

I. L. PENNEY.

TRIP HAMMER.

No. 302,520.

Patented July 22, 1884.

Fig. 1.

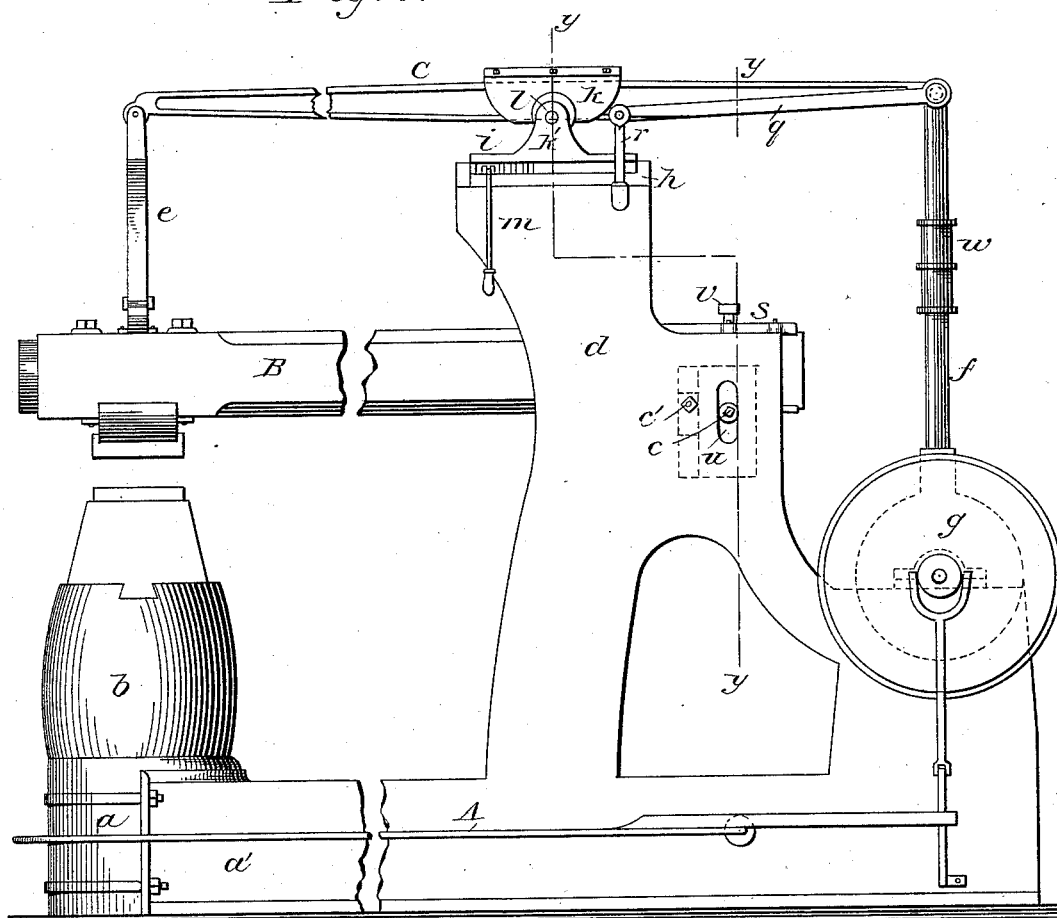


Fig. 2.

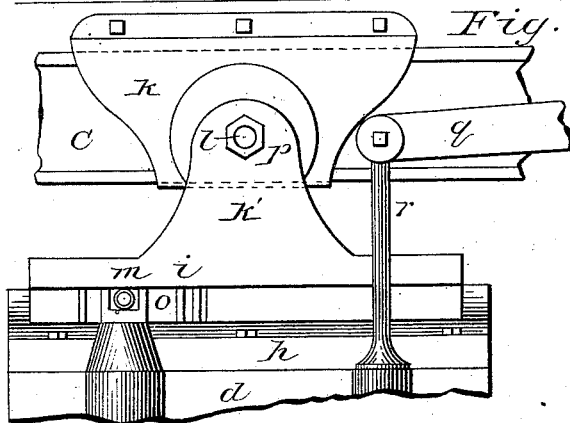
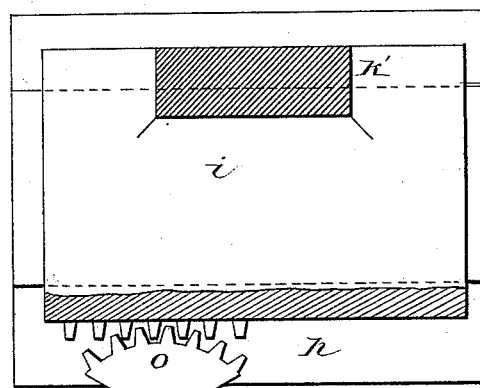


Fig. 3.



