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T. PETERSEN

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DIE STOCK

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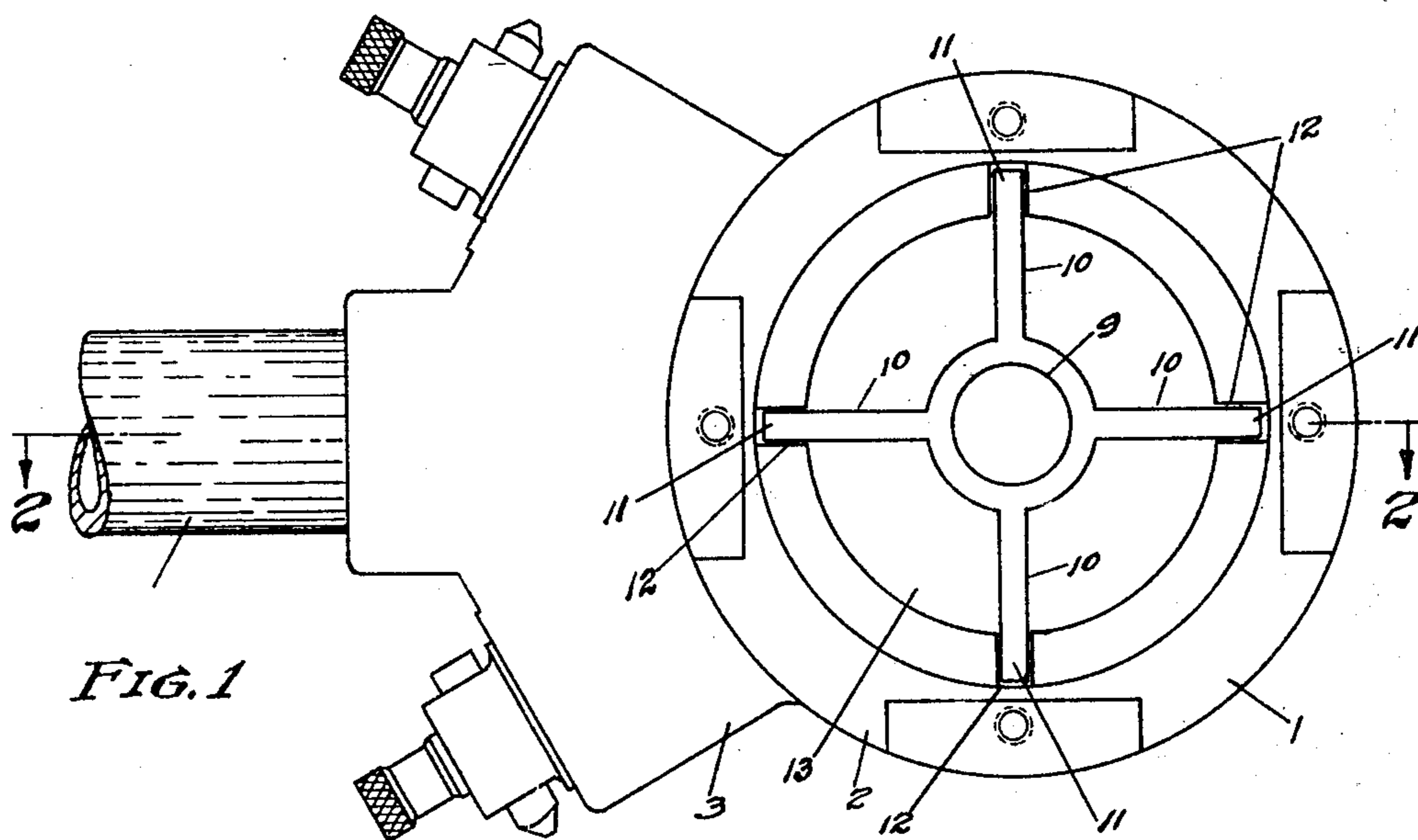


