

No. 838,233.

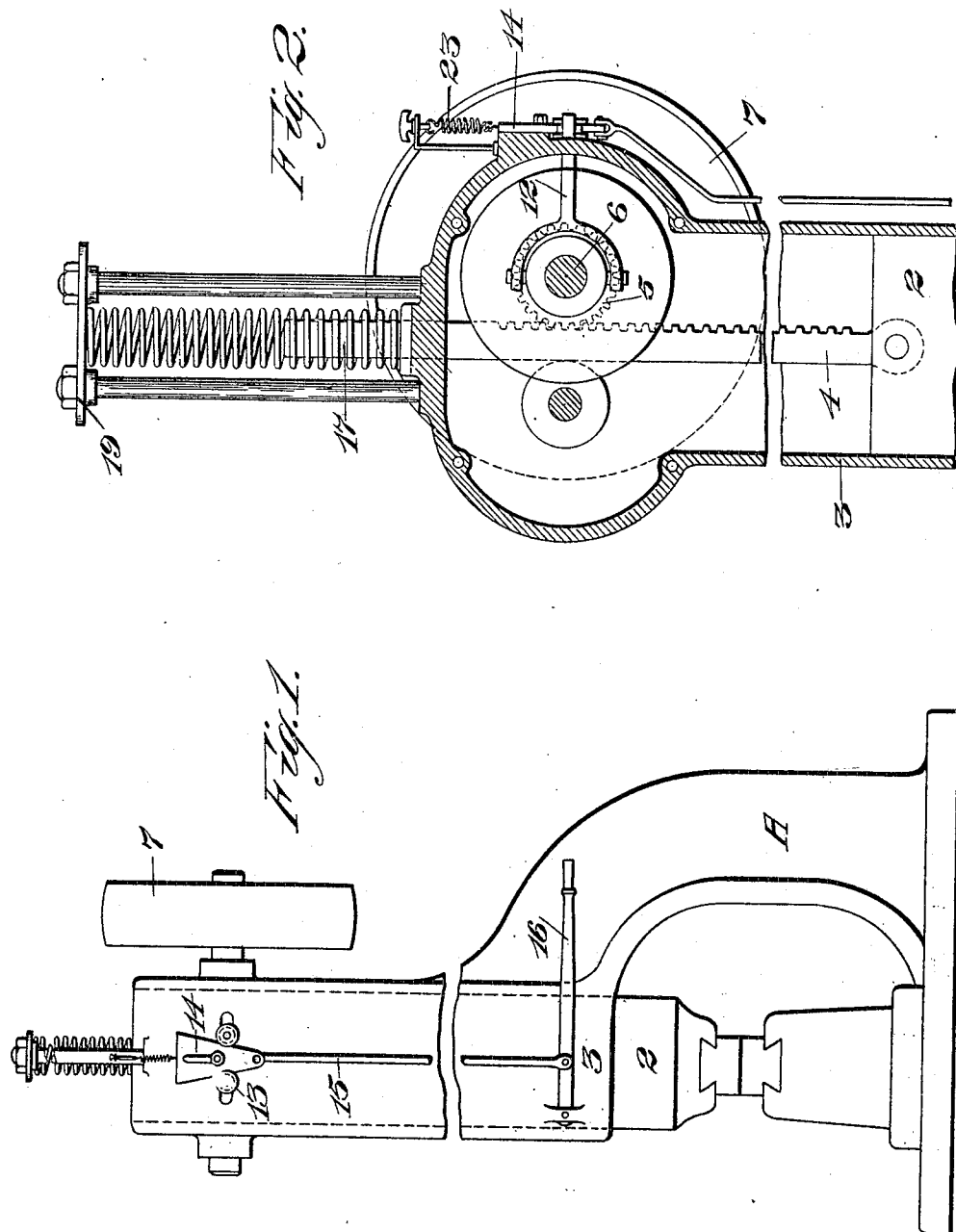
PATENTED DEC. 11, 1906.

