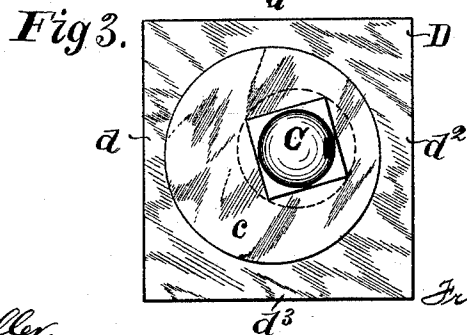
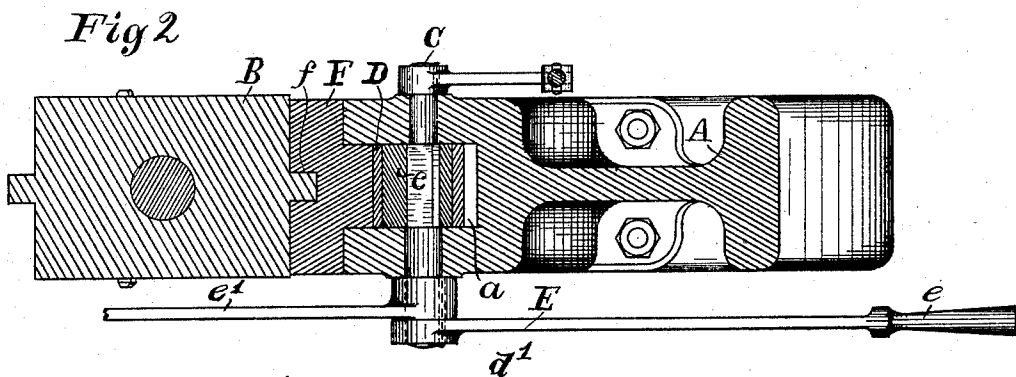
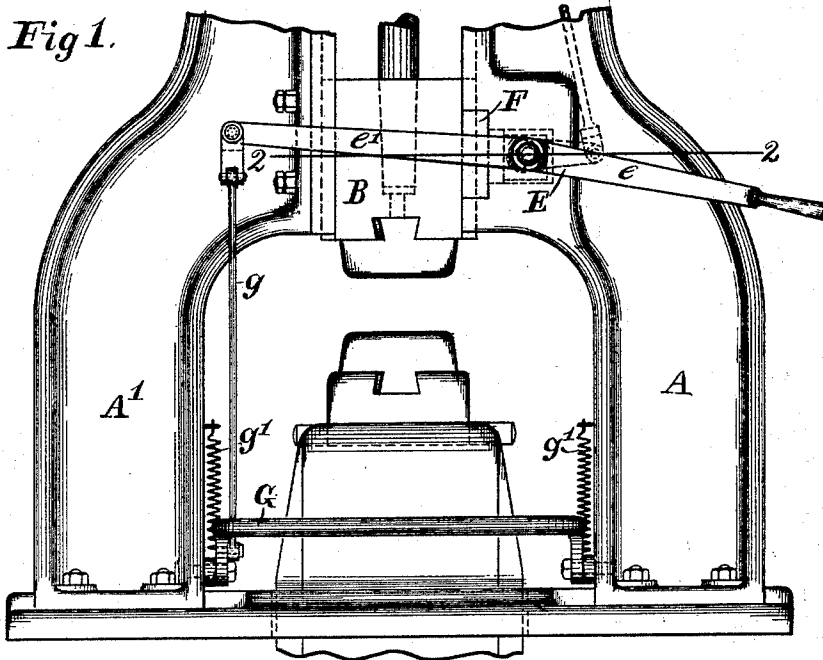


(No Model.)

F. C. BROOKSBANK.
POWER HAMMER.

No. 485,169.

Patented Nov. 1, 1892.



WITNESSES.

Frank Miller.

M. S. Ingham.

INVENTOR.

Frederick C. Brooksbank

By his attorney

E. L. Thurston

UNITED STATES PATENT OFFICE.

FREDERICK C. BROOKSBANK, OF CLEVELAND, OHIO.

POWER-HAMMER.

SPECIFICATION forming part of Letters Patent No. 485,169, dated November 1, 1892.

Application filed October 5, 1891. Serial No. 407,730. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK C. BROOKSBANK, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Power-Hammers, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it appertains to make and use the same.

