

No. 736,265.

PATENTED AUG. 11, 1903.

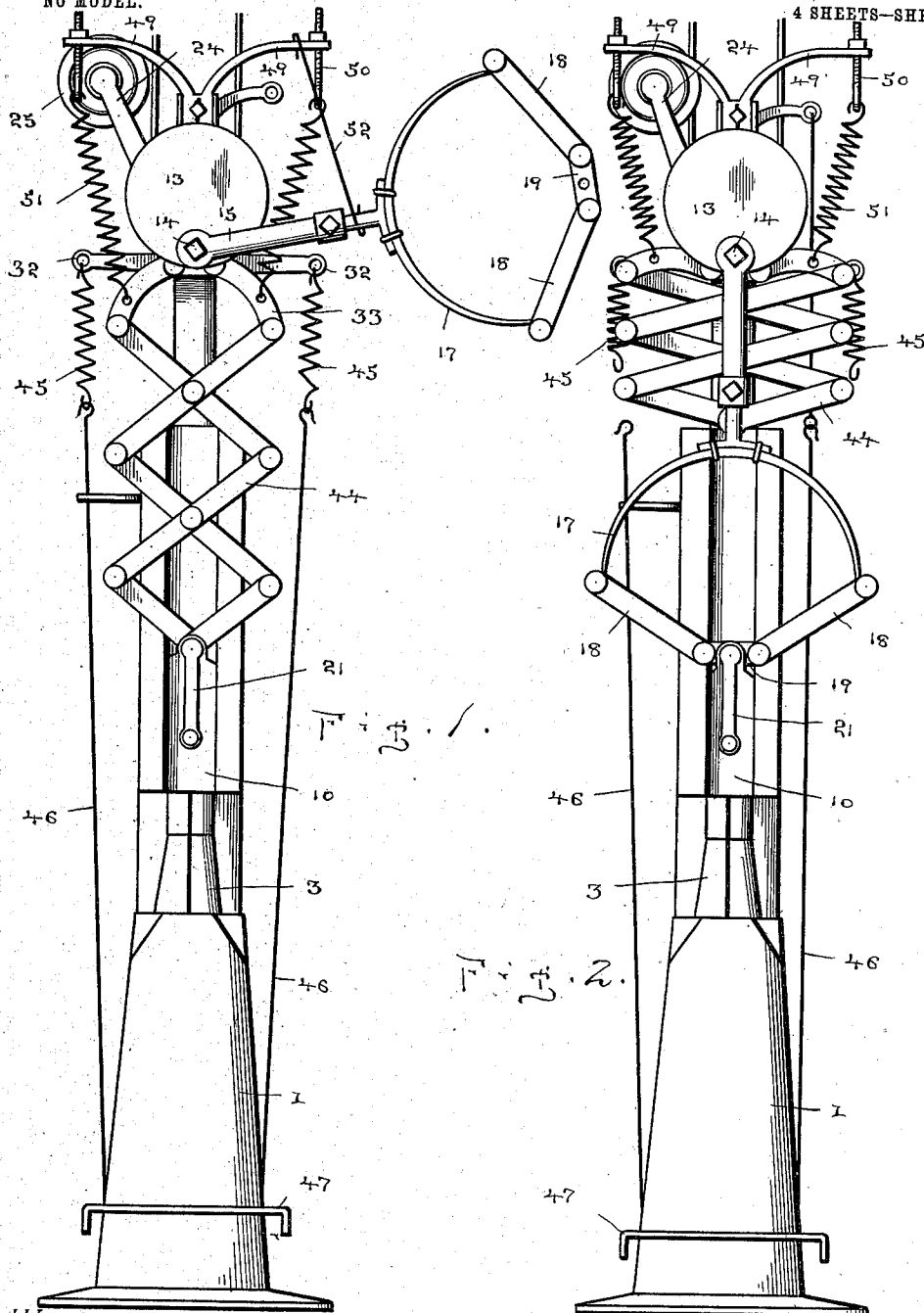
B. F. JINKS & E. W. DAVIS.

HAMMER.

