

T. Shaw
Riveting Machine.

N^o 90,693.

Patented Jan. 1, 1869.

Fig. 1

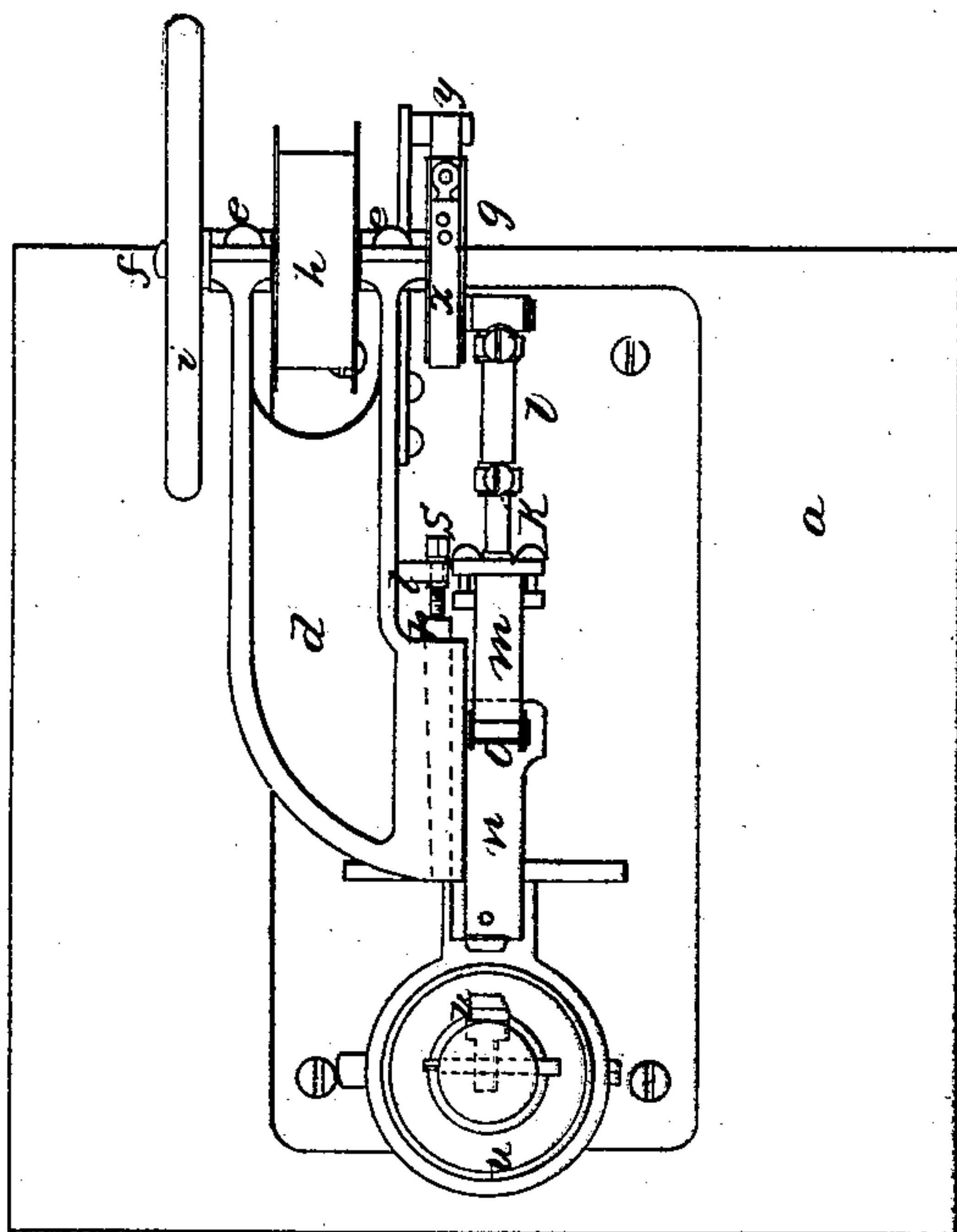
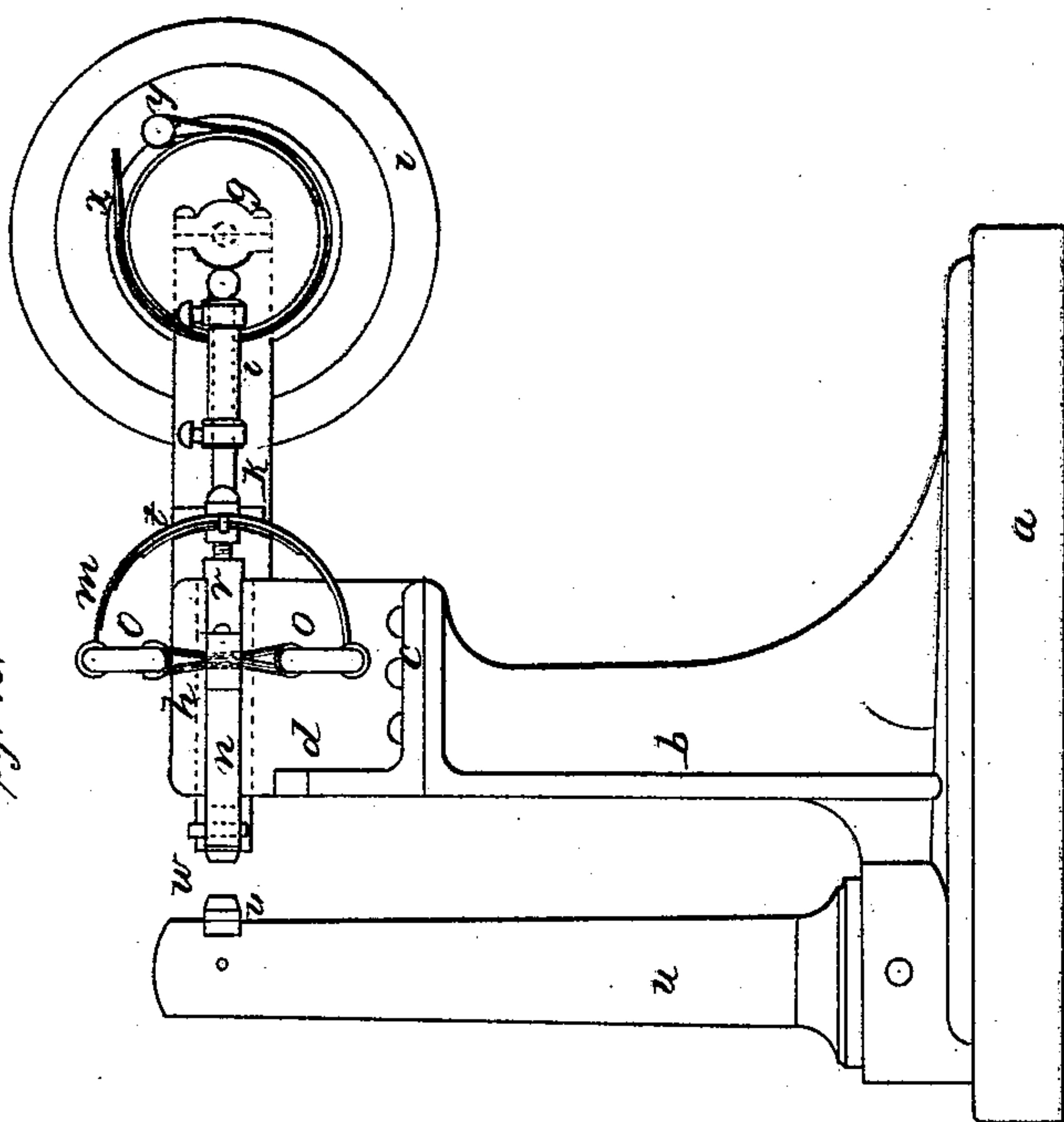