My invention, hereinafter described, was especially designed for use in connection with the class of power-hammers now well known in the market as "Hackney" hammers, which are shown and described in two patents granted December 11, 1888, and numbered 394,483 and 394,484, to Jacob B. Perkins and myself as assignees of Gilbert Glossop. The invention is, however, applicable to any power-hammer having a reciprocating tup operating between fixed guides and a friction brake-block which may be forced against said tup with greater or less pressure for the purpose of retarding the movement of said tup or of stopping it altogether.

The invention as broadly claimed is also applicable to any mechanical contrivance containing a reciprocating part movable between fixed guides which it is desirable to stop or check by means of a friction-brake.

The objects of my invention are, first, to provide novel means whereby a friction brake-block may be positively moved against a movable part for the purpose of applying more or less friction thereto; second, to provide novel means whereby wear on the brake-block may be compensated for and the device maintained in an operative condition for a long time without replacing any of the parts.

In the drawings, Figure 1 is a front elevation of the lower part of a power-hammer containing my invention. Fig. 2 is a view on an enlarged scale in section on the line 2 2 in Fig. 1 through one of the standards, the tup, and brake mechanism; and Fig. 3 is a detached front view of the pressure-block, rock-shaft, and eccentric.

Referring to the parts by letters, A A' represent the standards of a power-hammer, and B the tup, which is caused to reciprocate in a vertical path between said standards by

suitable mechanism. The meeting faces of the standards and tup are provided with tongues and grooves, by which the tup is guided. Set into the face of one of the standards is a friction brake-block F, having a groove *f*, similar to the groove in the standard above and below it. As this brake-block is forced with more or less pressure against the tup, it either stops the movement of said tup altogether or retards its movement. The length of the brake-block is such that it always remains in contact with some part of the tup. Behind the brake-block a recess *a* is formed in the standard, which recess is slightly larger than the pressure-piece D, which operates therein.

The pressure-piece D is in the form shown square, and it is provided with a transverse cylindrical orifice placed eccentric to its four sides—that is to say, the perpendicular distance from any side to the nearest point in the periphery of the orifice is either greater or less than the distance similarly measured between any other side and said orifice.

C represents a rock-shaft journaled in the standard A, and *c* an eccentric rigid therewith, which is nicely fitted into the cylindrical orifice in the pressure-piece.

E represents a lever keyed or otherwise rigidly secured to one end of the shaft C, by means of which it may be rocked. One arm *e* of the lever may be used as a hand-lever, while the other arm *e'* is connected by the rod *g* with treadle G. Springs *g'* *g'*, each connected at one end with the treadle and at the other with the standards, exert a continuous force to lift the treadle and through the intermediate mechanism to apply the brake, as will be hereinafter pointed out.

When the shaft C is rocked by the upward movement of the hand-lever *e*, (or the downward movement of the lever *e'*), the eccentric *c* is rocked in the direction to draw the pressure-piece D back from the block F, thus reducing the braking-pressure between said brake-block and tup. When the shaft C is rocked in the contrary direction, the eccentric *c* forces the piece D against the brake-block, and as this pressure is greater or less the movement of the tup will be stopped or retarded. When this mechanism is first set up,

the side d of the piece D which is nearest the orifice is placed next the brake-block. When said brake-block has been worn down so that it no longer acts efficiently, the piece D is removed and turned one-quarter around on the eccentric c , so that the side d' thereof which is next thickest (between the outside and the orifice) bears against said brake-block. In due time the next-thickest side d'' may be placed against the brake-block, and finally the side d''' may be so placed. Thus the same parts may be used without any other change in their relative position than those above pointed out until a very considerable part of the brake-block has been worn away.

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

1. In a power-hammer, the combination of the standards, reciprocating tup, and a friction brake-block set into one of said standards at the side of the tup with a rectangular pressure-piece set into the standard behind said brake-block and having an eccentrically-placed cylindrical orifice, a rock-shaft

journaled in said standards, and an eccentric secured thereto passing through said orifice, substantially as and for the purpose specified.

2. The combination of a reciprocating part, its guides, and a friction brake-block bearing against said part with a square pressure-piece having a transverse cylindrical orifice placed at unequal distances from all four sides, a rock-shaft, and an eccentric secured to said rock-shaft and passing through said orifice, substantially as and for the purpose specified.

3. The combination of a reciprocating part, its guides, and a friction brake-block bearing against said part with a rectangular pressure-piece bearing against the rear side of said brake-block and having a cylindrical orifice set at unequal distances from all four sides, a rock-shaft, and an eccentric secured to said rock-shaft and passing through said orifice, substantially as and for the purpose specified.

FREDERICK C. BROOKSBANK.

Witnesses:

E. L. THURSTON,
M. S. INGHAM.