APPLICATION FILED NOV. 25, 1902.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

J. W. Pugh
Hubert D. Lawson

INVENTORS
Benjamin F. Jinks.
By Edwin W. Davis.

Victor J. Evans Attorney

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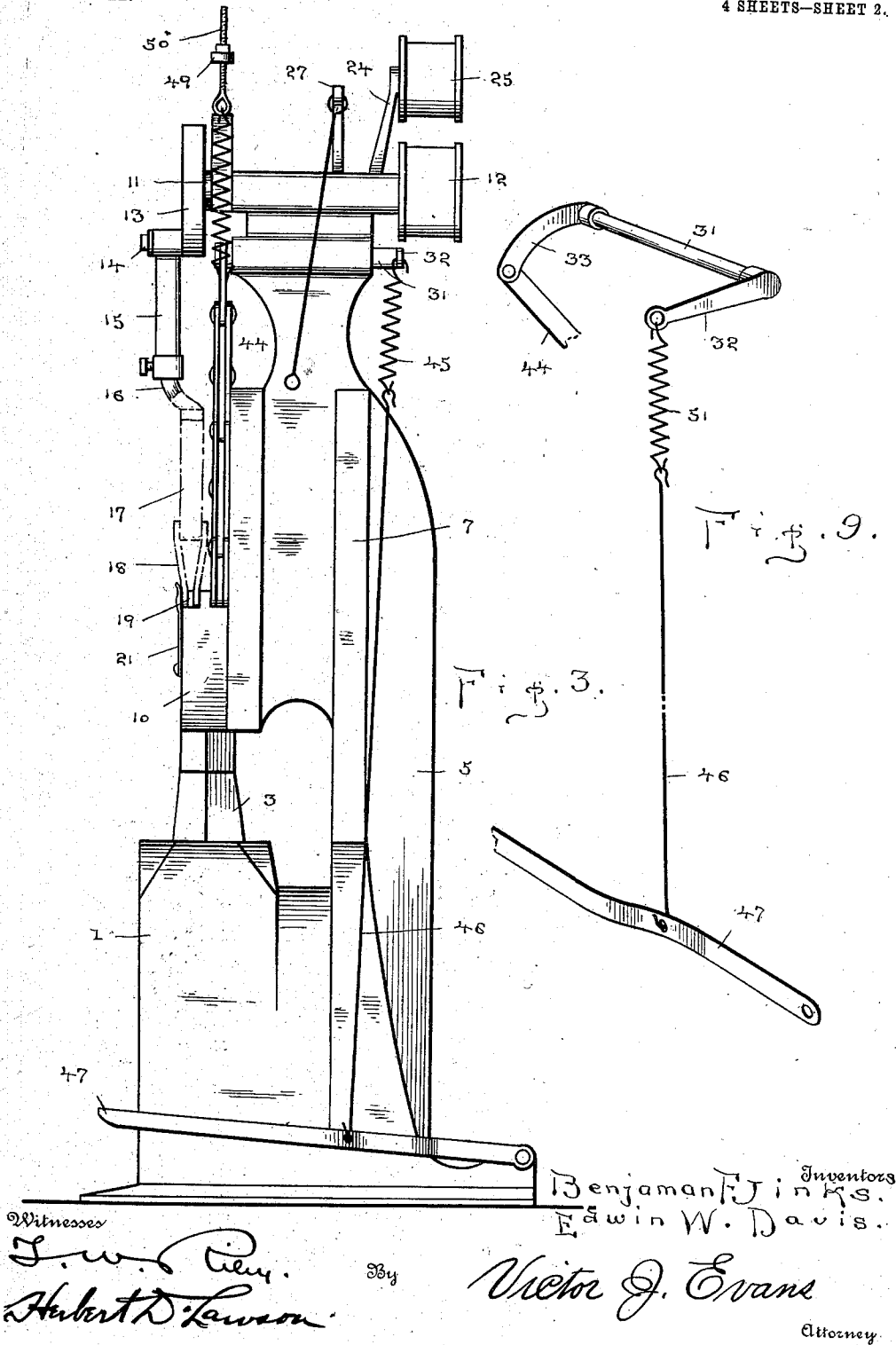
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4 SHEETS—SHEET 3.

