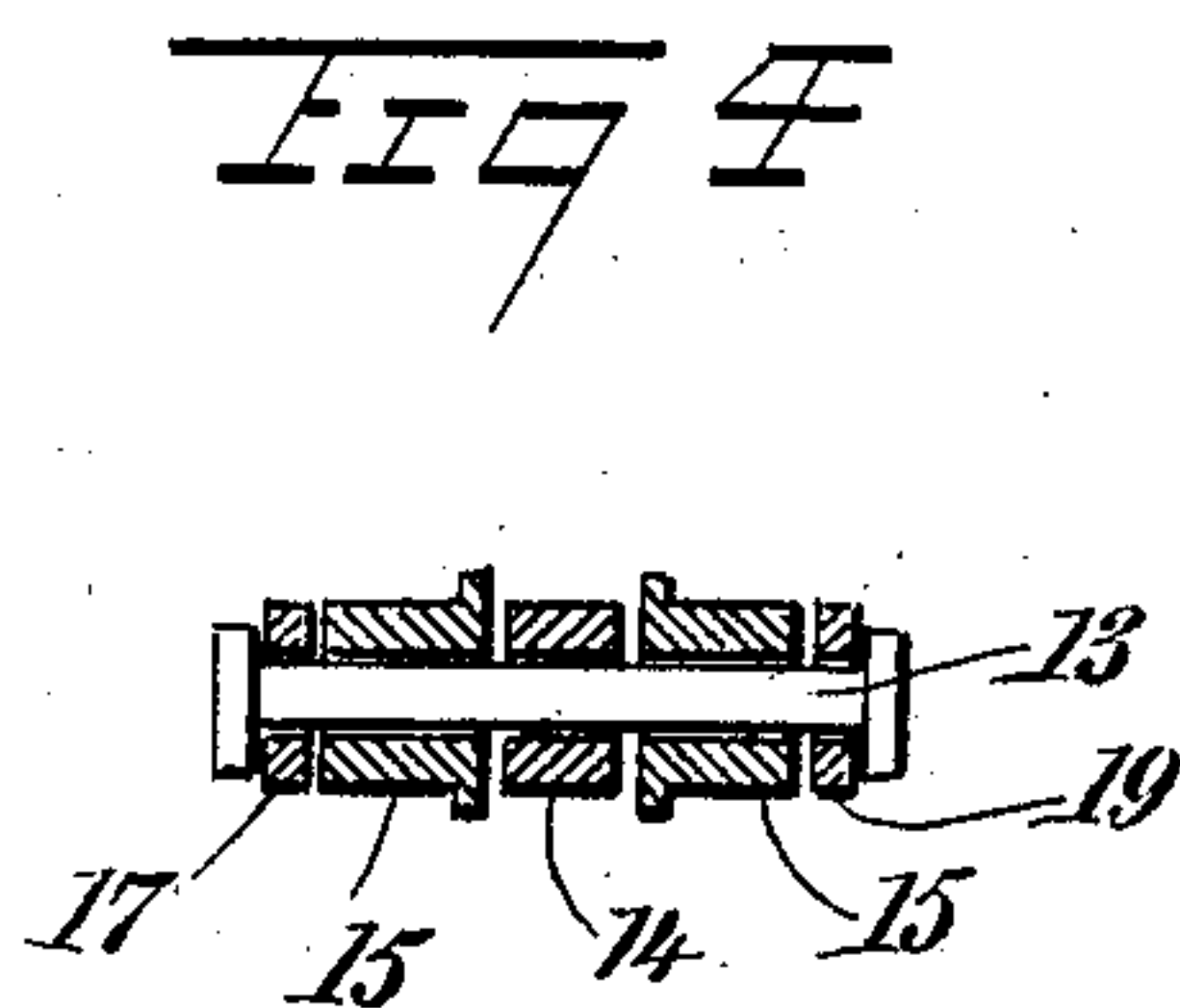
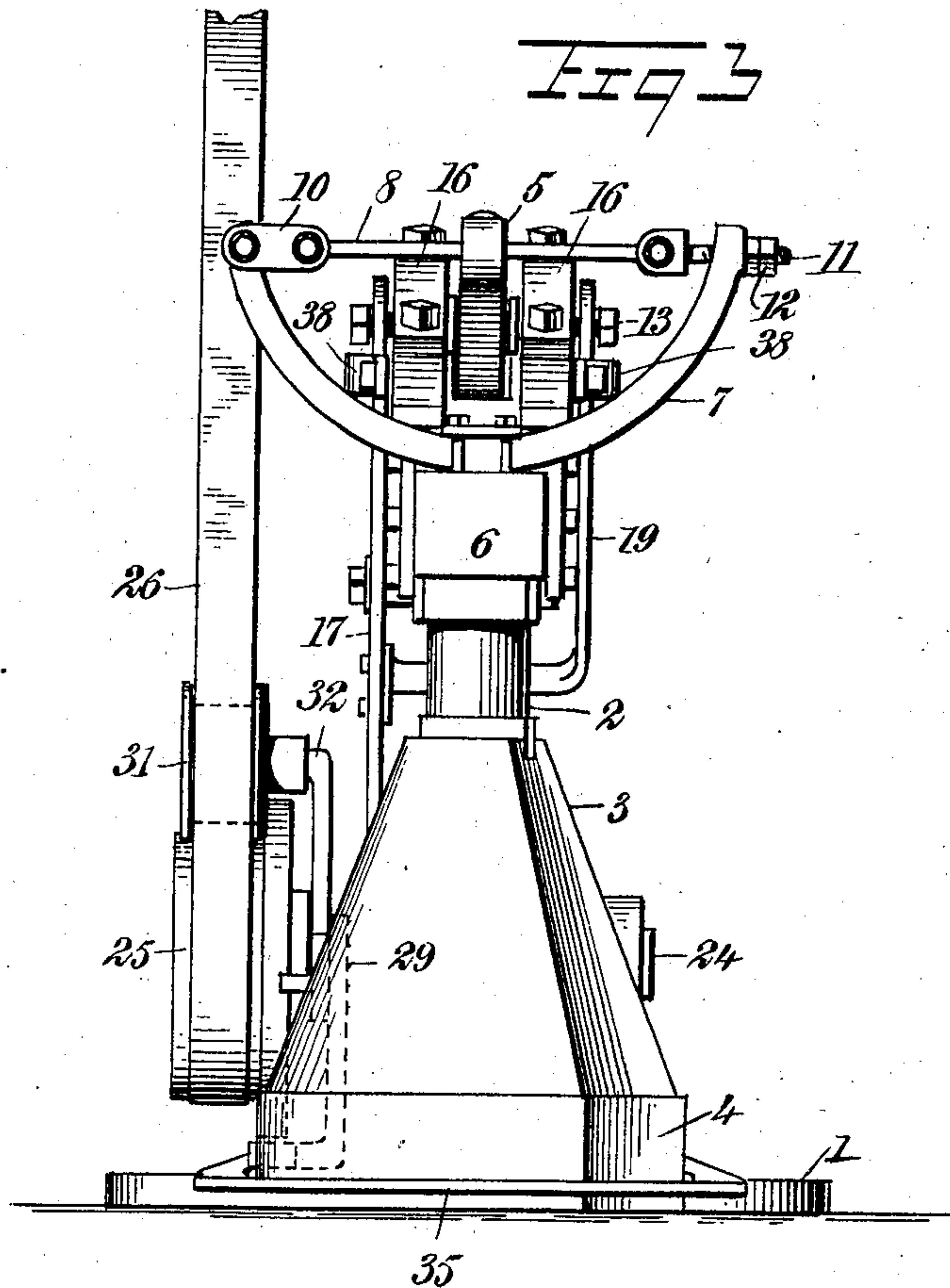
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*H. Walker*  
*C. R. Ferguson*

