

No. 650,103.

Patented May 22, 1900.

G. L. WALTER.
POWER HAMMER.

(Application filed June 30, 1899.)

(No Model.)

Fig. 1

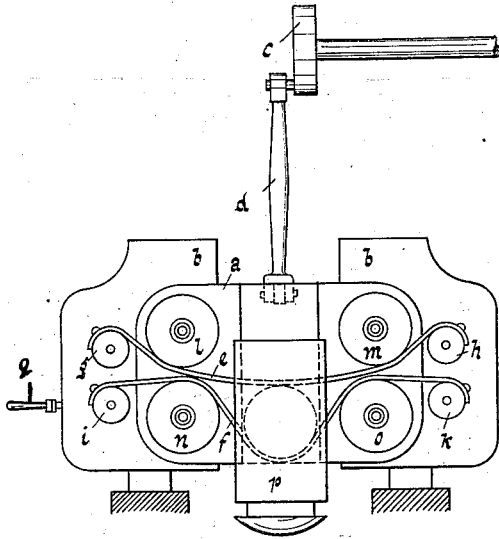


Fig. 3

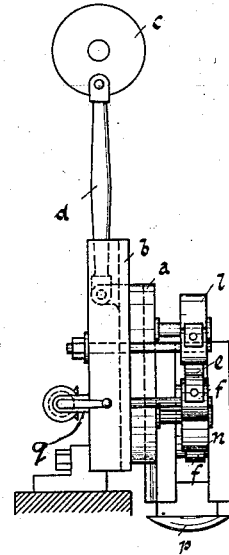


Fig. 2

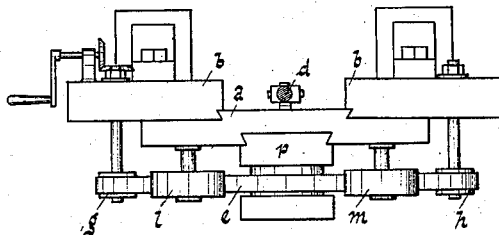


Fig. 4

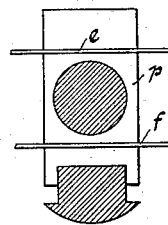
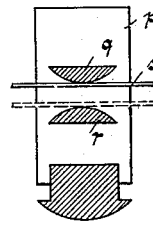


Fig. 5



Witnesses

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GEORG LEONHARD WALTER, OF SCHWABACH, GERMANY.

POWER-HAMMER.

SPECIFICATION forming part of Letters Patent No. 650,103, dated May 22, 1900.

Application filed June 30, 1899. Serial No. 722,408. (No model.)

To all whom it may concern:

Be it known that I, GEORG LEONHARD WALTER, machinist, a subject of the Emperor of Germany, and a resident of Schwabach, in the Kingdom of Bavaria and Empire of Germany, have invented a new and useful Improvement in Power-Hammers, (for which application for patent has been filed in Germany, No. W. 14,996, I/49^a, dated March 18, 1899,) of which the following is a specification.

This invention relates to power-hammers, and has for its object to provide a machine in which the hammer-head is not directly driven, but has a certain amount of play, and in which the stroke of the hammer-head may be adjustable during the operation of the machine.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents in front elevation a power-hammer constructed in accordance with the invention, while Fig. 2 is a plan corresponding thereto; and Fig. 3 is a side view corresponding thereto, while Figs. 4 and 5 are sectional elevations of alternative forms of hammer-head that may be employed.

The invention consists of a power-hammer in which the movement of the hammer-head is caused and regulated by means of straps, cords, or chains whose extremities are affixed to the frame and are arranged transversely to the direction of movement of the hammer-head, the movement being caused upon the reciprocation of the main sliding frame, within which the hammer-head is fitted so as to slide in the same direction. The main sliding frame is reciprocated by such means as a crank and connecting-rod and has a positively-determined stroke.

In carrying the invention into effect, as illustrated in the accompanying drawings, the main sliding frame *a* is fitted so as to slide within grooves provided in the machine-frame *b*, and its reciprocation is effected by means of a crank-disk *c* and connecting-rod *d*. Straps *e* and *f* are fitted to the machine-frame, preferably upon pulleys *g*, *h* and *i*, *k*, which are capable of rotation and are so arranged as to be transverse to the direction of movement of the main sliding frame. The hammer-head *p* is mounted within the main sliding frame *a* in a V groove and has provided thereupon a boss or neck, which lies between the straps *e*

and *f*. Pulleys *l* and *m* and *n* and *o* are mounted upon the main sliding frame *a* and bear upon the straps *e* and *f* in such a manner that upon the reciprocation of the main sliding frame *a* the respective straps *e* and *f* are alternately tightened, so as to impel the hammer-head *p* upward or downward.

As before mentioned, the pulleys *g* and *h* and *i* and *k* are capable of slight rotation for the purpose of adjusting the length of the straps *e* and *f*, and their positions may be fixed by such means as a ratchet-wheel and pawl having the handle *q*, which is stationary with the frame *b*.

Instead of two straps *e* and *f* being employed one alone may be used, in which case instead of one boss or neck being provided upon the hammer-head *p* two bosses or abutments, such as *q* and *r*, Fig. 5, may be provided.

The straps may of course be replaced by ropes or chains and the pulleys *g* and *h* and *i* and *k* be fixed abutments. Further, instead of the hammer-head and main sliding frame being operated in a vertical plane it is obvious that they may be employed so as to reciprocate horizontally, and any incidental alterations in the construction of the machine may be made in such a case without departing from the essential features of the invention.

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

1. In a power-hammer the combination of a main sliding frame fitted so as to slide within the machine-frame, a hammer-head fitted so as to slide in the same direction within the sliding frame, straps or their equivalents arranged transversely thereto, the ends of which are fixed to the machine-frame, pulleys mounted upon the sliding frame and bearing upon said straps, and a boss or neck provided upon the hammer-head and lying between said straps, substantially as and for the purpose hereinbefore set forth.

2. In a power-hammer the combination of a main sliding frame fitted so as to slide within the machine-frame, a hammer-head fitted so as to slide in the same direction within the sliding frame, straps or their equivalents arranged transversely thereto, the ends of which

are secured to pulleys mounted upon the machine-frame and capable of slight rotation for the purpose of adjusting the length of said straps, pulleys mounted upon the sliding frame and bearing upon said straps, and a boss or neck provided upon the hammer-head and lying between said straps, substantially as and for the purpose hereinbefore set forth.

3. In a power-hammer, the combination of
10 a hammer-head, a main slide fitted so as to slide within the stationary machine-frame, means for reciprocating said slide, a hammer-head fitted to slide in the same direction upon the said slide, and flexible connections between said head and said stationary machine-
15 frame, said flexible connections having bearings on said main slide.

4. In a power-hammer, the combination of a hammer-head, a main slide fitted so as to slide within the stationary machine-frame, 20 means for reciprocating said slide, a hammer-head fitted to slide in the same direction upon the said slide, flexible connections between said head and said stationary machine-frame, said flexible connections having bearings on 25 said main slide, and means for adjusting the tension of said connections.

In testimony whereof I have hereunto subscribed my name this 16th day of June, 1899.

GEORG LEONHARD WALTER. [L s.]

Witnesses:

AUGUST OHNIMUS,
CRISTIAN LANG.