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DIE RETAINER.  
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917,575.

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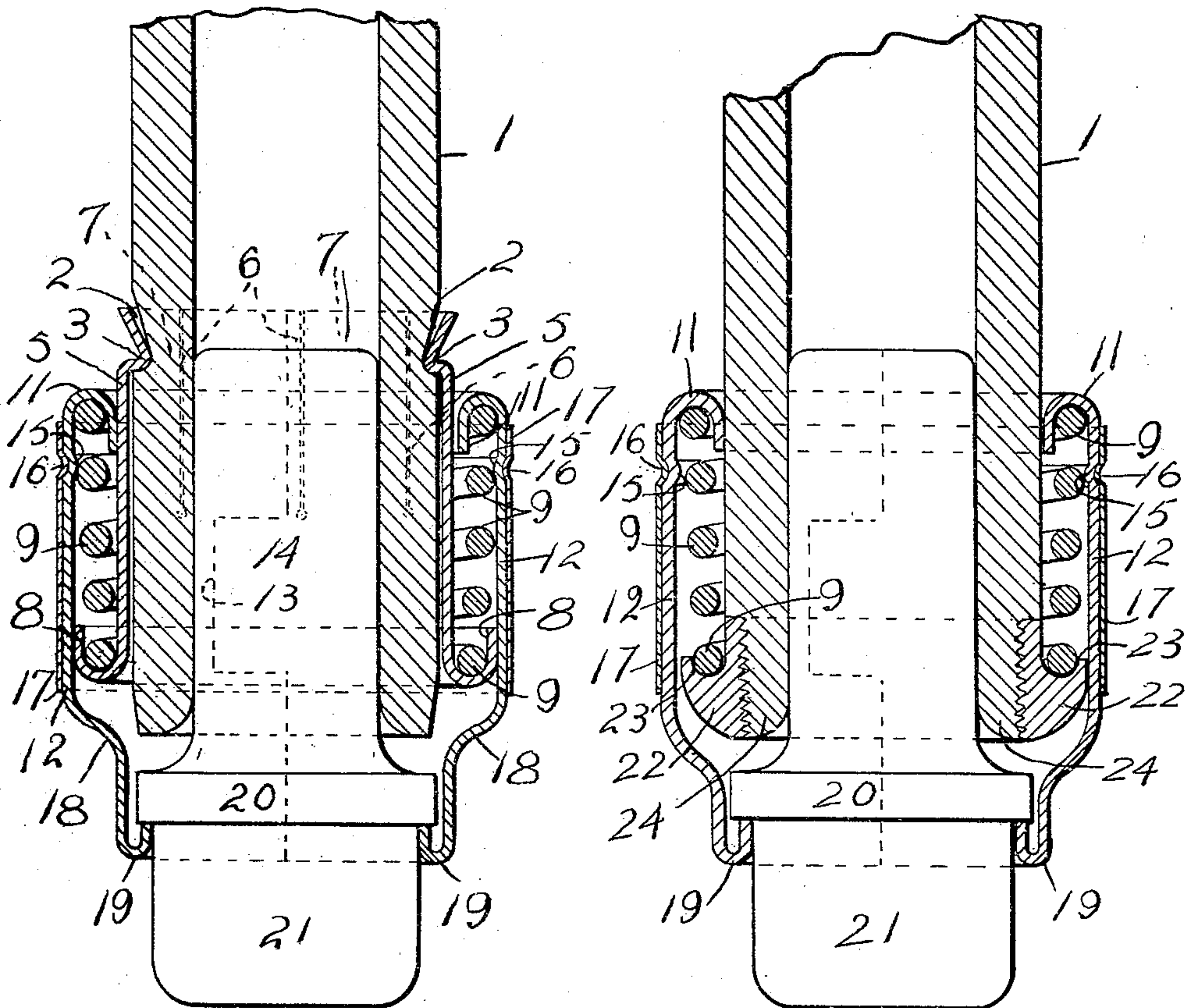


Fig. 1

Fig. 2.

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# UNITED STATES PATENT OFFICE.

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## DIE-RETAINER.

No. 917,575.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, LOUIS G. FISCHER, a citizen of the United States, residing at Harrisburg, in the county of Dauphin, State of Pennsylvania, have invented certain new and useful Improvements in Die-Retainers; 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.

