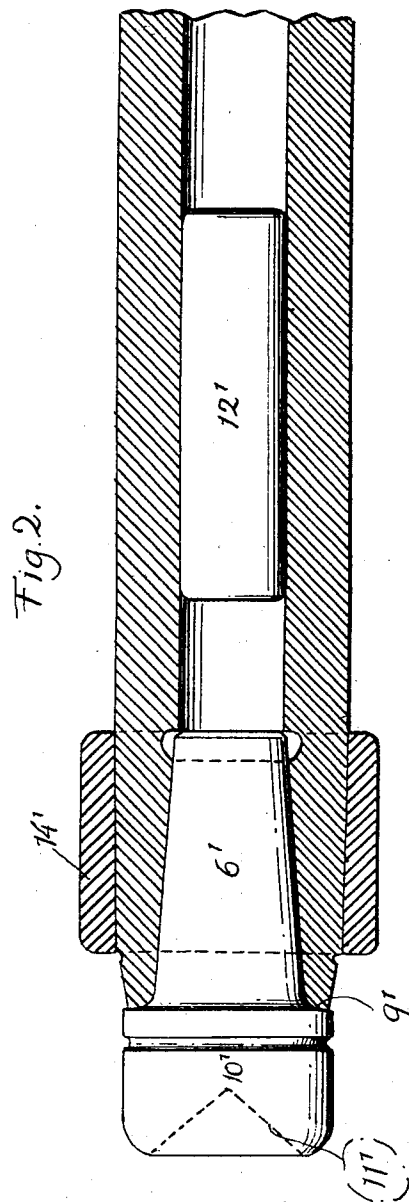
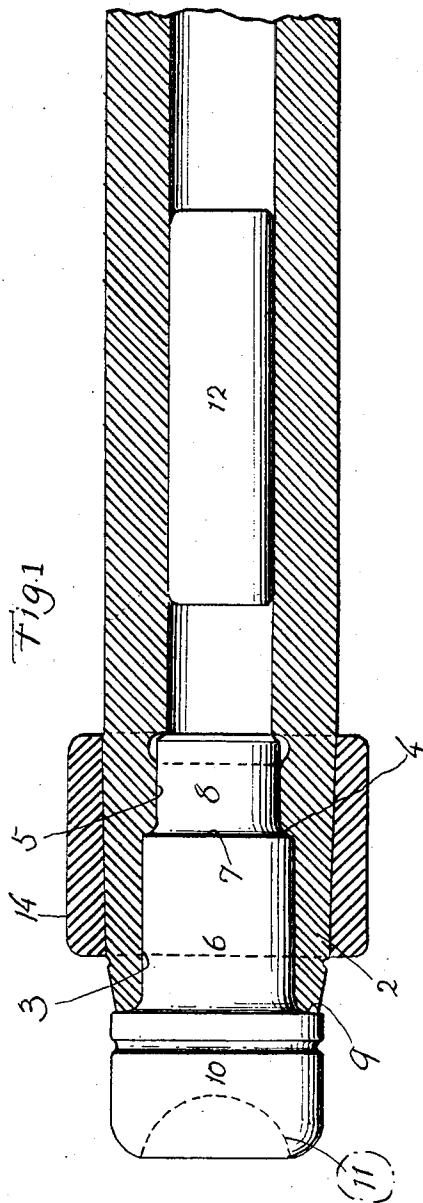


J. A. DAILEY.
PNEUMATIC RIVETING HAMMER.
APPLICATION FILED JUNE 19, 1919.

1,360,897.

Patented Nov. 30, 1920.



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UNITED STATES PATENT OFFICE.

JOHN A. DAILEY, OF BURLINGTON, IOWA.

PNEUMATIC RIVETING-HAMMER.

1,360,897.

Specification of Letters Patent.

Patented Nov. 30, 1920.

Application filed June 19, 1919. Serial No. 305,356.

