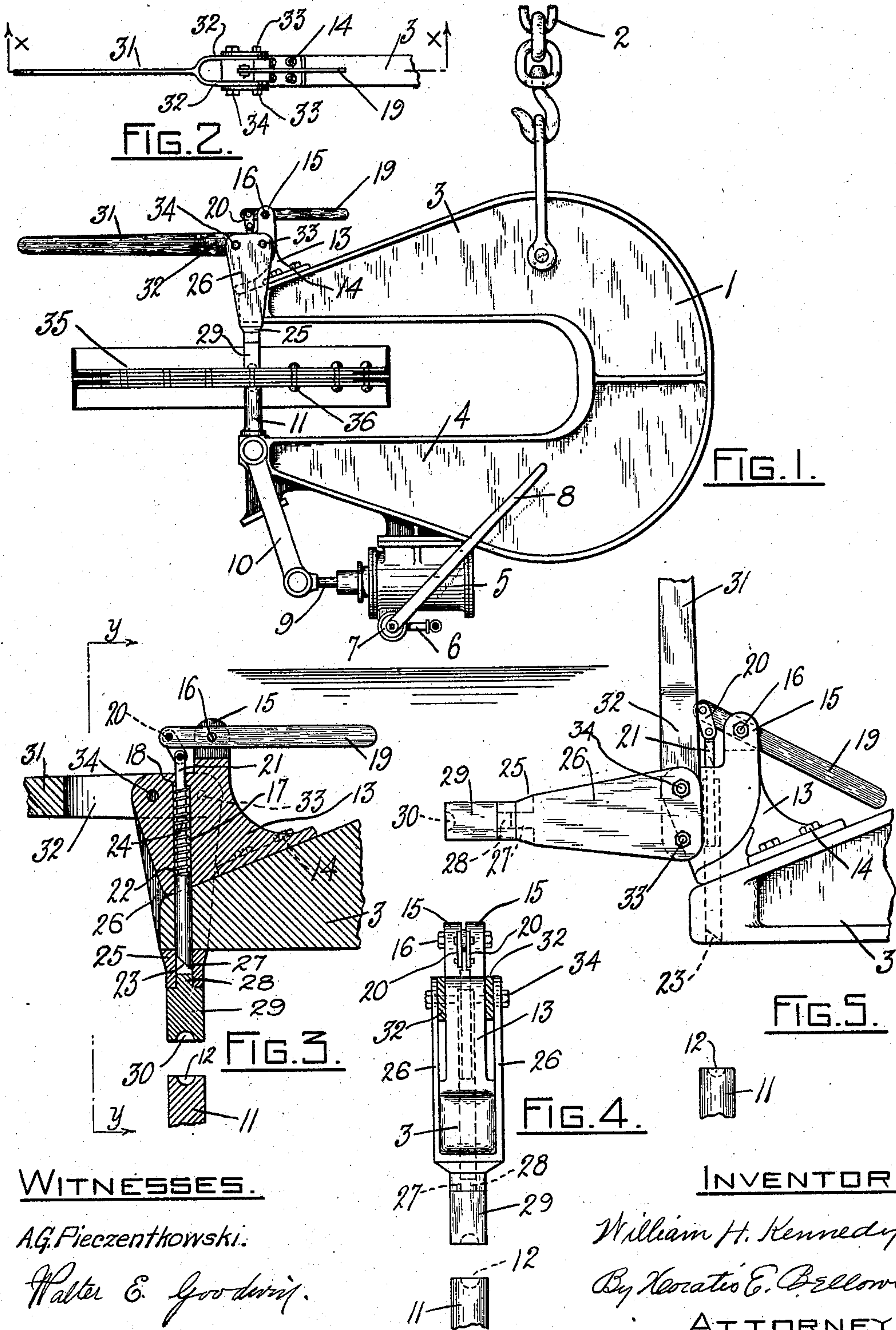


W. H. KENNEDY.
RIVETING MACHINE.
APPLICATION FILED JULY 16, 1907.

923,852.

