

July 6, 1948.

E. M. STRICKLAND

2,444,541

UNIVERSAL SUPPORT FOR ARTICLE HOLDERS

Filed June 20, 1945

2 Sheets-Sheet 1

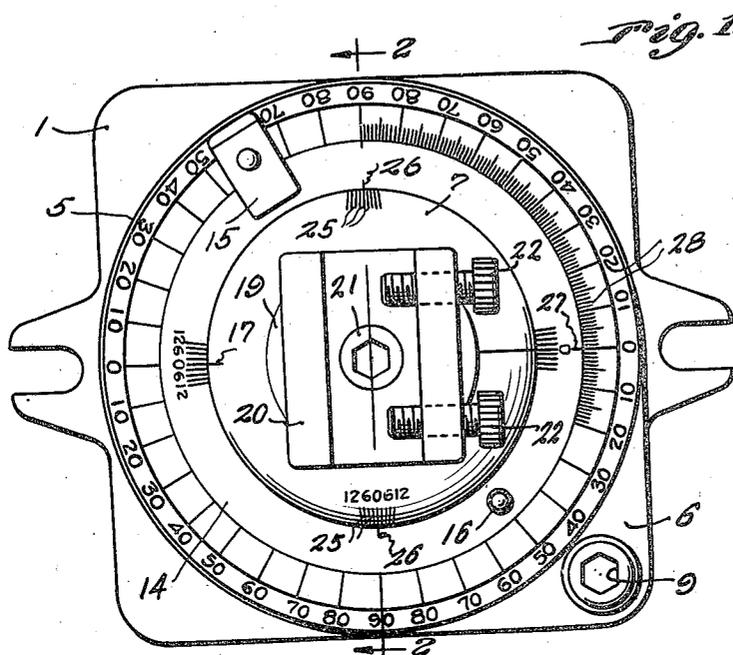


Fig. 1.

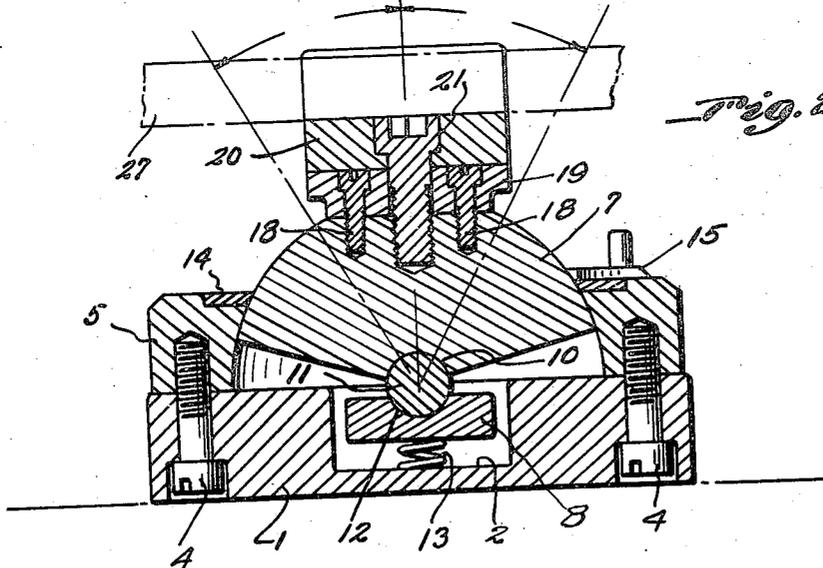


Fig. 2.

