

(No Model.)

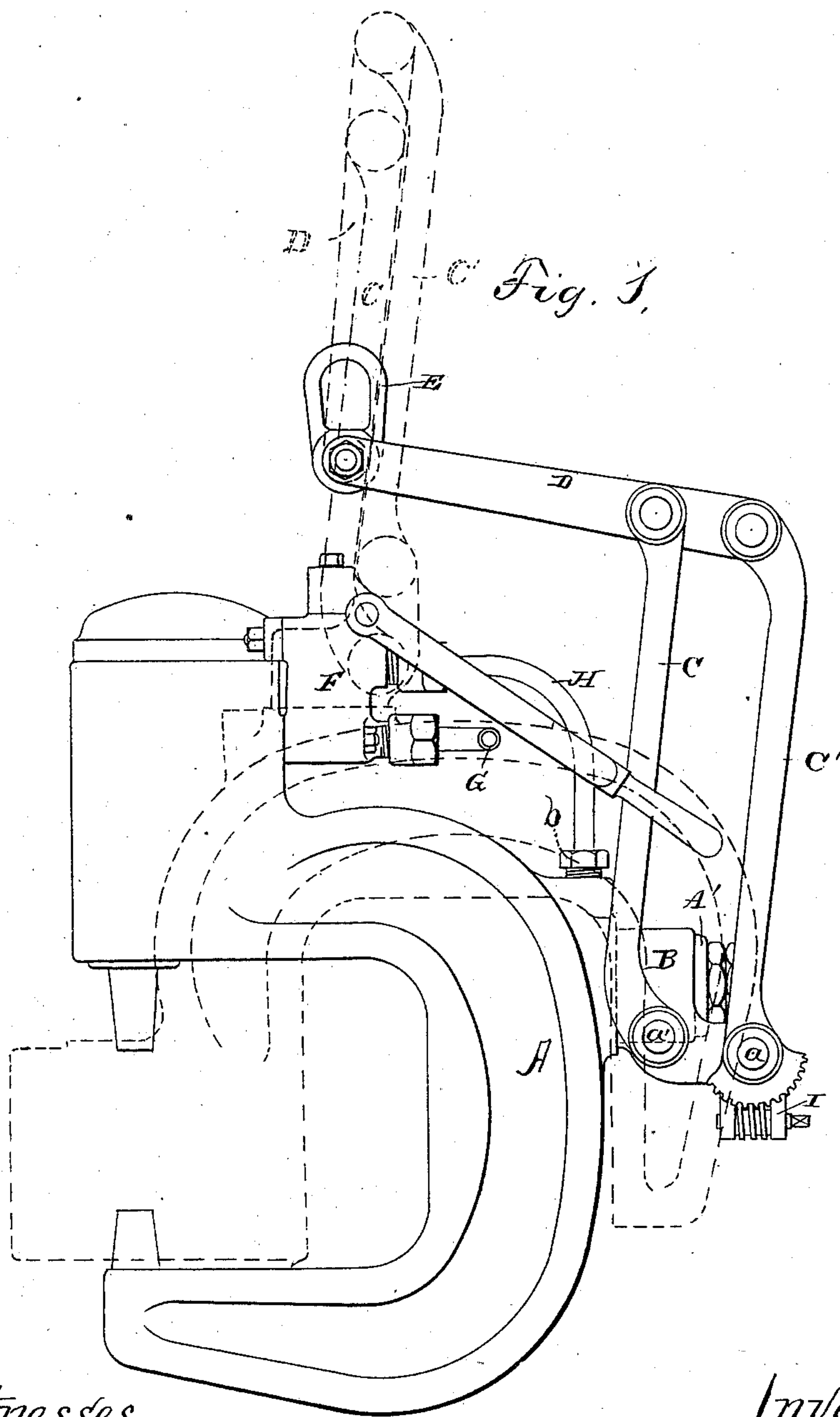
2 Sheets—Sheet 1.

J. FIELDING.

APPARATUS FOR SUSPENDING PORTABLE RIVETING MACHINES.

No. 307,282.

Patented Oct. 28, 1884.