FIG. 1

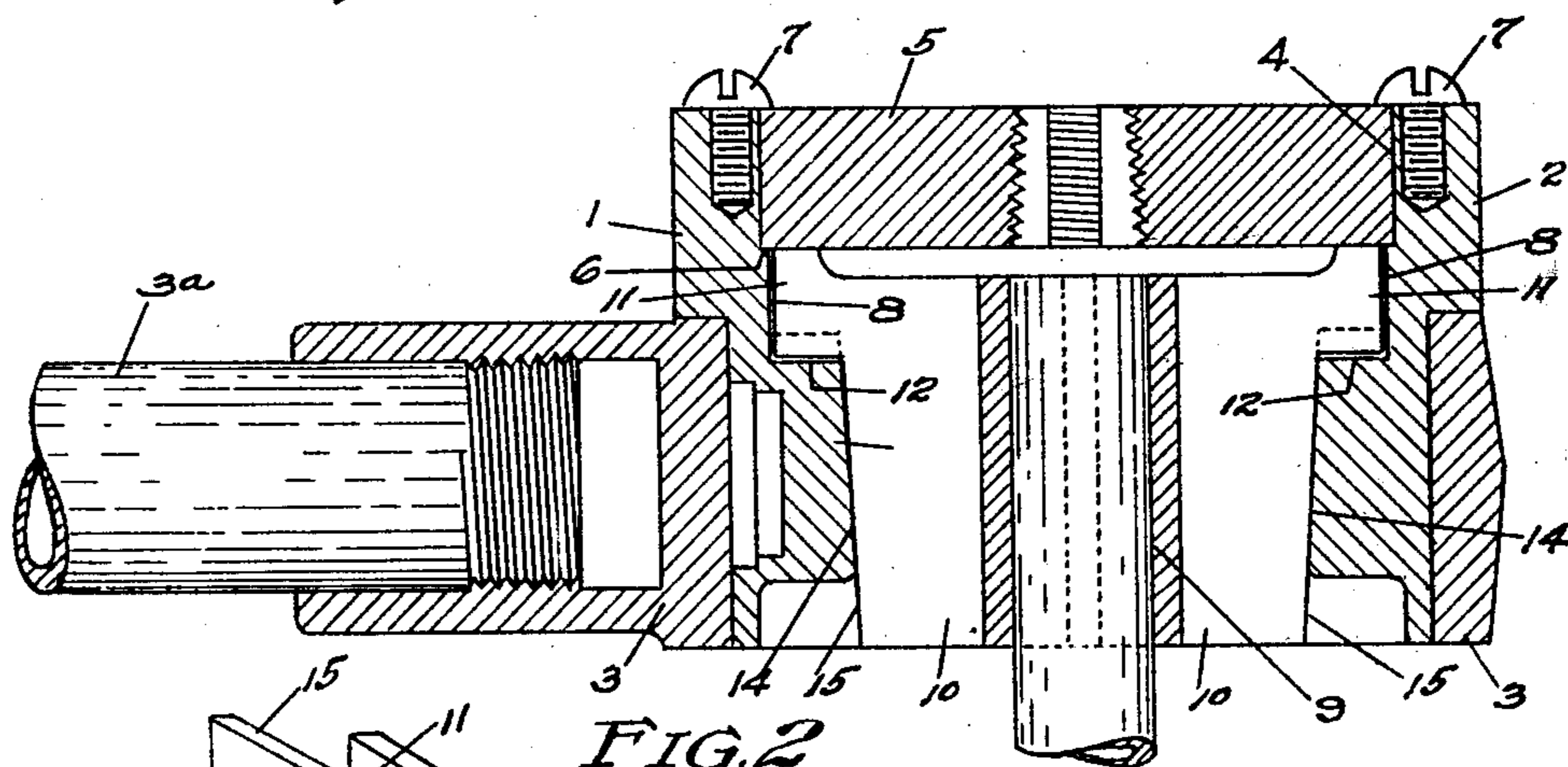


FIG. 2

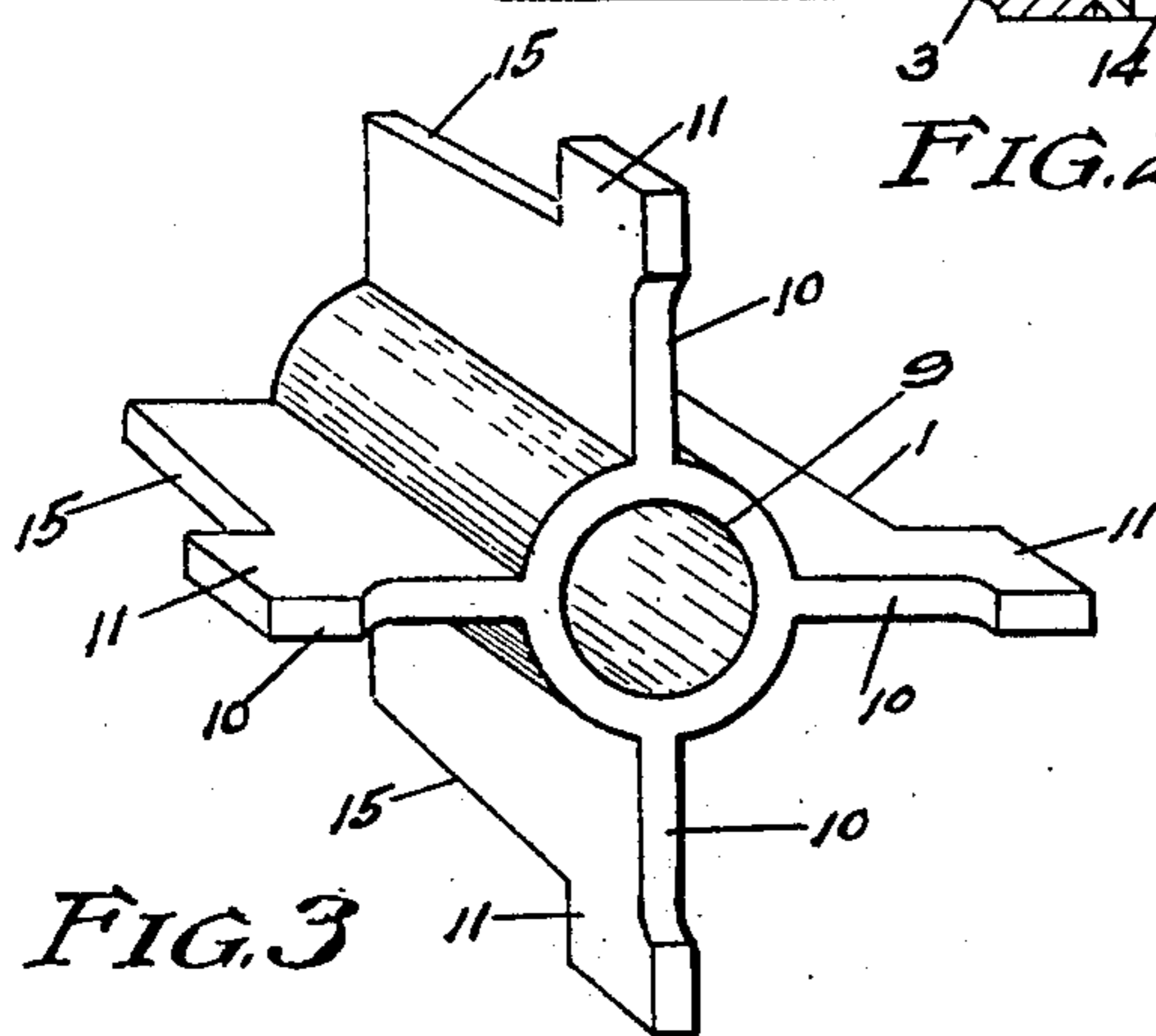


FIG. 3

Thorvald Petersen  
INVENTOR.

BY *H. Z. Lund*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE

THORVALD PETERSEN, OF ERIE, PENNSYLVANIA, ASSIGNOR TO REED MANUFACTURING COMPANY, OF ERIE, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

## DIE STOCK

Application filed December 18, 1930. Serial No. 503,147.

This invention is in the nature of an improvement of the structure of application, Serial Number 389,276, filed Aug. 29th, 1929. In the structure shown in said application the guide has a cylindrical fit in the shank of the head and in order to make this fit close enough to hold the guide in proper relation to the axis it presents difficulty in the ready removal of the guide. The present invention is designed to correct this difficulty. Features and details of the invention will appear from the specification and claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing as follows:—

Fig. 1 shows the die stock with the die removed.