Witnesses:
Alex. Scott
Jas. W. Graham

Inventor:
I. L. Penney
by *Wm. Finckel*
and atty.

(No Model.)

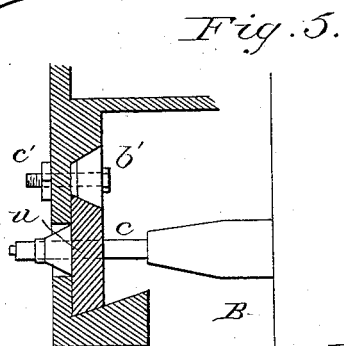
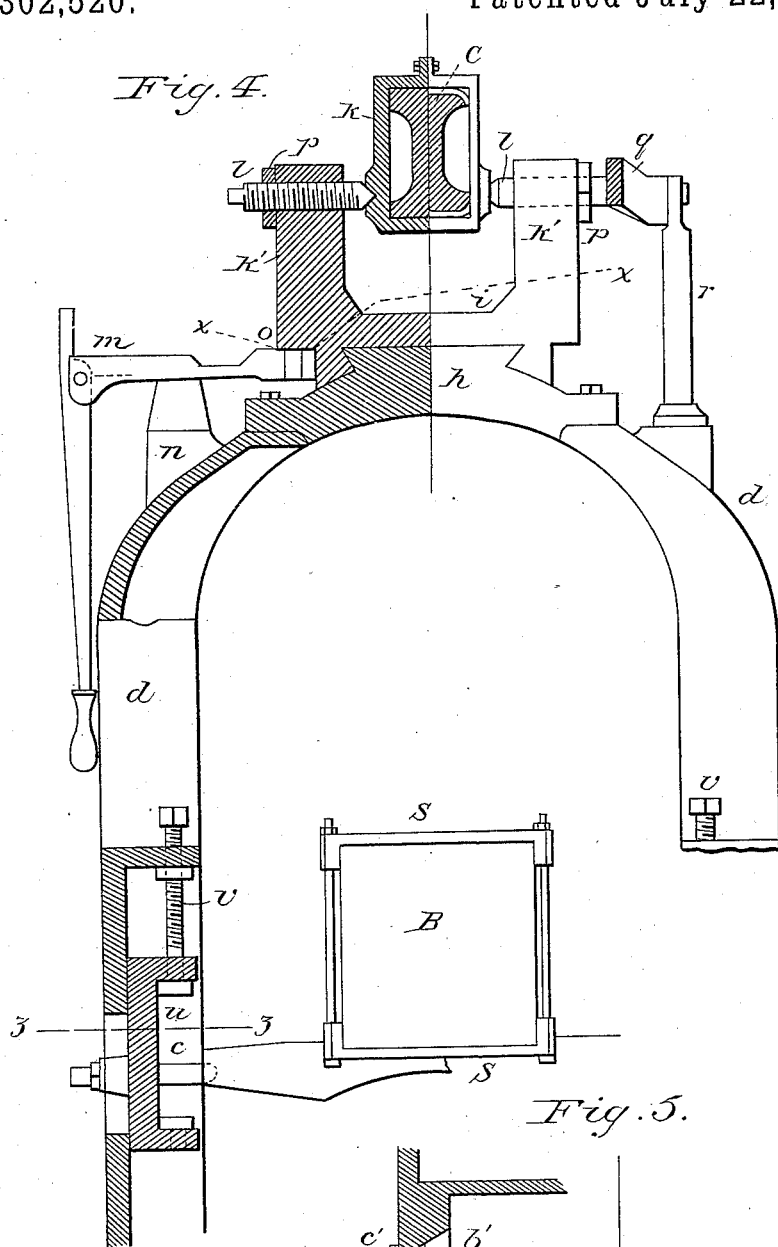
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

ISAAC L. PENNEY, OF MINNEAPOLIS, MINNESOTA.

TRIP-HAMMER.

SPECIFICATION forming part of Letters Patent No. 302,520, dated July 22, 1884.

Application filed August 24, 1883. (No model.)

To all whom it may concern:

Be it known that I, ISAAC L. PENNEY, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful Improvement in Trip-Hammers, of which the following is a specification.