The present invention relates to new and useful improvements in pneumatic riveting machines, and it has particularly reference to a die retainer employed in connection therewith, which retainer is designed for effectively holding the die against displacement from the hammer barrel, and is assembled in connection with a means for returning the die to normal position after each actuation thereof.

In connection with a device of the above type, the invention aims as a primary object to provide a novel, construction, combination and arrangement of parts, the details of which will appear in the course of the following description in which reference is had to the accompanying drawings forming a part of this specification, like characters of reference designating similar parts throughout the several views, wherein:—

Figure 1 is a central longitudinal section illustrating the invention in its preferred embodiment, and Fig. 2 is a similar view illustrating a modified embodiment thereof.

Referring specifically to the accompanying drawings, the numeral 1 designates the barrel of the hammer (the latter not shown). The barrel 1 is formed adjacent its end with a circumscribing groove 2 in which is engaged the crimped edge portion 3 of an annular sleeve 5, the latter being preferably constructed of sheet metal and being formed with longitudinal slots 6, extending from a point in its body portion to the upper edge thereof and affording a plurality of resilient gripping fingers 7. The sleeve 5 at its outer end is formed with a recurved flange 8, affording a seat for an expansive coil spring 9, the inner end of which is engaged in similar flanges 11 provided upon semi-annular members 12 which together form a sleeve surrounding the spring 9. The members 12 are each formed at adjacent ends with a recess 13 and a tongue 14, the tongue of one member engaging in the recess of the other

as is indicated by the dotted lines of Fig. 1. Said members are likewise formed with registering grooves 15 in which is engaged a bead 16, stamped into a clamping sleeve 17, which surrounds the members 12 in their engaged relation. The members 12 extend inwardly adjacent their outer ends as at 18, terminating in recurved flanges 19 which engage a circumscribing flange 20 provided upon the rivet die 21, the latter working in the hammer barrel 1.

In use, each blow of the hammer forces the die 21 outwardly from the barrel and in such movement of the die the members 12 are moved to compress the spring which restores the die to normal position after each actuation thereof.

In Fig. 2 the departure resides in eliminating the sleeve 5 and in substituting therefor a collar 22 having a grooved face 23 and a threaded bore which is engaged upon the reduced outer end 24 of the barrel 1, the spring 9 seating in the grooved face 23. The other elements are retained and the action is precisely the same as above outlined.

A device constructed in accordance with the present invention is simple in its structural details, inexpensive to manufacture and practical and efficient in use.

What is claimed is:

1. The combination, in a tool of the class described, of a barrel, a flanged rivet die working therein, a member secured to and surrounding the barrel and provided with an outwardly curved seat, a sheet metal sleeve surrounding said member and having its opposite ends curved inwardly, its outer end being engaged with the flange on the die, said sleeve consisting of a pair of semi-annular sections formed with registering grooves, and having their adjacent edges interlocked with each other, a sheet metal clamping sleeve surrounding said sections and formed with a circumscribing bead arranged to fit in said grooves, and an expansible coil spring interposed between said member and sleeve and bearing at opposite ends against said seat and the curved upper end of said sleeve.

2. The combination in a tool of the class described, of a barrel, a rivet die working therein and provided with a flange, a sheet metal sleeve surrounding and secured to the barrel and having its outer end curved outwardly, a sheet metal sleeve surrounding the



first named sleeve and having its opposite ends curved inwardly, its outer end being engaged with the flange on the die, an expansible coil spring interposed between said sleeves and bearing at opposite ends against the curved inner end of the second named sleeve and the curved outer end of the first named sleeve, said second named sleeve consisting of a pair of semi-annular members formed with registering grooves, and having their adjacent edges interlocked, and a sheet metal clamping sleeve surrounding said sections and formed with a circumscribing bead arranged to fit in said grooves.

15 3. The combination in a tool of the class described, of a barrel provided with a circumscribing groove, a flanged die slidable therein, a sheet metal sleeve surrounding

the barrel and provided with a crimped inner end engaged in said groove, and with an outwardly curved outer end, a sheet metal sleeve surrounding the first named sleeve and having its opposite ends curved inwardly, the outer end engaging the die flange, and an expansible coil spring interposed between said sleeves and bearing at opposite ends against the curved inner end of the second named sleeve and the curved outer end of the first named sleeve.

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

LOUIS G. FISCHER.

Witnesses:

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