Inventor

*Elwin M. Strickland*

By

*Clarence A. O'Brien  
and Harvey B. Jacobson*  
Attorneys

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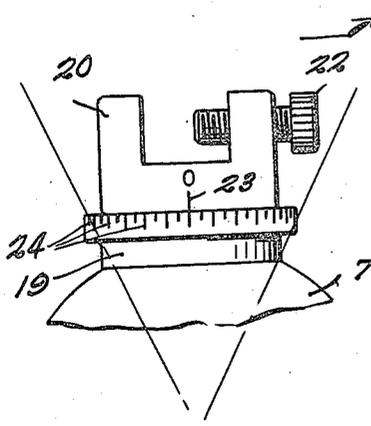
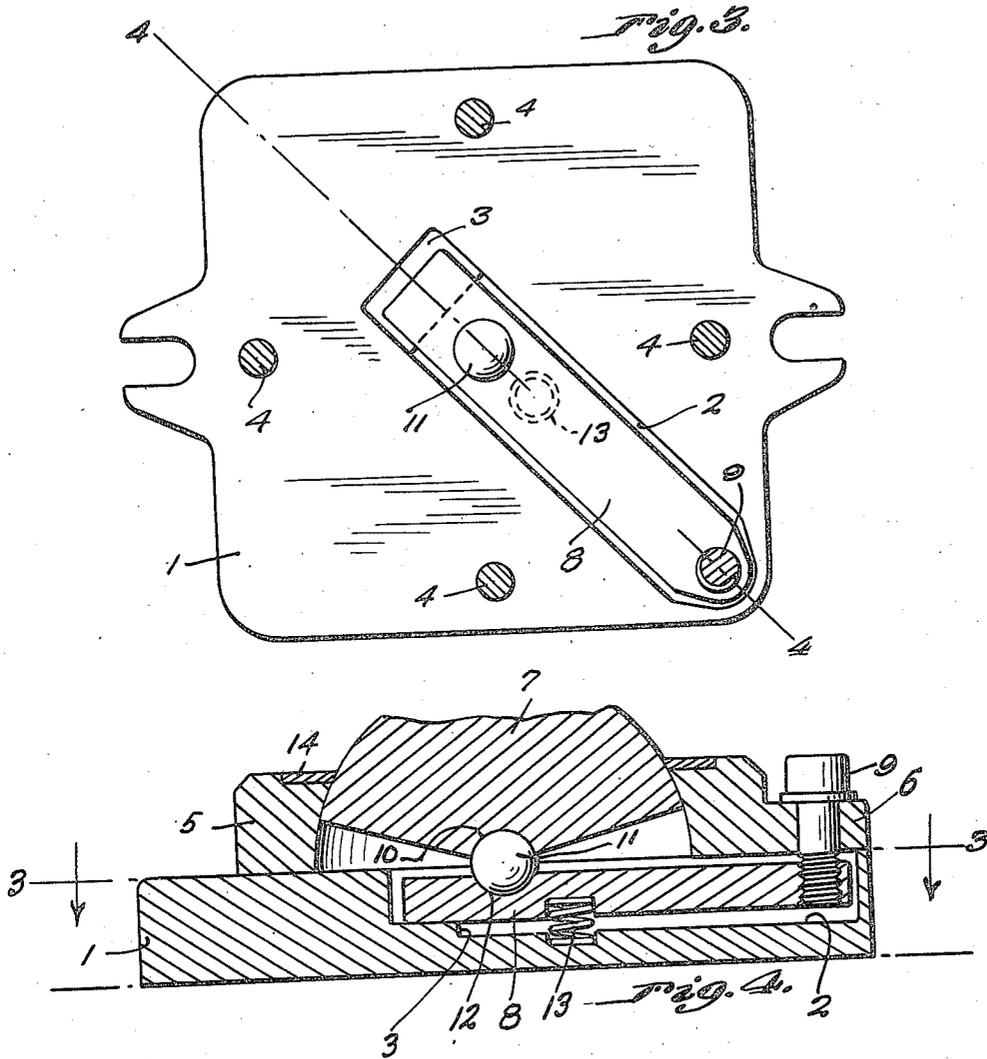
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2 Sheets-Sheet 2



Inventor  
*Edwin M. Strickland*

By *Clarence A. O'Brien*  
*and Harvey B. Jacobson*  
Attorneys

# UNITED STATES PATENT OFFICE

2,444,541

## UNIVERSAL SUPPORT FOR ARTICLE HOLDERS

Elwin M. Strickland, Detroit, Mich.

Application June 20, 1945, Serial No. 600,543

1 Claim. (Cl. 248--181)

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The present invention relates to new and useful improvements in vises and has for its primary object to provide, in a manner as hereinafter set forth, a device of this character which is adapted to be expeditiously and accurately adjusted to any desired position.

Another very important object of the invention is to provide a universally adjustable vise of the aforementioned character which comprises novel means for firmly securing the device in adjusted position.

Other objects of the invention are to provide a vise of the character described which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact, and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a top plan view of a vise constructed in accordance with the present invention.

Figure 2 is a vertical sectional view taken substantially on the line 2--2 of Figure 1.

