Nov. 10, 1942. E. B. LEAR 2,301,889

RIVETING HAMMER

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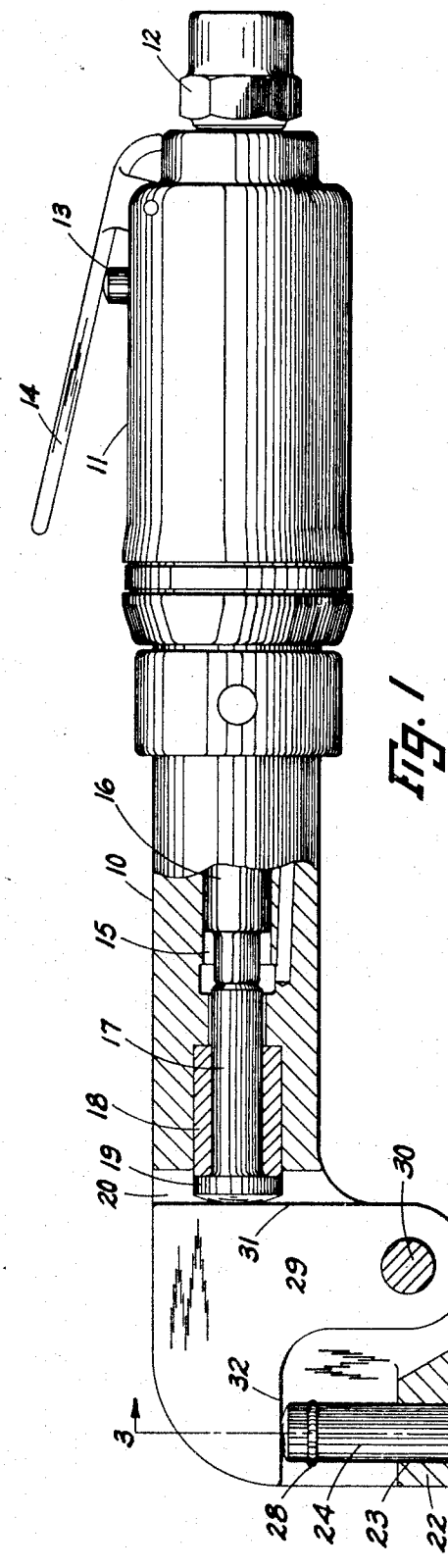



Fig. 1

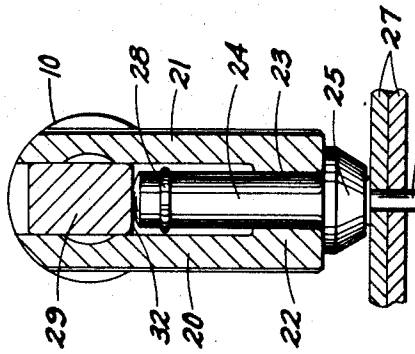



Fig. 3

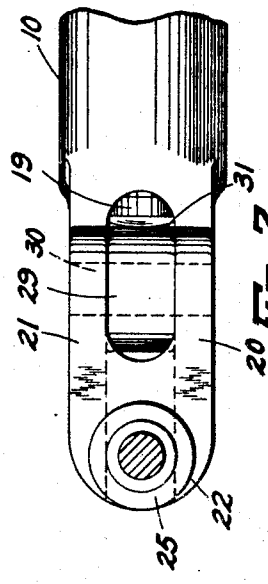



Fig. 2

INVENTOR
EARL B. LEAR
BY John C. Rempfer
ATTORNEY

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## RIVETING HAMMER

Earl B. Lear, Garfield Heights, Ohio, assignor to The Cleveland Pneumatic Tool Company, Cleveland, Ohio, a corporation of Ohio

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2 Claims. (Cl. 78—48)

This invention relates broadly to riveting machines, but more particularly to an improved front end for portable riveting hammers of the fluid actuated percussive type.

One object of this invention is to produce a riveting hammer capable of driving rivets disposed in angular relation with respect to the normal center axis of the riveting hammer, thereby rendering possible riveting operation in places heretofore inaccessible with the usual riveting hammers.

Another object of this invention is to produce an angle-riveting hammer forming a compact assembly which is strong, durable and efficient.

Other objects and advantages more or less ancillary to the foregoing reside in the specific construction and aggroupment of the elements peculiar to this structure, as will become apparent from a more complete examination of this specification.

