June 17, 1930. J. C. HANNA ET AL 1,765,012

TURRET RIVETER

Filed Aug. 10, 1925

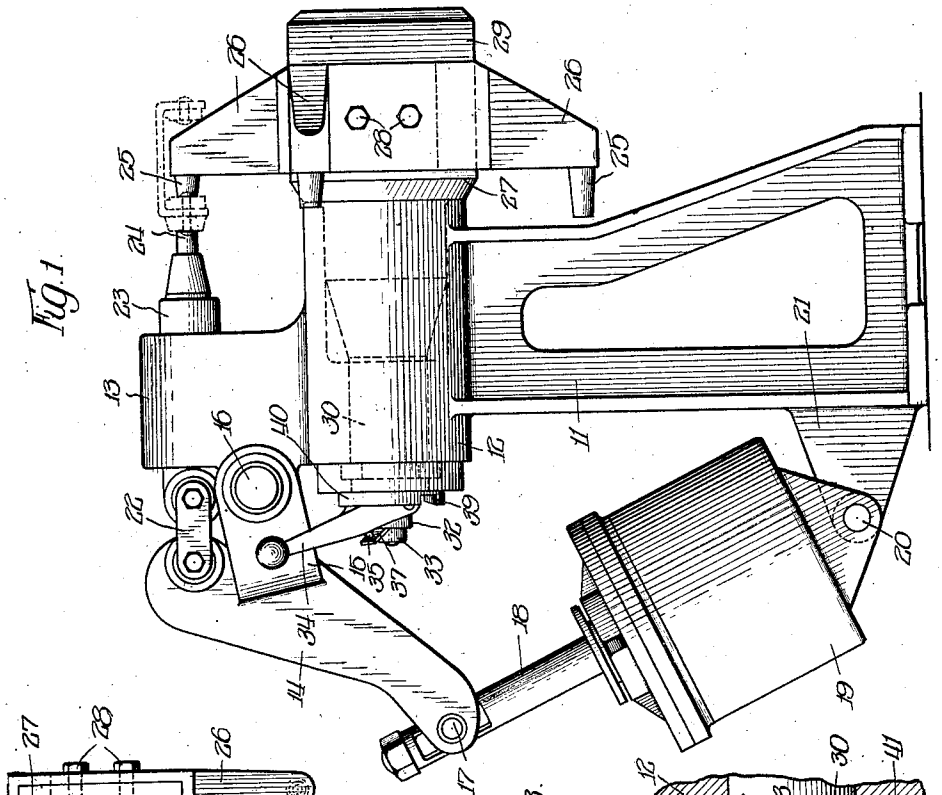


Fig. 1.

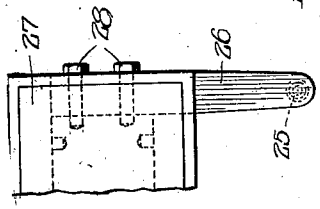


Fig. 4.

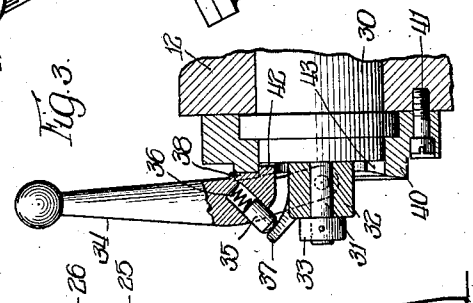


Fig. 3.

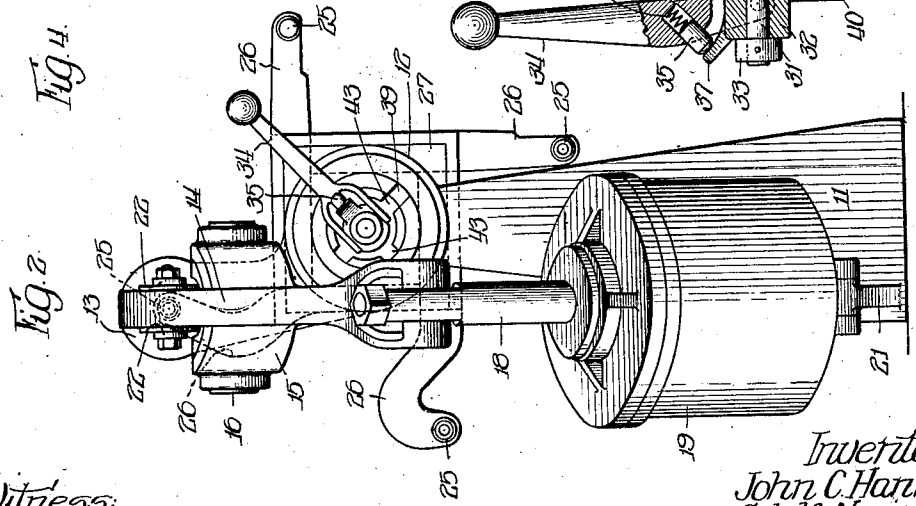


Fig. 2.