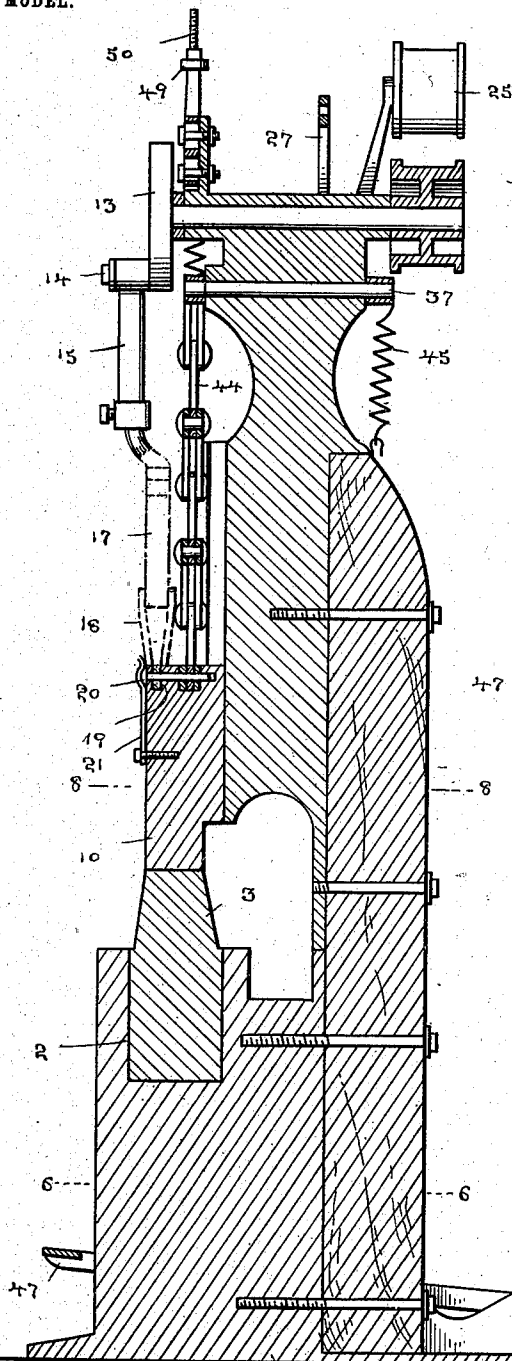


Fig. 4.

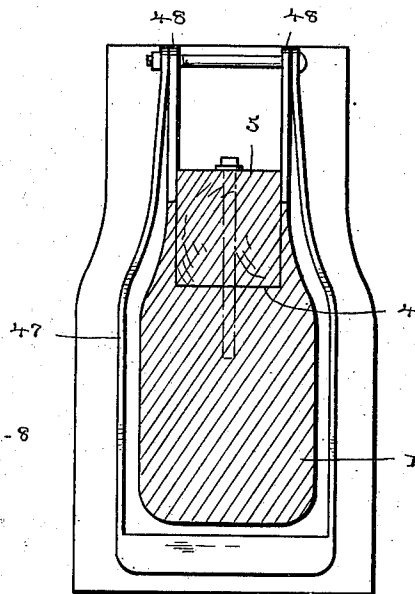


Fig. 6.

Witnesses

Herbert D. Lawson

By

Victor J. Evans

Inventors

Benjamin J. Jinks.

Edwin W. Davis.

Attorney.