Witnesses
Geo. F. Downing.
S. G. Nottingham

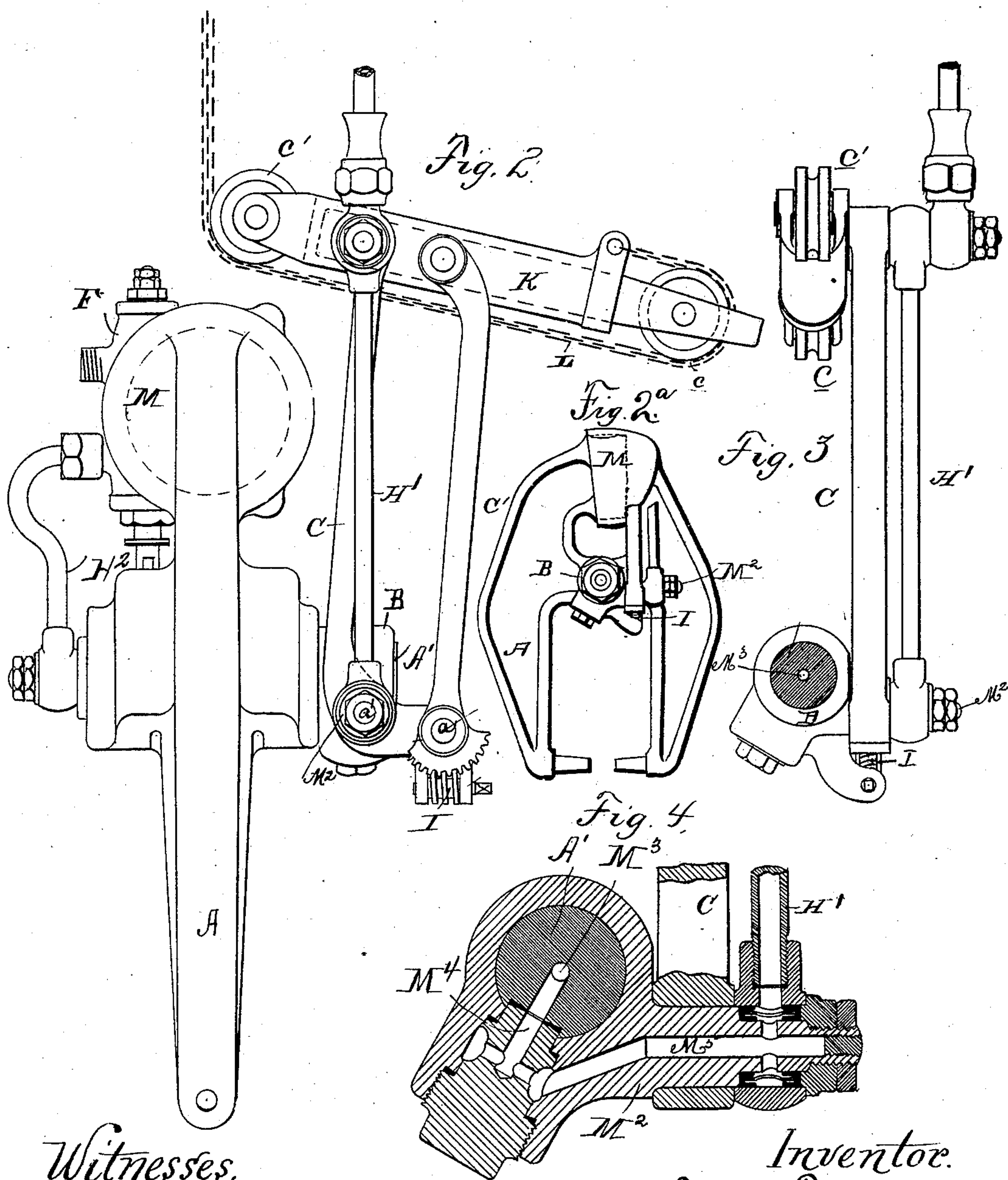
Inventor.
John Fielding.
By H. A. Symmon.
Atty.

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By H. A. Sussman,
Att'y.

UNITED STATES PATENT OFFICE.

JOHN FIELDING, OF GLOUCESTER, COUNTY OF GLOUCESTER, ENGLAND.

APPARATUS FOR SUSPENDING PORTABLE RIVETING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 307,282, dated October 28, 1884.

Application filed April 19, 1884. (No model.) Patented in England March 25, 1882, No. 1,439; in France September 8, 1882, No. 151,016, and in Belgium September 8, 1882, No. 58,971.

To all whom it may concern:

Be it known that I, JOHN FIELDING, of Gloucester, in the county of Gloucester and Kingdom of Great Britain, have invented certain new and useful Improvements in Apparatus for Suspending Portable Riveting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an apparatus for suspending portable machines employed for riveting and such like operations, the object being to obtain in a simple manner facilities for applying the tools of such machines at various points and in various directions, according to the work that they have to perform. To accomplish this end, I fit on a trunnion on either side of the machine, at or near its center of gravity, a sleeve, within which the trunnion can revolve, and to the sleeve I joint, by two parallel links like those of a parallel ruler, a bar projecting beyond the links a distance such that its end is nearly above the center of the machine. The machine, being suspended by a swivel attached to the end of the bar, can be turned into various attitudes, so that its tools can be presented at any required point and in any required direction within the limits permitted by the jointing. In cases where the machine is worked by hydraulic or other fluid pressure, the fluid can be supplied through the trunnion, being conducted thither along the bar and either of the links, which may for that purpose be made tubular, or by a separate pipe with suitable swivel-joints.