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UNITED STATES PATENT OFFICE

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TURRET RIVETER

Application filed August 10, 1925. Serial No. 49,374.

This invention relates to a new and improved riveter construction and more particularly, to a riveter of the turret type.

Riveters of this character are provided with a plurality of fixed dies which may be selectively brought into registration with the movable dies. This type of machine is used largely in connection with work such as the formation of automobile frames, each unit of which requires a number of riveting operations, the rivets varying in length.

It is an object of the present invention to provide a riveter of this character having a plurality of rapidly interchangeable fixed dies.

It is a further object to provide such a riveter in which the fixed dies are simple in design and construction and capable of ready removal and replacement upon the machine when necessary.

It is an additional object to provide a construction in which the fixed dies may be moved from the cylinder side of the machine.

It is also an object to provide a structure which is simple in design and construction and adapted for commercial production and rapid operation.

Other and further objects will appear as the description proceeds.

We have illustrated a preferred embodiment of our invention in the accompanying drawings, in which

Figure 1 is a side elevation of the machine;

Figure 2 is a view of Figure 1 as seen from the left;

Figure 3 is a view on an enlarged scale partly in section showing the fixed die rotating and locking mechanism, and

Figure 4 is a fragmentary view showing the method of securing the fixed die supporting members to the turret head.

Referring first to Figure 1, the riveter comprises the main frame 11 having the turret receiving barrel 12 and the operating plunger support 13. The operating lever 14 is provided with extensions 15 which are journaled upon the shaft 16. This shaft 16 is supported in the frame extension 13. The lower end of the operating lever 14 is connected by pin 17 with the piston rod 18, which is operated by the piston cylinder 19. The cylinder 19 is supported upon the pin 20 carried in the extension 21 of the main frame 11. The method of operating the piston in cylinder 19 forms no part of the present invention and has not been disclosed in detail.

The operating lever 14 is connected by links 22 with the plunger 23 which operates through the frame portion 13. The plunger 23 carries the movable die 24. The fixed dies 25 are carried by the extensions 26, which as best shown in Figure 4, are detachably secured to the turret head 27 by the bolts 28. These members 26 also bear against the large shoulder 29 on the outer end of the turret 27.

The turret has the cylindrical extension 30, as best shown in Figure 3, which extends through the barrel 12 of the main frame. The rod 31 extends outwardly from the end of the turret member and the collar 32 is rotatably fitted upon the rod 31 and retained in place by the nut 33. The control handle 34 is pivotally supported upon the collar 32 and carries the plunger 35 which is pressed outwardly by spring 36 against the lug 37 which extends from the collar 32. The handle 34 is provided with the lug 38 which is adapted to engage in the notch 39 in the flange 40. This flange 40 is secured to the barrel 12 by bolts 41, as best shown in Figure 3. The handle 34 is also provided with the deeper lug 42 which is adapted to engage any one of the notches 43 formed in the end of the turret member.

In the operation of the riveter, the movable plunger 23 and movable die 24 are reciprocated by admitting a compressed fluid selectively upon the opposite sides of the piston carried in cylinder 19. This serves to rock the operating lever about the shaft 16 and perform the riveting operation. The turret head is shown as provided with four members 27 carrying fixed dies 25 of different heights which are thus adapted to cooperate with the movable die to drive rivets of different length.

The turret is locked with any desired fixed die in registration with the movable

die by the engagement of the lugs 38 and 42 with the notch 39 and a registering notch 43. To move the next fixed die into registration with the movable die, the handle 34 is swung outwardly against the lug 37, the spring 36 being compressed and is then swung in the counter-clockwise direction to the position shown in Figure 2. During this movement, the lug 42 will be riding on the end of the turret member and when it reaches the next notch 43 will be dropped down into that notch by the power of the spring 36. The lug 38 will now ride on the flange 40. The handle is next rotated in the clockwise direction until the lug 38 drops into the notch 39. The next fixed die will then be in proper registration with the movable die. This operation is repeated to further rotate the turret and bring other fixed dies into registration as desired.

