R. M. JOHNSTON.

SPRING HAMMER.

APPLICATION FILED APR. 29, 1918.

1,323,222.

Patented Nov. 25, 1919.

2 SHEETS—SHEET 1.

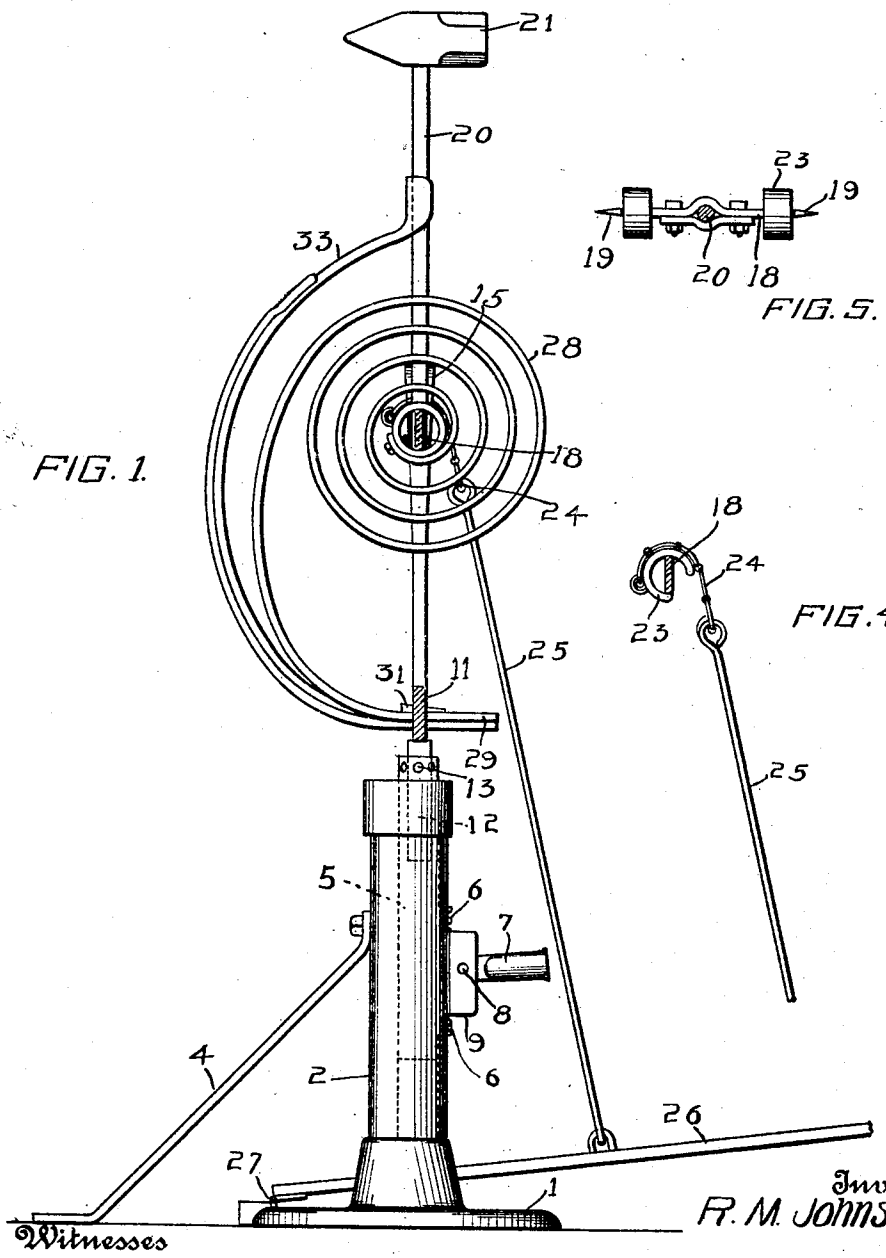


FIG. 1.

FIG. 5.

FIG. 4.

Witnesses

R. A. Thomas

J. W. Garner

Inventor

R. M. Johnston

By Victor J. Evans

Attorney

R. M. JOHNSTON.

SPRING HAMMER.

APPLICATION FILED APR. 29, 1918.

1,323,222.

Patented Nov. 25, 1919.

2 SHEETS—SHEET 2.

FIG. 2.