In the drawing:

Fig. 1 is a side elevational view, partly in section, of a riveting hammer embodying the invention.

Fig. 2 is a view looking in the direction of the arrows 2—2 in Fig. 1.

Fig. 3 is a cross sectional view taken in a plane indicated by line 3—3 in Fig. 1.

Referring to the drawing, 10 is the cylinder of a riveting hammer and 11 the back head within which is housed the usual valve mechanism (not shown). 12 is a connection screwed in the free end of the head 11, through which motive fluid, controlled by a throttle valve 13 operable by a handle 14, may be admitted into the piston chamber 15. In this chamber is reciprocably mounted a fluid actuated piston 16 capable of delivering a rapid succession of impacts to a plunger 17 slidable within a bushing 18, which plunger has its inner end extending into the front end of the chamber 15, while its other end is terminated by a head 19 resting against the front end of the bushing 18.

The front end of the cylinder 10 is formed by two parallel lugs 20 and 21 extending laterally from one side of the cylinder 10 and between which is located the head 19 of the plunger 17. The lower foremost corners of the lugs 20 and 21 are united by an integral bridge 22 having a bore 23 extending therethrough at substantially right angle from the center axis of the cylinder 10. In this bore is slidably mounted a rivet set 9 including a shank 24 slidable in the bore 23 and formed with a head 25 engageable with the work shown in the drawing as a rivet 26 extending through plates 27. To prevent accidental withdrawal of the rivet set from the bridge 22, the shank 24 near the free end thereof is provided with a spring clip 28 engageable with the bridge 22. Mounted between the lugs 20 and 21, there is a substantially L-shaped anvil block 29 pivotally connected to the lugs by a cross pin 30. The anvil block 29 is provided with two operating faces 31 and 32 disposed at right angle from one another, the former being engaged by the head 19 of the plunger 18, and the latter resting on the free end of the rivet set 24. In thickness the anvil block 29 fits closely between the lugs 20 and 21 to prevent lateral movement of the block relative to the lugs.

In operation, the reciprocations of the piston 16 resulting from the action of the motive fluid alternatively admitted into the extreme end portions of the piston chamber 15, will cause the piston 16 to deliver a rapid succession of impacts on the plunger 17, which impacts are in turn delivered to the anvil block 29 and therefrom to the rivet set 9 through the pivotal movement of the block 29 on the cross pin 30. In order to transmit the impacts from the plunger 17 to the rivet set 9 without loss of efficiency, the anvil block 29 is calculated to engage the head 19 of the plunger 17 while the plunger is at the extreme end of its inward movement relative to the cylinder 10, with the rivet set 9 at the extreme end of its inward movement relative to the bridge 22 while engaged by the operating face 32 of the anvil block 29.

From the foregoing explanation, it will be understood that through the anvil block 29 pivotally mounted within the front end of the cylinder 10, it is possible to transmit the impact of the piston 16 to the work or rivet 26 located in angular relation with respect to the center axis of the cylinder 10. While the drawing shows a construction wherein transmission of impacts takes place at substantially right angles, it is clear that through this novel arrangement of parts it would be possible to transmit impacts of the piston 16 at any desired angle.

Although the foregoing description is necessarily of a detailed character, in order to completely set forth the invention, it is to be understood that the specific terminology is not intended to be restrictive or confining and it is to be further understood that various rearrangements of parts and modifications of structural detail may be resorted to without departing from the scope or spirit of the invention as herein claimed.

I claim:

1. A riveting hammer comprising an elongated cylindrical housing, a power actuated impact delivering piston concentric in said housing, an impact receiving plunger concentric in said housing slidable therein relative to said piston, a pair of laterally spaced parallel walls forming one end of said housing, a rivet set slidable between said walls transversally of said plunger, and an impact transmitting anvil block carried by said housing for pivotal movement between said walls, said anvil block having angularly disposed faces perpendicularly engaged by the adjacent ends of said plunger and rivet set.

2. A riveting hammer comprising a cylinder, a power actuated impact delivering piston in said cylinder, an impact receiving plunger slidable within the front end of said cylinder relative to said piston, a coaxial extension on the front end of said cylinder, a rivet set slidably carried by said extension transversally of the center axis thereof, an anvil block pivotally carried by said extension, and faces on said anvil block engageable perpendicularly by said plunger and rivet set for transmitting impacts therebetween.

EARL B. LEAR.