Patented June 8, 1909.



WITNESSES.

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RIVETING-MACHINE.

No. 923,852.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM H. KENNEDY, a citizen of the United States, residing at Joplin, in the county of Jasper and State of Missouri, have invented certain new and useful Improvements in Riveting-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to devices for riveting, and is adapted more particularly for use in riveting girders, and other objects of large dimensions.

It has for its essential objects a facile means for disengaging the riveting device from the article riveted; a speedy means for disengaging the operative parts; and simplicity and convenience of operation combined with cheapness.

To the above ends essentially my invention consists in the novel construction and combination of parts hereinafter set forth, and illustrated in the accompanying drawings, wherein,

Figure 1 is a side elevation of my novel riveting mechanism. Fig. 2, a plan of the forward portion of the same. Fig. 3, a section of the same on line *x x* of Fig. 2. Fig. 4, a section on line *y y* of Fig. 3, and Fig. 5, a side elevation of the same showing the parts in open position.

Like reference characters indicate like parts throughout the views.

The preferred embodiment of my invention is herein shown in conjunction with the hollow frame, 1, suspended by chain, 2, and comprising the forwardly extending horizontal upper and lower arms, 3 and 4, in vertical alinement with each other. Fixed to the bottom of the lower arm is the cylinder, 5, which is connected with an air pump, not shown, by pipe 6. The cylinder is provided with the usual valve, 7, for controlling the admission of air and valve lever, 8.

9 is the cylinder piston, 10 the link or connecting rod, and 11 the lower riveting die pivoted thereto, which slides vertically in the end of the arm, 4. The heading of the rivet is done by the die, 11, whose upper end is preferably cupped as at 12.

My invention is mainly directed to the portions of the device now to be described. This consists in detail of a suitable bracket or standard, 13, fixed by screws, 14, or otherwise upon the top of the arm, 3, near the end

thereof. The top of the standard is bifurcated to form vertical bearings or ears, 15, for a pivot pin, 16. A vertically disposed opening, 17, extends through the standard, 13, arm 3, and the yoke hereinafter described, in front of the ears, 15. The opening being of less diameter near its top to form a shoulder, 18. A hand lever, 19, is pivoted forward its center upon the pin, 16, and is connected by links, 20, upon its forward end with a latch bolt, 21, slidably mounted in the opening, 17. The lower portion of the bolt is of increased diameter or thickness below its medial portion to produce a shoulder, 22. The bevel face 23 of its lower end is toward the front of the machine. The length of the bolt is such that when the hand lever, 19, is depressed, the lower end of the bolt is above the plane of the lower end of the arm, 3; and when the lever is elevated, projects below said plane. A compression spring, 24, surrounds a portion of the bolt, 21, with one end resting against the shoulder, 18, and the other end against the shoulder, 22, whereby the bolt is normally pressed toward its depressed or engaged position. A U shaped frame or yoke, 25, is mounted upon the standard, 13, whose arms consist of triangular plates, 26, lying in parallel planes, and whose cross portion is provided with a socket, 27, adapted to receive the shank, 28, of the anvil or die set, 29. The shank is retained in the socket frictionally or by a retaining pin or in any desired manner. The die set is provided with a cavity, 30, in its end. The plates, 26, are broad at their tops and taper downwardly. A hand lever, 31, has a bifurcated or U shaped end, 32. Each leg, 32, of the bifurcated end is fixed by a screw, 33, to one of the plates, 26, at the rear upper corner thereof. The forward upper corners of the plates, 26, the lever ends, 32, and the standard 13, are traversed by a pivot pin, 34, whereby, when the arm, 31, is elevated or depressed, the yoke may be swung to a horizontal or vertical position.

The operation of my mechanism is described in connection with a girder, 35, illustrated in Fig. 1, wherein 36 shows the rivets. The ends of the girder rest upon horses or otherwise, and the suspended frame, 1, is applied thereto. The heading die, 11, is applied to the lower or heated end of the rivet, and the die set, 29, rests upon the rivet head.