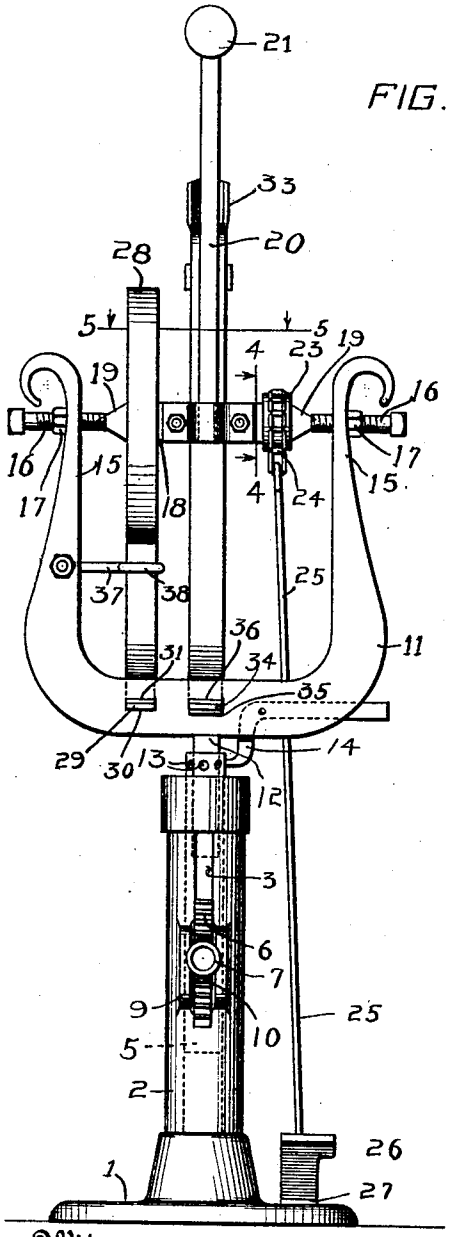
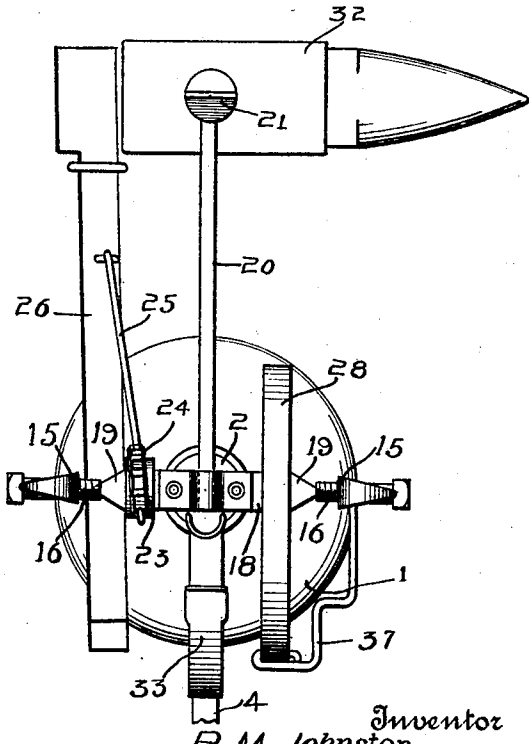


FIG. 3.



Witnesses

R. G. Thomas

J. W. Garner

Inventor

R. M. Johnston

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

RICHARD M. JOHNSTON, OF GALLUP, NEW MEXICO.

SPRING-HAMMER.

1,323,222. Specification of Letters Patent. **Patented Nov. 25, 1919.**

Application filed April 29, 1918. Serial No. 231,473.

To all whom it may concern:

Be it known that I, RICHARD M. JOHNSTON, a citizen of the United States, residing at Gallup, in the county of McKinley and State of New Mexico, have invented new and useful Improvements in Spring-Hammers, of which the following is a specification.

This invention is an improved spring hammer for use as a blacksmith's helper, the object of the invention being to provide an improved spring hammer of this class which is simple in construction, which can be adjusted vertically and also laterally according to the work, and which can be readily operated by one foot and which can also be adjusted to vary the tension of the spring and to hence cause the hammer to deliver light or heavy blows as may be desired.

With the above and other objects in view the invention consists in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawings:—

Figure 1 is an elevation partly in section, of a spring hammer constructed and arranged in accordance with my invention.

Fig. 2 is an elevation of the same at right angles to Fig. 1.

Fig. 3 is a plan of the same.