In the accompanying drawings, Figure 1 is a view in side elevation of one form of machine embodying my invention. Fig. 2 is an edge view of another form of machine, and Fig. 2^a is a view in side elevation of the machine shown in Fig. 2. Fig. 3 is an end view of the links shown in Fig. 2, and Fig. 4 is an enlarged view, in section, of the trunnion.

A represents a portable riveting-machine provided with a trunnion, A', formed on the back thereof nearly in the line of the center of gravity of the machine. This trunnion is

embraced by a sleeve, B, within which the trunnion is free to turn. This sleeve B is connected by two links, C C', like those of a parallel ruler, to a beam, D, having at its end the suspension-link E, nearly in the line of the center of gravity of the riveter.

F is the valve-box, provided with the supply-pipe H and with the discharge G, through which the exhaust-water passes. The lower end of the link C' is provided with teeth arranged in the arc of a circle, which latter mesh with the worm I, journaled to the sleeve B. Thus it will be seen that by turning the worm in one direction the riveter, by reason of its weight, is permitted to turn, which elevates the link C', while the joint a' is lowered, causing the two links and the beam D to assume a vertical position, with the free end of the beam D downward, as shown in dotted lines of Fig. 1. By reversing the motion of the worm the riveter can be turned in the opposite direction.

In Figs. 2 and 2^a a slightly modified construction of parts is employed in connection with a different style of portable riveting-machine. This riveting-machine consists, essentially, of two levers pivoted together, one of said levers being provided at one end with a cylinder, M, and at its opposite end with a riveting-tool, while the other lever is provided at one end with a plunger moving within the cylinder, and at its opposite end with a riveting-tool adapted to operate in conjunction with the riveting-tool of the other lever. The links are connected to the sleeve B as before described, and the upper ends thereof are pivotally secured to the hydraulic lift-cylinder K, to be referred to further on. The actuating-fluid is supplied to the valve-box F by the pipe H', which latter is connected by means of packing-rings and nuts to the hollow arm M², formed on or with the sleeve B. This hollow arm is in communication with the passage-way M³ of the trunnion A' by the port M⁴. To the opposite end of the trunnion A' is connected the pipe H², which conveys the water to the box F.

In Fig. 2 I have dispensed with the beam D of Fig. 1, and employed instead thereof the hydraulic lift-cylinder K, which latter is provided with a plunger having a pulley, c, jour-

naled to the outer end thereof. A chain, L, secured at one end to the cylinder of the lift, passes under pulley *c* and under pulley *c'* at the opposite end of the lift, and from thence
5 to a crane or other overhead support. In this instance the supply-pipe H' passes downwardly alongside of the link C and communicates with the hollow trunnion through the ports M⁵ and M⁴.

10 In the construction of parts shown in Fig. 2 the trunnion A' is made fast to the sleeve B, and the riveter revolves on the said trunnion, but is held against accidental turning by a set-screw.

15 From the foregoing it will be seen that by turning the screw I the inclination or angle of the riveting-machine can be varied at pleasure, and by simply admitting water to the cylinder K behind the plunger the machine can
20 be elevated.

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

1. The combination, with a portable riveting-machine provided with a trunnion, of a sleeve embracing one end of said trunnion, and parallel links pivotally connected at their lower ends to said sleeve, and pivotally connected at their upper ends to a movable supporting device.
30

2. The combination, with a portable riveting-machine provided with a trunnion, of parallel links pivotally secured at their lower ends to the sleeve, and pivotally secured at their upper ends to a hydraulic lift, substantially as set forth. 35

3. The combination, with a portable riveting-machine provided with a trunnion, of a sleeve embracing the trunnion, parallel links pivoted at their lower ends to the sleeve, and connected at their upper ends to a hydraulic lift, and the worm and segmental gear, substantially as set forth. 40

4. In a hydraulic riveter, the combination of a portable riveting-machine provided with a hollow trunnion, the sleeve embracing said trunnion, the links pivotally secured at their lower ends to the sleeve and at their upper ends to a movable support, and pipes connecting with the trunnion through which the actuating-fluid passes, substantially as set forth. 50

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN FIELDING.

Witnesses:

JOHN A. POPE,
H. CADEUNE.