The die 11 is reciprocated from the cylinder, 5, when set in operation by the lever, 8. After the riveting operations are completed and it is necessary to disengage the frame, 1, from the girder, the lever, 19, is depressed which raises the bolt, 23, into the position shown in Fig. 5, which frees the bolt from the yoke, 25. The lever, 31, is then elevated and the yoke brought into horizontal position as shown in the last mentioned figure.

It will be observed that in normal or operative position the riveting or heading die and the die set are in vertical alinement with each other, and that the die set may be thrown out of alinement or elevated to any degree required for the easy disengagement of any shaped piece of work.

What I claim is,

1. In a portable riveting machine, the combination with a frame comprising two fixed arms, and a riveting die in one arm, of a die-set upon the other arm and a yoke-support carrying said die-set, said yoke-support being pivotally supported from the upper arm and mounted to swing to bring the die-set into a vertical position over the riveting die or into a horizontal position beyond the end of said arm, and means engageable through the upper arm for locking the yoke in its vertical position.

2. In a riveting machine, the combination with a suspended portable frame having two fixed arms with the arms balanced, and a riveting die mounted for reciprocation in one of said arms, of a die set, a pivotal yoke support therefor mounted upon the other arm and means connected with said support for moving it into and out of vertical alinement with the riveting die, and means movable through the yoke and upper arm for locking the set in vertical position.

3. In a riveting machine, the combination with a frame comprising two fixed arms, of a vertical movable riveting die mounted in one arm, a standard mounted on the upper arm, a die set, a support therefor pivotally mounted on said standard to swing into vertical alinement with the riveting die, and means fulcrumed on said standard for moving said support on its pivot to bring it into a plane above the lower edge of the arm on which it is mounted, a pivoted lever, and means carried thereby for locking said yoke in its vertical position.

4. In a riveting machine the combination with a frame comprising two arms, and a riveting die in one arm, of a standard upon the second arm, a yoke pivotally mounted

upon the standard, a die set upon the yoke, and a lever fixed to the yoke.

5. In a riveting machine the combination with a frame comprising two arms, and a riveting die in one arm, of a standard upon the second arm, a yoke comprising flat arms and a cross piece, a die set upon the cross piece, a pivot pin in the standard and upon which the yoke is mounted, and a lever fixed to the flat arms and loosely traversed by the pivot pin.

6. In a riveting machine the combination with a frame comprising two arms, and a riveting die in one arm, of a standard upon the second arm, a yoke pivotally mounted upon the standard and provided with an opening, a die set upon the yoke, means for swinging the yoke, a bolt slidably mounted in the standard and registering in the opening, and means for sliding the bolt out of the opening.

7. In a riveting machine the combination with a frame comprising two arms, and a riveting die in one arm, of a standard upon the second arm, a yoke pivotally mounted upon the standard and provided with an opening, a die set upon the yoke, means for swinging the yoke, a bolt slidably mounted in the standard registering in the opening, a lever mounted in the standard and pivotally connected with the bolt.

8. In a riveting machine the combination with the frame and riveting die, of a standard upon the frame, a yoke movably mounted upon the standard provided with an opening, a die set upon the yoke, means for moving the yoke, a bolt slidably mounted in the standard and in the opening, spring means for pressing the bolt into the opening, and means fulcrumed upon the standard and pivotally connected with the bolt for forcing the bolt out of the opening.

9. In a riveting machine the combination with the frame and riveting die, of a standard upon the frame, a yoke movably mounted upon the standard provided with an opening, a die set upon the yoke, means for moving the yoke, a belt slidably mounted in the standard, a spring in the standard engaging the bolt, a lever mounted upon the standard, and a link connecting the bolt and lever.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM H. KENNEDY.

Witnesses:

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JAMES WESTERMAN.