Figs. 4 and 5 are detail sectional views of the same respectively on the planes indicated on the lines 4—4 and 5—5 of Fig. 2.

The base 1 may be secured on the floor by screws or spikes, is provided with a standard 2 which has a vertical bore and is also provided with a slot 3 which communicates with one side of the bore. A brace 4 is provided for the standard as shown.

A plunger 5 fits and is movable vertically in the bore of the standard, projects above the upper end of the standard and is provided on one side with a rack 6 which rack projects through and is arranged to operate in the vertical slot 3. A lever 7 which is manually operated is pivotally mounted as at 8 between two lugs 9 with which the standard is provided and the said lever is provided with a spring pressed double ratchet 10 which co-acts with the rack to raise or lower the plunger 5, by step-by-step movement, as will be understood. A U-shaped head 11 is provided at the base with a centrally arranged depending spindle 12 which is pivotally mounted in a vertical bore in the upper portion of the plunger, so that the head may be turned in any desired direction. The plunger has a series of radially arranged adjusting openings 13 near its upper end and the head is provided with a pivotally mounted locking dog 14 which may be engaged with any one of the openings 13 to lock the head in any desired position.

The arms 15 of the head are provided near the upper ends with thrust bearing screws 16, each of which has a jam nut 17. A rock shaft 18 has conical ends 19 which engage similar recesses in the opposing ends of the screws 16 and hence the rock shaft can be readily turned. The handle or arm 20 of a hammer 21 is secured at one end in a radial central opening with which the rock shaft is provided. The shaft is provided near one end with a drum shaped cam 23 to which a short chain 24 is connected, so that said chain can be partly wound on said cam or drum. A rod 25 has its upper end connected to the lower end of the chain. The lower end of said rod is connected to a foot lever 26 which is pivotally mounted as at 27.

A coil spring 28 is also provided, which has its inner end attached to the rock shaft. The other end of said spring forms a straight arm 29 which extends through and is adjustable in a slot 30 with which the base of the head is provided and said arm of the spring is adjustably secured in said slot by means of a wedge 31. The chain is reversely wound with respect to the spring 28 so that the spring serves to raise the hammer by turning the rock shaft in one direction, the lever 26 when depressed by one foot, acting through the instrumentality of the rod 25 the chain 24 and the cam or drum 23 to turn the rock shaft in the reverse direction and to thereby cause the hammer to strike on the work which is arranged on an anvil 32.

To catch and stop the hammer at its rebound and upstroke, which is imparted thereto by the spring 28, I provide a buffer spring 33 which is preferably semicircular as here shown and may consist of one or more leaves as required. The lower end of the spring 33 forms a straight arm 34 which passes through and is adjustable in a slot 35 with which the base of the head is provided, said buffer spring being held in any desired adjustable position by means of a wedge 36.

A brace rod 37 is provided for the spring 28, said brace rod being secured to one arm of the head and being provided at the outer end with a loop 38 through which said spring passes, as shown.

By adjusting the arm 29 of the spring 28 the tension of said spring may be varied and hence the hammer may be adjusted to deliver either light or heavy blows as may be desired. By adjusting the arm 34 of the buffer spring the tension of the latter may also be varied as required, as will be understood.

Owing to the provision of the vertically adjustable plunger which carries the head, the hammer may be vertically adjusted according to the height of the anvil or work. Owing to the pivotal mounting of the head the hammer may be turned and adjusted to cause it to deliver its strokes on any part of the work on the anvil.

While I have herein shown and described a preferred form of my invention I would have it understood that changes may be made in the form, proportion and construction of the several parts without departing from the spirit of my invention and within the scope of the appended claim.

Having thus described my invention I claim:—

A hammer of the class described comprising a hollow standard having a vertical slot, a plunger arranged within said standard, a rack carried by the plunger and projecting through said slot, an operating lever, pawls associated with said lever and engaging said rack for adjustment of said plunger, a U-shaped element, a spindle depending from said element and rotatably mounted in the adjacent end of said plunger, the latter having a series of spaced openings, a pivoted dog carried by said element and arranged to fit in said openings to hold said element in different rotary positions, a rock shaft carried by said element, a hammer arm or helve supported by said shaft, a hammer supported by the free end of the helve, a spring for holding said hammer elevated, and means for operating said hammer against the tension of said spring.

In testimony whereof I affix my signature.

RICHARD M. JOHNSTON.