Fig. 2 a section on the line 2—2 in Fig. 1.

Fig. 3 a perspective view of the guide.

1 marks the body, and 2 the shank of the body on which is arranged a ratchet ring 3 from which a handle 3a extends. Ratchet mechanisms 3b are arranged on the ring and operate in the usual manner on the shank.

A die stock 4 is formed in the body and receives a solid die 5. The die rests on a seat 6 and is secured in place by screws 7. A guide socket 8 is arranged immediately under the die stock 4. A guide is formed with a guide tube 9 through which the pipe is carried to the die throat. Radial blades 10 extend from the guide tube and these are provided with outwardly extending shoulders 11 which rest in small notches 12 in the bottom wall of the socket 8. The guide plates fit in an opening 13 extending through the shank.

The opening in the shank has tapered walls 14 and the edges 15 of the guide blades 10 are beveled to correspond. In this way the guide may be dropped into its socket making a very loose fit until practically seated. At this point there is a perfect fit holding the guide accurately concentric with the axis.

With this structure, as in the application referred to, when the die 5 is changed the guide is picked out of the socket and a guide of the size desired dropped into place. The shoulders 11 drop into the notches 12 and lock the guide against turning with the pipe.

When the die is secured in place it also secures the guide.

The opening through the plates of the guide give ample room for chip disposal. The guide extending from the die socket operates on the pipe practically up to the throat of the die.

The taper of the walls 14 and the edges of the blades 10 is designed to give merely a taper clearance. In practice I prefer a taper of two or three degrees, certainly not to exceed ten degrees. Thus any clearance that may be necessary for production between the bottom of the die 5 and the engaging end of the guide will create very little looseness between the guide and the wall of the socket receiving it. In maintaining axial alinement of the thread formed by the die it is necessary to maintain as close a fit between the opening of the guide and the pipe as is practical within pipe tolerances and also necessary to maintain a close fit between the guide and its walls and any looseness between the guide and its walls is added to the amount of misalignment which is made possible by these clearances. Thus the very slight taper is of very definite importance in that while the taper is sufficient to permit of the ready entrance and removal of the guide even with a very close fit at the same time it does not establish a looseness by reason of variations in clearance between the bottom of the die and the end of the guide.

What I claim as new is:—

1. In a die stock, the combination of a body having a die-receiving socket and a guide-receiving socket opening through the die-receiving socket, the guide-receiving socket being tapered not to exceed 10° to the axis; a guide in the guide-receiving socket insertable through the die-receiving socket, said guide being tapered to correspond with the taper of the guide-receiving socket; a die in the die-receiving socket securing the guide in the guide-receiving socket; and means securing the die in the die-receiving socket.

2. In a die stock, the combination of a body having a die-receiving socket and a guide-receiving socket opening through the die-receiving socket, the walls of the guide-

receiving socket being tapered not to exceed  
10° to the axis; a guide in the guide-receiving  
socket insertable through the die-receiving  
socket, said guide having a guide opening  
5 and a chip opening therethrough, the guide  
being tapered to correspond with the taper  
of the socket; a die in the die-receiving socket  
securing the guide in the guide-receiving  
socket; and means securing the die in the die-  
10 receiving socket.

3. In a die stock, the combination of a  
body having a die-receiving socket and a  
guide-receiving socket opening through the  
die-receiving socket, the walls of the guide-  
15 receiving socket being tapered not to exceed  
10° to the axis; a guide in the guide-receiv-  
ing socket insertable through the die-receiv-  
ing socket, the walls of which extend to a  
point adjacent to a die in the die-receiving  
20 socket, said guide having a guide opening  
and a chip opening therethrough, the guide  
being tapered to correspond with the taper  
of the socket; a die in the die-receiving sock-  
et securing the guide in the guide-receiving  
25 socket; and means securing the die in the  
die-receiving socket.

4. In a die stock, the combination of a  
body having a guide receiving opening there-  
in and means thereon for securing a die, the  
30 guide receiving opening being tapered not  
to exceed 10° to the axis; and a guide in the  
guide receiving opening, said guide being  
tapered to correspond to the taper of the  
guide receiving opening.

35 In testimony whereof I have hereunto set  
my hand.

THORVALD PETERSEN.

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