

No. 726,080.

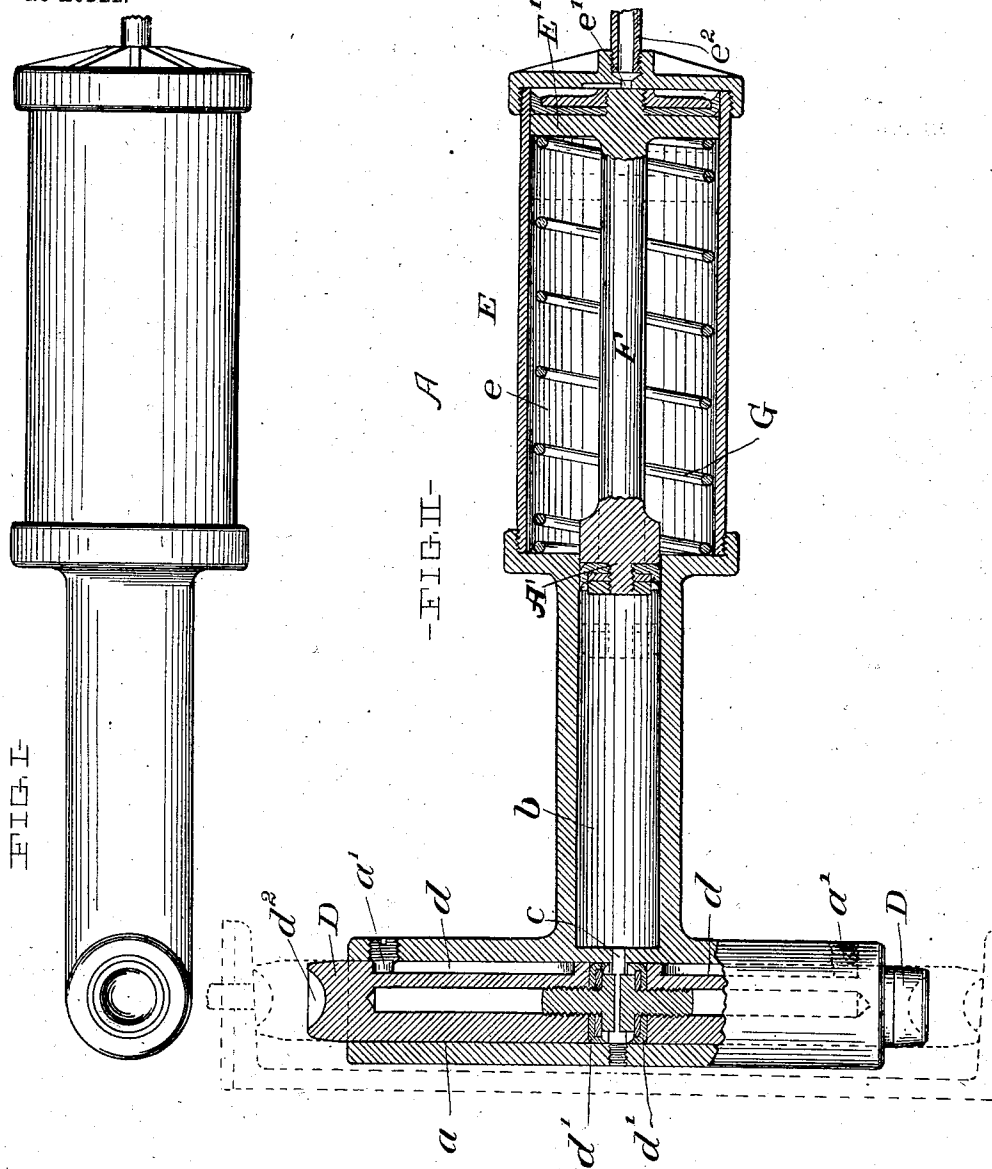
PATENTED APR. 21, 1903.

J. MACBETH & L. T. JOHNSON.

DOLLY BAR

APPLICATION FILED DEC. 26, 1901.

NO MODEL.



WITNESSES:

A. Merkel
D. Davis

INVENTORS

J. Macbeth & L. T. Johnson
BY *J. B. Fay*
ATTORNEY

UNITED STATES PATENT OFFICE.

JAMES MACBETH AND LAWRENCE T. JOHNSON, OF BUFFALO, NEW YORK.

DOLLY-BAR.

SPECIFICATION forming part of Letters Patent No. 726,080, dated April 21, 1903.

Application filed December 26, 1901. Serial No. 87,386. (No model.)