R. BAUER.

POWER HAMMER.

APPLIOATION FILED SEPT. 8, 1905.

2 SHEETS—SHEET 1.



Witnesses.
J. Eastberg.
J. A. Sorensen

Inventor:
Richard Bauer
By Geo. H. Strong. atty

No. 838,233.

PATENTED DEC. 11, 1906.

R. BAUER.
POWER HAMMER.

APPLICATION FILED SEPT. 8, 1905.

2 SHEETS—SHEET 2.

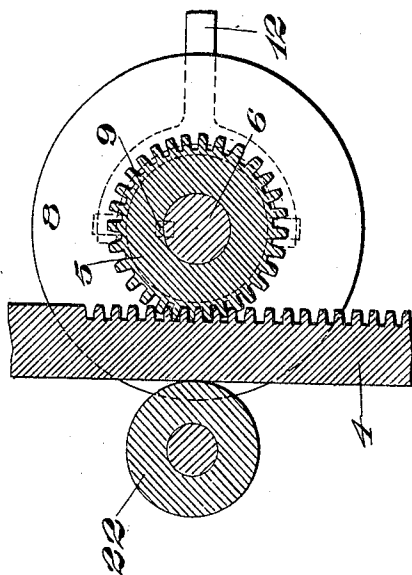


Fig. 4.

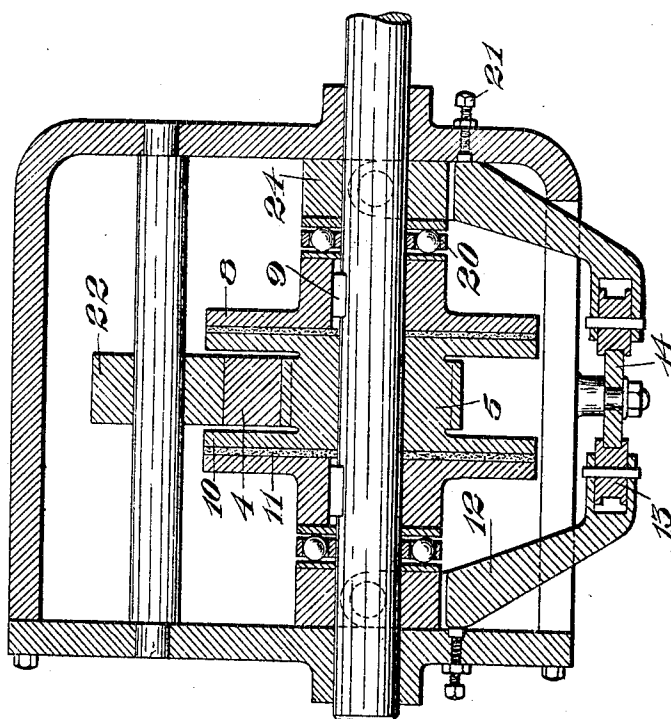


Fig. 3.

Witnesses.
E. H. Kierg.
J. J. Moore

Inventor:
Richard Bauer
By Geo. H. Strong atty

UNITED STATES PATENT OFFICE.

RICHARD BAUER, OF OAKLAND, CALIFORNIA.

POWER-HAMMER.

No. 838,233.

Specification of Letters Patent.

Patented Dec. 11, 1906.

Application filed September 8, 1905. Serial No. 277,575.

To all whom it may concern:

Be it known that I, RICHARD BAUER, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Power-Hammers, of which the following is a specification.

My invention relates to a power-hammer.

It consists in a combination of mechanism and in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my hammer. Fig. 2 is a vertical section of the upper part. Fig. 3 is a transverse section of same. Fig. 4 is a partial cross-section of Fig. 4.

It is the object of my invention to provide a power-hammer or like reciprocating apparatus and means for controlling the movements of the hammer.