INVENTOR  
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# UNITED STATES PATENT OFFICE.

ARTHUR ALFRED KOCH, OF MONTEZUMA, IOWA.

## POWER-HAMMER.

SPECIFICATION forming part of Letters Patent No. 751,522, dated February 9, 1904.

Application filed February 27, 1903. Serial No. 145,326. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR ALFRED KOCH, a citizen of the United States, and a resident of Montezuma, in the county of Poweshiek and State of Iowa, have invented a new and Improved Power-Hammer, of which the following is a full, clear, and exact description.

This invention relates to improvements in power-hammers, an object being to provide a simple means for quickly changing the fulcrum-point of the hammer-carrying lever, and consequently changing the length of the hammer movement without changing the length of the eccentric-rod, as is generally practiced.

I will describe a power-hammer embodying my invention and then point out the novel features in the appended claims.

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 figures.

Figure 1 is a side elevation of a power-hammer embodying my invention. Fig. 2 is a plan view thereof. Fig. 3 is a front elevation, and Fig. 4 is a sectional detail view showing the fulcrum-pin.

Referring to the drawings, 1 designates the base of the power-hammer, on which is a post or standard 2 and an anvil 3, the said anvil being removably seated in a boxing 4, attached to the base. The hammer-carrying lever 5 is longitudinally slotted, and the hammer 6 is attached thereto by means of an iron yoke 7, from the ends of which a leather or similarly flexible strap 8 extends through an opening in the end of said lever 5. One end of the strap 8 is connected to the yoke 7 by means of links 10, and connected to the other end of the yoke by means of a screw-rod 11 are tightening-nuts 12. By manipulating these nuts it is obvious that the tension of the strap 8 may be changed as desired. By employing the flexible strap 8 the jar of the hammer upon striking is materially lessened. The lever 5 is fulcrumed on a pin 13, a block 14 on said pin being movable in a slot in the lever. Also on the pin 13 are blocks 15, adapted to slide in slotted guides 16, rigidly attached to the upper portion of the post 2. These guides are arranged at a forward and downward angle,

so that by moving the pin 13 along the same the fulcrum-point of the lever 5 may be changed to regulate the thrust or length of movement of the hammer, and this changing of the fulcrum-point may be done while the machine is in motion through the agency of a lever 17, having a foot-plate 18, the said lever being pivoted to the post or standard 2 and engaging at its upper end with one end of the fulcrum-pin. A member 19 is attached to the lever 17 and extends around the post 2 and connects with the opposite end of the fulcrum-pin. The lever 17 is held as adjusted by engaging with a rack 20. The rear end of the lever 5 is pivotally connected to an eccentric-rod 21, consisting of two threaded sections engaged by a turnbuckle 22, by means of which the rod may be shortened or lengthened, as occasion may require through wear, or to provide for a greater or less throw of the hammer than is possible through the agency of changing the fulcrum. The eccentric-rod engages with an eccentric 23 on a shaft 24, which has a band-wheel 25, engaged by a band 26, driven from any desired source. At one side of the band-wheel 25 is a brake-disk 27, designed to be engaged by a brake-shoe 28 on an angle-lever 29, pivoted to a stud 30 on the base of the machine.

A belt-tightener, consisting of a roller 31, is mounted on an arm 32, pivotally connected to the upwardly-extended portion of the angle-lever 29, and the roller 31 may be adjusted outward or inward with relation to the belt and held in such adjustment by means of a bolt 33, passing through an arc-slot 34 in the upper end of the angle-lever. A foot-treadle 35 is pivoted to a stud 36 on the base, and the forward end of this foot-treadle is extended around the boxing 4, so that it may be readily reached by the foot of the operator standing at any point around the anvil. The rear end of the treadle is curved upward and connected by means of a link 37 with the upwardly-extended portion of the angle-lever 29.

To prevent the lengthwise movement of the hammer-carrying lever, it is connected by means of straps 38 with the forward ends of the guides 16. The rear ends of these straps 38 are here shown as connecting with a pivot



attaching the lever 5 to the eccentric-rod. The hammer 6 is movable in guides 39, adjustably attached to an arm 40, extended forward from the post or standard 2.

5 When the machine is in operation, the attendant holds the forward end of the treadle 35 down, consequently tightening the belt on the belt-pulley and releasing the brake. When the operation of the machine is stopped, the  
10 attendant removes his foot from the treadle and the tightened belt will cause the tightener 31 to be thrown rearward, which will move the brake-shoe 28 into engagement with the brake-wheel, where it will be held by the  
15 weight of the pulley 31.

As before stated, the fulcrum-point of the hammer-carrying lever may be changed by moving it up or down the incline of the guides while the machine is in operation.

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

1. A power-hammer, comprising a standard, downwardly-inclined guides attached to the  
25 standard, a fulcrum-pin supported by said guides, a hammer-carrying lever mounted on the pin, a foot-actuated lever connecting with

one end of said pin, and a member attached to the lever and connecting with the other end of said pin. 30

2. A power-hammer, comprising a standard, downwardly-inclined guides attached to the standard, a fulcrum-pin supported by said guides, a hammer-carrying lever mounted on the pin, a foot-actuated lever connecting with  
35 one end of said pin, a member extended from said lever to the other end of said pin, and an eccentric mechanism for operating the hammer-carrying lever.

3. A power-hammer, comprising a standard, 40 guides on said standard, a fulcrum-pin movable along said guides, a hammer-carrying lever mounted on said pin, a connection between said lever and said guides to prevent lengthwise movement of the lever, and means for  
45 actuating the lever.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR ALFRED KOCH.

Witnesses:

CHARLES W. CLARK,  
JENNIE ALLELY.