The object of my invention is to furnish a trip-hammer of compact, simple, and durable form, and readily adjustable to vary the length of stroke and to admit dies of different size.

The improvement relates to beam-hammers having spring-cushioned helves; and it consists in adjustable boxes carrying the beam, and in combination therewith jointed links or braces for retaining the beam against endwise pressure, all as hereinafter described and claimed, reference being had to the accompanying drawings, in which similar letters of reference indicate the same parts.

In the drawings, Figure 1 is a side elevation of a hammer of my improved construction. Fig. 2 is a side view, in larger size, of the adjustable boxes and slide. Fig. 3 is a detail plan view on the line *x x* of Fig. 4. Fig. 4 is a cross-section and partial elevation on line *y y* of Fig. 1; and Fig. 5 is a detail section on line *z z* of Fig. 4, showing the adjustable centers of the helve.

A is the base, fitted at one end with the separate foundation-piece *a*, that supports the anvil-block *b*. B is the helve, hung on centers *c* between the standards *d d*. C is the beam, mounted on standards *d*, as hereinafter specified, and connected at one end to the outer end of the helve B by a semi-elliptic spring, *e*, while the opposite end of the beam is connected by a rod, *f*, to an eccentric on a shaft carrying a clutch-pulley, *g*, for connection of a driving-belt.

Upon the top of standards *d* is bolted a plate, *h*, and upon that is a slide, *i*, connected to the plate *h* by a dovetail rib, so that the slide is free to move in a direction to and from the anvil. The slide-plate *i* is formed with bearings *k*, through which screws *l* are tapped, and upon the beam between the two bearings *k* is a box or husk, *k*, into the sides of which the points of the screws *l* enter, so that the beam is hung on the screws as centers. The box *k* is arranged to slide on the beam, and

for its movement I provide a lever, *m*, hung on a post, *n*, the inner end of the lever being formed as a segment-rack, *o*, which engages a rack on that side of the slide *i*, so that by moving the lever to the right or left the box *k* is moved, and the centers *l* of the beam thus shifted nearer to or farther from the beam ends. In this manner the stroke is shortened or lengthened, as may be required by the work. Set-nuts *p* are provided to clamp the centers *l*, and in order to put the outer end of lever *m* out of the way when not required it is jointed, so as to hang down.

It will be evident that in the adjustment of the box *k*, as mentioned, there is liability of endwise movement being given to the beam. To prevent such a movement, and thus to retain the beam in position, I provide the links or braces *q*, of which there are two, connected at their inner ends to posts *r*, rising from standards *d*, and at their outer ends connected to the outer end of the beam where the eccentric-rod is attached. The connections of the links are by pins, so that they are free to swing with the beam in its movement, and at the same time hold the beam from endwise movement. The connections of the links to posts *r* should be as near as possible to the pivot-centers; but for convenience of manufacture they are placed at one side, as shown, and the slight difference in the movement caused by this offset is accommodated by looseness in the connections. By this construction and arrangement the stroke of the hammer can be readily varied, whether the hammer is in motion or not. The husk *s*, carrying the helve, is hung on centers *c*, which, as shown in Figs. 4 and 5, are carried by slides *u*, adjustable by set-screws *v v* at the top, and clamped by a wedge, *b'*, and screw *c'* at each standard, so that the height of the centers can be varied, and the helve thus raised or lowered to admit dies of different thickness; and to insure a square blow, with the helve adjusted in any position it may be, the eccentric-rod *f* is made in two portions, connected by a turn-buckle, *w*, which allows the rod to be shortened or lengthened.

The clutch-pulley may be of any suitable construction, and is fitted for being connected

and disconnected by means of a lever, *a'*, hung on base A. I do not limit myself in that respect, nor do I limit myself to the rack and segment as means for moving the slide, as any suitable mechanism may be used for that purpose.

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

10 1. In trip-hammers, the box *k*, slide *i*, centers *l*, and links *g*, combined with the beam operating the hammer, substantially as shown and described.

2. In trip-hammers, the links or braces *g*, combined with the beam C, box *k*, and slide *i*, carrying the beam-centers, substantially as and for the purposes specified.

3. In trip-hammers, the slides *u*, carrying centers *c*, and the adjustable operating-rod *f*, combined with standards *d*, helve B, and beam C, substantially as shown and described.

ISAAC L. PENNEY.

Witnesses:

E. M. RUNYAN,
L. WALKER.