To all whom it may concern:

Be it known that I, JOHN A. DAILEY, a citizen of the United States, resident of Burlington, in the county of Des Moines and State of Iowa, have made a certain new and useful Invention in Pneumatic Riveting-Hammers; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a central longitudinal section of a riveting hammer having the invention applied thereto.

Fig. 2 is a similar view of a modification.

This invention has relation to pneumatic riveting hammers and it consists in the novel construction and combinations of parts as hereinafter set forth.

It is found in practice that the standard dies used for riveting and stay bolt work are weak, there being an unnecessary proportion of breakage. It is the object of the invention to correct this weakness and to obtain certain other advantages to be hereinafter stated.

In the accompanying drawings illustrating the invention, the numeral 2 designates the cylinder, provided at its outer end with a cylindrical seat 3, terminating inwardly in a shoulder 4, leading to a reduced cylindrical seat 5.

Fitting within the cylinder is the die shank 6, having a shoulder 7 intermediately of its length, near the distal end thereof, and a reduced inner portion 8, the parts 6 and 8 of the shank being of the same diameter as the seats 3 and 5 of the cylinder, and the shoulder 7 of the shank bearing against the shoulder 4 of the cylinder bore. The die is provided with an outer shoulder 9 bearing against the outer end of the cylinder, and with an enlarged head end 10, the latter having a recess 11, which may be rounded or conical in accordance with the form of the rivet head.

It will be noted that the diameter of the recess 11 of the head of the die is the same as the diameter of the outer cylindrical seat 3, and of the shank portion 6 of the die, it being designed that the shock of the hammer striking the butt end of the die shall be transmitted through the die metal directly

to all parts of the rivet head; that is to say the lines of force resulting from the hammer strokes (hammer shown at 12) striking the butt end of the die will be transmitted to the rivet head evenly over all parts thereof to its outer circumference directly along straight line elements, through the solid metal of the die.

A modification of the invention is shown in Fig. 2, wherein the die shank is tapered from its butt or inner end to its head end, the taper being such that a continuance thereof would intersect approximately the outer margin or circumference of the recess 11. The die shank in this form is designated 6', and the enlarged head end 10', the outer shoulder 9' and the recess 11'.

It is preferred to use a reinforcing band 14 on the free end of the cylinder.

The invention is designed to increase the efficiency of the dies, to reduce vibration, and to hold the die more rigidly in the cylinder or barrel.

In the older type of devices, the die shank is of the same diameter throughout its length, and the die is provided with an outer shoulder seating against or engaging the outer end of the cylinder. Grave difficulties of rupture at the joining of the shank and the shoulder of the die have been encountered, in practice, and the cause of this has not been fully understood. It is believed to be due to the fact that the shank of the die is not supported in the rebound except by said shoulder of the die engaging the outer end of the cylinder, the rapidly vibrating die shank exerting such a pull upon said shoulder in the rebound as to strain the metal at that point and eventually cause breakage. In my improved device, I have overcome this difficulty by providing the shank and the cylinder with means whereby the thrust in the rebound is partially against the die shank, thereby relieving the die of the undue strain at the point stated.

I claim:—

1. In a pneumatic riveting hammer, a cylinder, a die provided with a shoulder seating at the outer end of the cylinder and with a shank fitting within the bore of the cylinder, a hammer reciprocative within the bore of the cylinder, and means located near the inner end of the shank for receiving the rebound thrust of the shank.

2. In a pneumatic riveting hammer, a

cylinder, a die provided with a shoulder seating at the outer end of the cylinder and with a shank fitting within the bore of the cylinder, and a hammer reciprocative within
5 the bore of the cylinder, said cylinder and said shank being provided with means located near the inner end of the shank for receiving the rebound thrust of the shank,

said means including a taper to said shank and a like taper to said cylinder.

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

JOHN A. DAILEY.

Witnesses:

H. F. KUHLEMEIER,

W. S. YATES.