Fig. 2.



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TO HIMSELF AND PHILIP S. JUSTICE.

Letters Patent No. 90,693, dated June 1, 1869.

IMPROVEMENT IN RIVETING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, Pennsylvania, have invented new and useful Improvements in Riveting-Machines; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists in the combination of devices as fully expressed in claims.

In order to enable others to use and practice my invention, I will proceed to describe its construction and operation.

On reference to the accompanying drawing, which forms a part of the specification—

Figure 1 represents a top view of the machine, and

Figure 2 represents a side view of the same.

Similar letters refer to similar parts, of which—

a is a wood base, to which is secured cast-iron frame *b*, on the top of which is secured, by screws *c*, cast-iron guide-frame *d*.

Said frame *d* is provided with journal-boxes, *e e*, into which shaft *f* plays.

Said shaft *f* is provided with crank-disk *g*, belt-wheel *h*, and fly-wheel *i*, all for the purpose as hereafter described.

k and *l* is an adjustable pitman-rod, secured to crank-pin or disk *g*, and united at the other end to spring *m*.

Said spring *m* is attached to hammer *n*, by means of links *o* and belt *p*, all for the purpose as hereafter described.

Said links are provided with spool-like bearings, for the prevention of wear, as hereafter described.

Said hammer *n* is propelled in a horizontal direction in a V-shaped guide in frame *d*, the back of said guide being constructed of a wedge, *r*, which causes hammer to move tightly or loose in said guide when said wedge is moved by means of screw *s*, fig. 1.

Said screw *s* is tapered into said wedge *r*, but is held longitudinally stationary by a projecting post, *t*, upon which post said screw *s* revolves, and is prevented from moving in the long direction by means of collars, all for the purpose as hereafter described.

u is an iron post secured to the base of frame *b*, and projects up a sufficient height to support die *v*, opposite a corresponding die, *w*, in hammer *n*, for the purpose as hereafter described.

x is a leather belt, secured at one end to pin *y*, which is secured to frame *d*.

The other end of said belt is to be secured to the belt-tightener, for the purpose as hereafter described, by mechanism not claimed in this application, and, therefore, not shown in the drawings.

The machine is operated in the following manner:

The shaft *f* is placed parallel with and immediately

under a revolving shaft, which is provided with a pulley of sufficient diameter to run pulley *h* about four hundred revolutions per minute, when said pulley *h* is connected with said driving-pulley by means of belt.

Said belt-tightener is of the ordinary construction, hinged at the top of the frame, and provided with a pulley at the bottom.

Said pulley is caused to press against the belt which propels the machine, by pushing said frame by hand or foot in the desired direction.

Belt *x*, which surrounds crank-disk *g*, is to have its loose end connected with said tightener, so that when the tightener is moved to release the driving-belt of pulley *h*, it will pull upon and tighten belt *x*, upon the crank-disk, and cause the machine to stop.

The rotation of crank-disk is in a direction that will wind the belt-brake *x* upon itself, and thus cause a great friction by a slight pull on loose end of belt-brake.

By the operation of belt-tightener alone, the machine is started and stopped suddenly.

The rotation of said crank-disk gives a vibratory motion to connecting-rod *k*, equal to throw of crank-pin.

The hammer *n* has a stroke of double this amount, by reason of the intervention of spring *m*, and belt *p*, and links *o*, which forms a flexible connection, and causes the hammer to vibrate with crank-pin synchronously, travelling at double the speed of connecting-rod, and strikes heavy blows in consequence.

The sheets to be riveted are suspended between hammer and post *u*.

The rivet inserted when the hammer is caused to vibrate, by pressing belt-tightener, as afore described.

After rivet has received sufficient number of blows, the machine is arrested, as afore mentioned.

It is necessary that the hammer have no lateral motion; hence the provision of wedge *r*, which takes up any wear or looseness of hammer in guides.

The links *o*, in combination with the journal-spools in same, are of utility in shortening belt *p*, and in allowing a free and easy motion of this necessary flexible connection.

Rod *k* enters hollow tube *l* of connecting-rod, and is held by set-screw, for the purpose of lengthening or shortening said connecting-rod.

The combination of the hammer, flexible strap, links, spring, connecting-rod, and crank-shaft hereinbefore described, I do not here claim, as the same has already been secured to me by Letters Patent; but

What I do claim, and desire to secure by Letters Patent, is—

1. Arranging said combination of devices in the manner described, in frame *b a*, and combining therewith the anvil-post or block *u*, and the screw and

wedge *s* and *r*, for preventing lateral play of the hammer, substantially as described.

2. In combination with the combinations first mentioned in the foregoing clause the disk *g*, or an equivalent pulley, the friction-belt *x*, and mechanism which shall simultaneously tighten the driving-belt and slacken the friction-belt, or slacken the driving-belt and

tighten the friction-belt, substantially as and for the purpose set forth.

THOMAS SHAW. [SEAL.]

Witnesses:

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