The hammer may be of any usual or suitable construction, such as are employed for various purposes, as shown at A, and it is fixed in a suitable carrier, as at 2, slidable in guides, as at 3. In order to reciprocate the hammer, I have shown a rack 4 engaging a pinion, as at 5. This pinion is loosely turnable upon a shaft 6, which is continuously revolved by a belt-pulley, as at 7, or other suitable connection for the purpose. Upon each side of the pinion are disks 8, which are movable upon feathers, as at 9, fixed in the shaft, so that the disks and the feathers revolve together. The pinion has flanges, as shown at 10, having a diameter substantially equal to that of the disks 8. Between these flanges and the disks are fitted any suitable or desired frictional disks 11, which may be made of rough hide or other suitable material and form washers between the two.

In order to revolve the pinion and through its engagement with the gear to lift the hammer, it is necessary to compress the disks 8 against the flanges of the gear with sufficient force to cause it to revolve in unison with the revolutions of the disks. This is effected by means of transversely-movable arms 12, which are so actuated as to force the disks 8 to grip the flanges of the pinion as strongly as is necessary for the purpose. These arms carry rollers or antifrictional devices 13 at their adjacent ends, and between these rollers a wedge-shaped block 14 is slidable, so that when moved in one direction it separates the rollers and acts through the arms 12 to compress the disks, and thus compel the pinion to

revolve and by its engagement with the rack to raise the hammer. The movable wedge may be operated in any suitable manner. I have here shown it provided with a connecting-rod 15, and this is attached to a fulcrum-lever 16 within convenient reach of the operator.

The hammer-carrier has a shank extending upwardly, as shown at 17, and this is surrounded by a spiral spring, as at 19. This spring extends beyond the stem or guide 17, and its upper end will contact with the cross-bar 19 at the top of a suitable frame when the hammer has been raised to the desired point. When the hammer has been released, the action of the spring will force it down in addition to its own weight, and the momentum gives the required blow. Thus it will be seen that by moving the handle of the lever 16 the hammer may be operated with any desired speed and its blows very accurately controlled.

In order to relieve the wear which would otherwise occur between the levers 12 and the hubs of the disks 8, I have shown ball or equivalent antifrictional bearings interposed between these parts, as shown at 20.

21 represents adjusting-screws fixed in the frame and having their inner ends forming supports against which the angles of the levers 12 press, these screws practically acting as fulcrums, so that when the outer ends of the levers are separated the inner ends will act upon the disks as previously stated. Any wear may be taken up and the levers adjusted to suit by the movement of these screws.

22 is a roller, journaled so that the back of the rack 4 will be supported in line with the toothed gear 5.

23 is an adjustable spring connecting with the upper end of the wedge-shaped slide 14 and normally withdrawing it from between the ends of the levers 12.

As a convenient means for transmitting the power of the levers to actuate the clamping-disks I have shown collars 24 loosely turnable and slidable upon the shaft, and the inner ends of the lever-arms are forked and pivoted to the collars by pins at opposite sides of the collars.

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

1. A power-hammer comprising a power-shaft, a reciprocable part, a rack connected with said part, a pinion engaging the rack

and loosely mounted on the shaft, disks slidable and revoluble with the shaft upon opposite sides of the pinion, said pinion having circular flanges extending outwardly beyond the toothed portion of the rack and inclosing two sides of said rack, and means for operating the disks to cause them to press against the flanges of the pinion.

2. An apparatus consisting of a reciprocal part a rack connected therewith, a pinion engaging said rack loosely turnable upon a revoluble shaft, disks slidable upon feathers on the shaft exterior to the pinion, and frictional washers located between the disks and pinion, lever-arms fulcrumed between their ends having their outer ends converging

toward each other, collars with which the inner ends of said lever-arms are connected, antifrictional devices carried by the outer end of the levers, a wedge-shaped plate slidable between said antifrictional devices, means by which said plate is reciprocated, and means for adjusting the fulcrums of the lever-arms.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RICHARD BAUER.

Witnesses:

GEO. E. RANDOLPH,
JOE M. SAUER.