To all whom it may concern:

Be it known that we, JAMES MACBETH and LAWRENCE T. JOHNSON, citizens of the United States, and residents of Buffalo, county of Erie, and State of New York, have invented a new and useful Improvement in Dolly-Bars, of which the following is a specification, the principle of the invention being herein explained and the best mode in which we have contemplated applying that principle, so as to distinguish it from other inventions.

Our invention relates to means for holding rivets or the like in place while being upset or secured.

The object of such invention is to provide a portable device of said character of improved construction, whereby it may be efficaciously applied for use on I-beams or channel-bars in bridge-building or other constructions where the use of stationary devices of this character is prohibited, such portable devices as so especially applied being technically termed "dolly-bars."

The invention consists of means hereinafter fully described, and specifically set forth in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a top plan view of a device embodying our invention as particularly designed for holding rivets while being upset. Fig. II represents a vertical axial cross-section of such device, with the exception of a portion which is shown in elevation.

The main or body portion A consists of a portable structure of a size and weight such that it may be readily carried about and placed as desired by hand, such structure being of T shape, as shown, and formed with two cylindrical bores *a* and *b*, respectively, the axis of bore *a* being located at right angles relatively to the axis of bore *b*, the latter bore forming a pressure-chamber. The two bores have connection with one another through the medium of a channel *c*, located at the inner end of bore *b*, as shown. In each end of bore *a* and upon either side of chan-

nel *c* is located a plunger D D, the movement of each of which is limited by means of a groove *d*, formed in each plunger, and a stud *a'*, projecting from the inner surface of bore *a*. The inner end of each plunger is provided with suitable packing *d'* for effecting air-tight connection. The outer end of each plunger is formed with a recess *d²* for receiving the head of the rivet to be held.

Arranged tandem with the bore *b* of the pressure-chamber is a bore *e* of a cylinder E. Two pistons A and E' operate in said pressure-chamber and cylinder, respectively, and are connected and mounted upon a common piston-rod F, the length of such rod being such as to cause the pistons to occupy like ends of their respective strokes simultaneously. Intermediately of the piston E' and the opposite end of the cylinder is located a helical spring G, which normally holds the two pistons at the ends of their outward strokes, as shown in Fig. II, and at the outer head of cylinder E is formed a channel *e'*, to which may be connected a fluid-pressure connection *e²*.

In operating the above-described device and applying it for use in connection with I-beams and channel-bars, for which use the device is particularly adapted, the device is placed so as to bring one of the plungers immediately below the rivet to be operated upon, substantially parallel with the web of the beam or bar, as shown in Fig. II. Fluid under pressure being now admitted into the outer end of cylinder E, pistons A and E' are pushed forward against the action of spring G, whereby said spring is compressed and the plungers D D forced outwardly by the movement of the air in *b* until the one contacts the rivet and the other the opposite flange of the beam or bar. On continuing to admit the fluid under pressure the air in chamber-bore *b* and bore *a* is compressed, thus firmly pressing the plungers against rivet and flange. The pressure of the admitted fluid is of an intensity sufficient to properly hold the rivet while being upset. Upon completion of the upsetting operation the fluid-pressure is turned off from the cylinder, whereupon the compressed spring G returns the pistons quickly to their initial positions, thereby relieving the pressure upon the plungers and

permitting the latter to return to their normal positions.

Two plungers are preferably provided, as shown, whereby the tool is made double-ended
5 and a greater range of travel given with a given length of travel of one plunger than would be the case were but a single plunger employed. A device embodying the principle of my invention and employing but one
10 plunger may, however, be constructed, as will be readily understood from the foregoing description.

Compressed air is preferably used as a motive agent in actuating the piston E'.

15 Other modes of applying the principle of our invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed provided the means stated by any one of the following claims or the equivalent of such stated
20 means be employed.

We therefore particularly point out and distinctly claim as our invention—

25 1. A dolly-bar consisting of a portable body structure provided with a pressure-chamber in its main portion, a barrel located transversely relatively to said main structure por-

tion, said barrel being provided with a bore passing throughout its length; two plungers in opposite ends of said bore adapted to be
30 moved out of said barrel, a piston in said chamber, and means for actuating said piston to create pressure in said chamber, the latter being connected with said bore, whereby said plungers may be actuated outwardly
35 from said barrel in opposite directions.

2. A dolly-bar consisting of the combination of the portable body structure having the pressure-chamber *b*, the cylinder E, pistons E' and A connected upon one common piston-rod, the spring G, the bore *a* and the
40 plungers D D, bore *a* and chamber *b* being connected whereby pressure from chamber *b* may be communicated to bore *a*, and a suitable inlet for introducing fluid-pressure into
45 cylinder E.

Signed by us this 15th day of November, 1901.

JAMES MACBETH.
LAWRENCE T. JOHNSON.

Attest:

HARRY N. KRAFT,
WINDSOR DOHERTY.