Figure 3 is a view in horizontal section, taken substantially on the line 3--3 of Figure 4.

Figure 4 is a vertical sectional view through the vise with the upper portion broken away, taken substantially on the line 4--4 of Figure 3.

Figure 5 is an elevational view of the upper portion of the vise.

Referring now to the drawing in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a metallic base 1 of any desired dimensions, which base is to be mounted and secured on a table or other suitable support. The base 1, which is substantially square in plan, has formed diagonally therein a channel 2, the bottom of which includes a raised end portion 3 (Figs. 3 and 4).

Removably secured by screws 4 on the base 1 is a socket member 5 in the form of a ring comprising, on its periphery, a substantially triangular, integral ear 6. A ball segment 7 is mounted for rotary and rocking adjustment in any direction in the socket 5. As best seen in Figure 2 of the drawing, the securing screws 4 are countersunk in the base 1.

The channel 2 accommodates a lever 8, one end portion of which rests on the raised surface 3. The other end portion of the lever 8 has thread-

ed thereinto a locking screw 9 which is journaled in the ear 6, said ear being apertured to accommodate said screw. The bottom of the ball segment 7 is substantially conical and has formed therein a socket 10 which accommodates the upper portion of a ball bearing 11. The ball bearing 11 rests in a socket 12 which is provided therefor in the end portion of the lever 8 which is remote from the locking screw 9. A coil spring 13 in the channel 2 yieldingly urges the lever 8 and the bearing ball 11 upwardly at all times.

Recessed in the socket 5 is a rotatably adjusted graduated ring 14. A suitable clamp 15 (see Figure 1) on the socket 5 releasably secures the graduated ring 14 in adjusted position. An adjusting handle 16 is provided on the ring 14. The graduations on the ring 14 are for coaction with center marks 17 on the ball segment 7.

Rigidly secured by screws 18 on the ball segment 7 is a disk 19, the periphery of which is graduated. Swivelled for rotary adjustment on the disk 19 is a substantially channel-shaped holder 20 for tools and other articles or objects. The disk 19 is provided with a centrally located opening which accommodates a screw 21 which secures the holder 20 in adjusted position. The screw 21, which is countersunk in the holder 20, passes through the disk 19 and is threaded into the ball segment 7. Set screws 22 are provided for securing the tool in the holder 20. The holder 20 is provided on either or both ends with a center mark 23 (Fig. 5) for coaction with the graduations 24 on the periphery of the disk 19.

It is thought that the operation of the device will be readily apparent from a consideration of the foregoing. Briefly, to rotatably or rockably adjust the ball segment 7, the screw 9 is turned in a direction to thread the lever 8 downwardly or away from said ball segment. The ball segment 7 may then be readily rotated or rocked to any desired position in the socket 5. Rocking adjustment of the ball segment 7 is facilitated by the provision thereon of graduations 25 which coact with center marks 26 on the adjustable ring 14. After the desired adjustment has been made, the screw 9 is turned in the opposite direction for raising the lever 8, thereby forcing the ball segment 7 upwardly in the socket member 5 for frictionally securing said ball segment. By loosening the screw 21, the holder 20 may be rotatably adjusted on the disk 19. The construction and arrangement, it will be observed, is such as to permit the tool, as at 27, mounted in the holder 20 to be readily adjusted to any desired position. A center mark 27 on the ro-

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tatably adjustable ring 14 coacts with graduations 28 on the socket member 5.

It is believed that the many advantages of a universally adjustable ball joint vise constructed in accordance with the present invention will be readily understood, and although a preferred embodiment of the device is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

A universal support comprising a substantially flat base having a channel in its upper face, the bottom of said channel including a raised end portion forming a fulcrum, a lever operable in the channel and having one end resting on the fulcrum, a socket in the lever adjacent the fulcrum, a bearing ball mounted in the socket, a ball segment rotatably and rockably adjustable on the bearing ball, a socket on the base partially enclosing said ball segment, a coil spring beneath the lever for yieldingly urging the ball segment into frictional engagement with the socket, a screw rotatably mounted in the socket and thread-

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edly connected to the end of the lever remote from the fulcrum for raising said lever positively to clamp the ball segment in adjusted position in the socket, and said ball segment being adapted to support an article holder.

ELWIN M. STRICKLAND.

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