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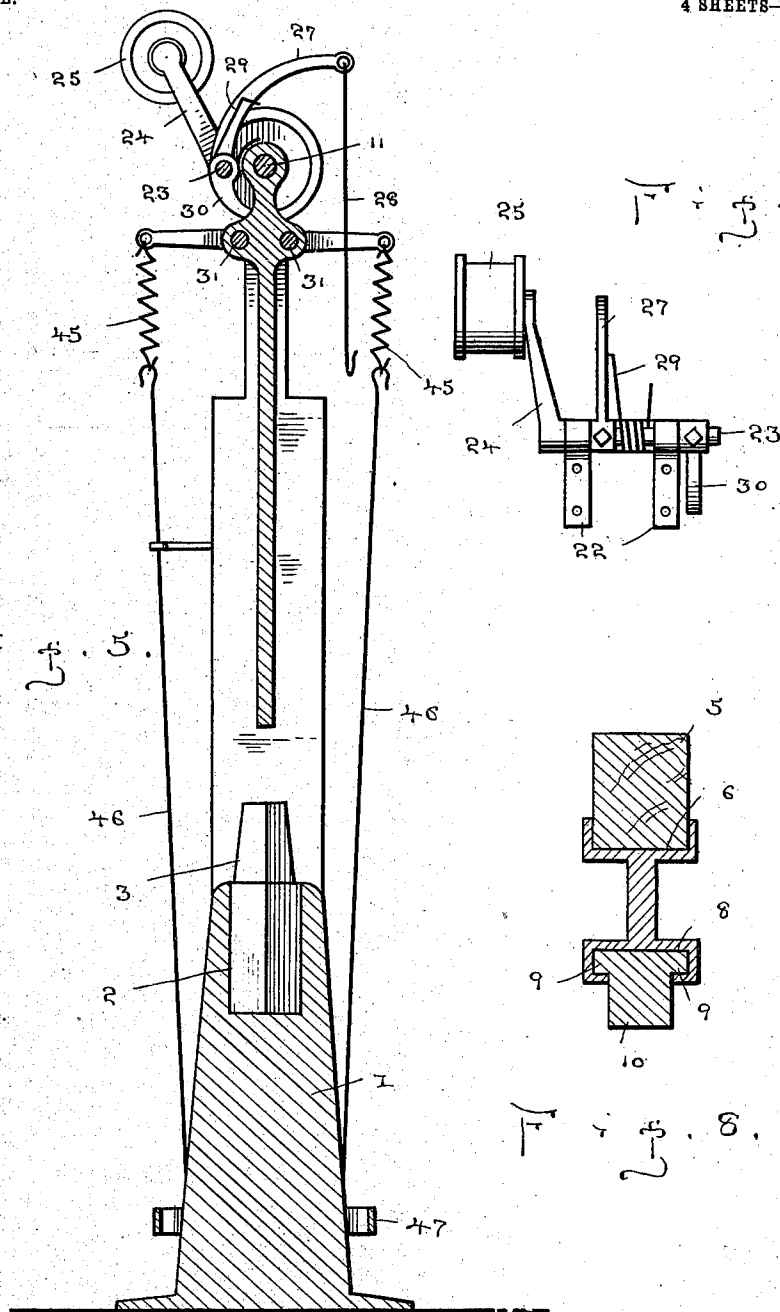
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NO MODEL.

4 SHEETS—SHEET 4.



Witnesses

J. W. Riley
Hubert D. Lawson

Benjamin F. Jinks.
Edwin W. Davis.

Victor J. Evans

Attorney.

UNITED STATES PATENT OFFICE.

BENJAMAN F. JINKS AND EDWIN W. DAVIS, OF MORRILL, KANSAS.

HAMMER.

SPECIFICATION forming part of Letters Patent No. 736,265, dated August 11, 1903.

Application filed November 25, 1902. Serial No. 132,808. (No model.)

To all whom it may concern:

Be it known that we, BENJAMAN F. JINKS and EDWIN W. DAVIS, citizens of the United States, residing at Morrill, in the county of Brown and State of Kansas, have invented new and useful Improvements in Hammers, of which the following is a specification.

Our invention relates to new and useful improvements in hammers; and its object is to provide a durable and powerful device of this character adapted to be operated by foot-power or from a rotary shaft driven in any suitable manner.

Another object is to so construct the parts of the hammer that it can be quickly arranged to be driven in either of the two ways mentioned.

A further object is to provide novel means whereby a slight depression of the foot-lever of the machine will produce a powerful stroke of the hammer, which when released will return automatically to its normal or raised position.