It will be noted that the fixed dies and die supports are simple in design and construction and may be readily removed without delay and replaced when desired. They are strongly supported upon the turret by their large bearing against the turret flange 29.

We have shown one preferred embodiment of our invention in the accompanying drawings by way of illustration only, and we contemplate such changes and modifications as come within the spirit and scope of the accompanying claims.

We claim:—

1. In a riveter construction, a frame, a die movable through a predetermined throw, means for operating said die, a plurality of fixed dies, said dies being located at varying distances from the movable die, a rotatable turret carrying the fixed dies to bring said dies selectively into registration with the movable die whereby to vary the distance between movable and fixed dies to accommodate material of different thicknesses.

2. In a riveter construction, a frame, a die movable through a predetermined throw, means for operating said die, a plurality of fixed dies of different heights, a rotatable turret, said turret rotating about an axis parallel to the axis of movement of the movable die, a plurality of fixed die carrying members extending tangentially from the turret and removably secured thereto, and means for rotating said turret to bring said dies selectively into registration with the fixed die whereby to vary the distance between the movable and fixed dies to accommodate rivets of different lengths.

3. In a riveter construction, a frame, a die movable through a predetermined throw, means for operating said die, a plurality of fixed dies of different heights, a rotatable turret, a plurality of fixed die carrying members extending tangentially from the turret and removably secured thereto, a shoulder on said turret supporting said members and receiving the operating thrust, and means for rotating said turret to bring said dies selectively into registration with the fixed die whereby to vary the distance between the movable and fixed dies to accommodate rivets of different lengths.

4. In a riveter construction, a frame, a movable die, means for operating said die, a plurality of fixed dies, a rotatable turret carrying said fixed dies, said turret being supported in the frame, and turret rotating means comprising a handle, a pair of lugs on the handle, and separate notches in the turret and frame adapted to cooperate with the lugs on the handle.

5. In a riveter construction, a frame, a movable die, means for operating said die, a plurality of fixed dies, a rotatable turret carrying said fixed dies, said turret being supported in the frame, and turret rotating means comprising a handle secured to the turret and rotatable about the axis of the turret, lugs on the handle, notches in the turret adapted to be engaged by a lug on the handle to rotate the turret, and a notch in the frame adapted to be engaged by a second lug on the handle to lock the turret against rotation.

6. In a riveter construction, a frame, a movable die, means for operating said die, a plurality of fixed dies, a rotatable turret carrying said fixed dies, said turret being supported in the frame, and turret rotating means comprising a handle secured to the turret and rotatable about the axis of the turret, lugs on the handle, notches in the turret adapted to be engaged by a lug on the handle to rotate the turret, a notch in the frame adapted to be engaged by a second lug on the handle to lock the turret against rotation and spring means normally urging said lugs into said notches.

7. In a riveter construction, a frame, a movable die, means for operating said die, a rotatable turret in the frame, flat lateral faces on the turret, a plurality of fixed die carrying members having flat surfaces secured against the flat faces and extending substantially tangentially of the turret, a fixed die on each such die carrying members, the die being of different heights and being selectively brought into registration with the movable die whereby to accommodate material of different thicknesses.

8. In a riveter construction, a frame, a movable die, means for operating said die, a rotatable turret in the frame, flat lateral faces on the turret, a plurality of fixed die carrying members having flat surfaces secured against the flat faces and extending substantially tangentially of the turret, the rear face of a member engaging a lateral face of an adjacent member, a fixed die on

each such die carrying members, the die being of different heights and being selectively brought into registration with the movable die whereby to accommodate material of different thicknesses.

9. In a riveter construction, a frame, a movable die, means for operating said die, a rotatable turret in the frame, flat lateral faces on the turret, a plurality of fixed die carrying members secured against the flat faces and extending substantially tangentially of the turret, a pair of spaced shoulders on the turret adjacent the flat lateral faces engaging opposite edges of said members, a fixed die on each such die carrying members, the die being of different heights and being selectively brought into registration with the movable die whereby to accommodate material of different thicknesses.

Signed at Chicago, Illinois this 27th day of July, 1925.

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