Another object is to so construct the frame or body of the hammer as to minimize its tendency to crack or break when the hammer falls.

With the above and other objects in view the invention consists in the novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of our invention, and in which—

Figure 1 is an elevation of the hammer with the parts arranged to be operated by foot-power, the pitman of the crank being shown detached from the hammer and held suspended out of operative position. Fig. 2 is a similar view showing the parts arranged to be operated from a rotary shaft. Fig. 3 is a side elevation of the apparatus, showing the lazy-tongs connected to the hammer and the pitman broken away, but dotted in the position it occupies when the hammer is driven from a shaft. Fig. 4 is a central vertical section through the hammer, also showing the lazy-tongs and pitman as indicated in Fig. 3. Fig. 5 is a transverse section through the apparatus. Fig. 6 is a section on the line 6 6, Fig. 4. Fig. 7 is a side elevation of the belt-

tightener used in connection with the device. Fig. 8 is a section on the line 8 8, Fig. 4. Fig. 9 is a detail view of the lazy-tongs-operating levers.

Referring to the figures by numerals of reference, 1 is the base-casting of the frame of the hammer and is provided at the top with a recess 2 for the reception of a suitable swage, fuller, or chisel 3. A vertical groove 4 is formed in the rear face of this casting, and a heavy (preferably wooden) post or beam 5 is bolted or otherwise secured therein and extends upward into and is secured within a similar groove 6, formed in the rear face of the upper casting or body portion 7 of the frame. This body rests upon the rear of the base and overhangs the tool 3, a groove 8 being formed in its front face for the reception of flanges 9, formed at opposite sides of a vertically-slidable block or hammer 10.

Within the top of the body 7 is journaled a horizontal shaft 11, having a pulley 12 at its rear end and a disk 13 at the opposite end. This disk has a wrist-pin 14, engaged by a tubular pitman 15, within which is adjustably secured a rod 16. This rod is connected to the center of a bow-spring 17, the ends of which are pivoted to the outer ends of toggle-links 18. These links are arranged at opposite ends of a plate 19, which is detachably secured within the upper end of hammer 10 by means of a pin 20. The pin may be normally held in position in any suitable manner, as by means of a pivoted spring retaining-strip 21.

Brackets 22 are secured to one side of body 7, at the top thereof, and a small shaft 23 is journaled therein. An arm 24 extends upward from the rear end of this shaft and is provided with a pulley 25, which is held normally above and to one side of the pulley 12, before referred to, and therefore normally out of contact with the loose belt 26 on said pulley 12. A second arm 27 extends from shaft 23 and over the top of casting 7, the end thereof being provided with a hooked rod 28. A fixed spring 29 incloses the shaft 23 and engages the arm 27 and serves to hold the pulley 25 normally pressed outward, a stop 30 being employed for limiting such outward

pressure by the spring. Shafts 31 are journaled in the body-casing 7 at points below the shaft 11, and they extend from front to rear of said casing. An arm 32 is arranged at the rear end of such shaft, while a preferably curved arm 33 is secured to each front end. These curved arms are secured to the upper ends of a lazy-tongs 44, and the lower end of said tongs is adapted to be secured to the hammer 10 by the removable pin 20, before referred to. The arms 32 are connected to coiled springs 45, which in turn are detachably fastened to the hooked upper ends of rods 46, extending downward and secured to a treadle 47, pivoted upon a bracket 48 at the rear of the base of the machine and extending across the front of said base.

Laterally-curved arms 49 are arranged at the top of the body 7, and each arm has a screw 50 engaging the same and connecting it to a coiled spring 51, extending upward from one of the arms 33.

In operation the tongs 44 and the toggle 18 are never connected to the hammer at the same time. When it is desired to drive the hammer by foot-power, the hooked rods 46 are placed in engagement with the springs 45 and toggle 18 is removed from engagement with hammer 10 and swung upward out of the way, where it can be held by a suitable hooked rod 52. This arrangement of the parts is illustrated in Fig. 1. By pressing downward upon the treadle the arms 32 are drawn downward, causing the arms 33 to swing toward each other and expand the springs 51. This movement of arms 33 extends the lazy-tongs 44 longitudinally and drives the hammer 10 violently against the tool 3 or other article in the path thereof. When the treadle 47 is released, the springs 51 contact and return the parts to normal positions. By interposing the springs 45 intermediate the arms 32 and rods 46 the treadle is permitted to continue its downward movement even after the hammer has stopped in its downward movement. In this way sudden jarring of the foot is prevented when the hammer strikes the metal. The hammer can be quickly converted from a foot-power to a motor-controlled machine-power by arranging the parts as shown in Fig. 2, in which the lazy-tongs 44 are shown disengaged from the hammer-head and the toggle 18 connected to said head instead. The rods 46 are then disengaged from the springs 45 and one of them placed in engagement with the rod 28. As the belt 26 is loosely mounted on pulley 12, it can travel therearound without revolving it; but as soon as the treadle 47 is depressed the rods 46 and 28 draw the arm 27 downward and throw pulley 25 against the belt and tighten it on pulley 12. Shaft 11 will be promptly revolved, turning disk 13 and forcing pitman 15 downward, thereby driving the hammer 10 into contact with the article arranged to receive the blow. The bow-spring 17 serves as

a cushion to relieve the machine of undue jarring occasioned by the stroke of the hammer. As soon as the treadle 47 is released spring 29 will return pulley 25 to its normal position, thereby loosening the belt and stopping the action of the hammer.

By securing together the two sections 1 and 7 of the frame by means of the beam 5 said frame is rendered more durable, as we have found that the wood will withstand a greater lateral strain resulting from the impact of the hammer than will the metal connection commonly used.

In the foregoing description we have shown the preferred form of our invention; but we do not desire to limit ourselves thereto, as we are aware that modifications may be made therein without departing from the spirit of the invention, and we therefore reserve the right to make such changes as fairly fall within the scope of our invention.

Having thus fully described the invention, what is claimed as new is—

1. In a hammer, the combination with a frame, of a hammer slidably mounted thereon, shafts journaled in the frame, arms at opposite ends thereof, a lazy-tongs connecting one pair of arms to the hammer, a treadle, a spring connection between the treadle and remaining pair of arms, and springs holding the hammer and lazy-tongs normally raised.

2. In a hammer, the combination with a frame; of a hammer slidably mounted thereon, a lazy-tongs connected to the frame and hammer, adjustable springs secured to the tongs and adapted to hold the tongs and hammer normally raised, a treadle, and spring connections between the treadle and tongs whereby said tongs may be extended and the hammer operated.

3. In a hammer, the combination with a frame; of a hammer slidably mounted thereon, a lazy-tongs connected to the frame and hammer, arms connected to the tongs, a treadle, and spring connections between the arms and treadle whereby the tongs may be extended and the hammer operated.

4. In a hammer, the combination with a frame; of a hammer slidably mounted thereon, a shaft journaled in the frame, an arm at each end thereof, a lazy-tongs connecting one arm with the hammer, a treadle, and a spring connection between the treadle and the other arm of the shaft.

5. In a hammer, the combination with a frame having arms extending therefrom; of a hammer, shafts journaled in the frame, arms at the ends thereof, a lazy-tongs connected to one pair of arms and to the hammer, springs adjustably secured to the arms and connected to the tongs whereby the hammer is held normally raised, a treadle, and a spring connection between the treadle and the other arms of the shafts.

6. In a hammer, the combination with a frame; of a hammer slidably mounted there-

on, swinging arms pivoted to the frame, a
lazy-tongs secured to the arms and hammer,
means for swinging the arms toward each
other simultaneously and thereby extending
5 the tongs and operating the hammer, and an
adjustable spring connecting each arm with
the frame for returning the parts to normal
positions.

In testimony whereof we affix our signa-
tures in presence of two witnesses.

BENJAMAN F. JINKS.
EDWIN W. DAVIS.

Witnesses:

A. T. GASTON,
NORA KEPLINGER.