E. A. ROOP.

ADJUSTABLE SPACING COLLAR.

APPLICATION FILED AUG. 23, 1920.

1,366,496.

Patented Jan. 25, 1921.

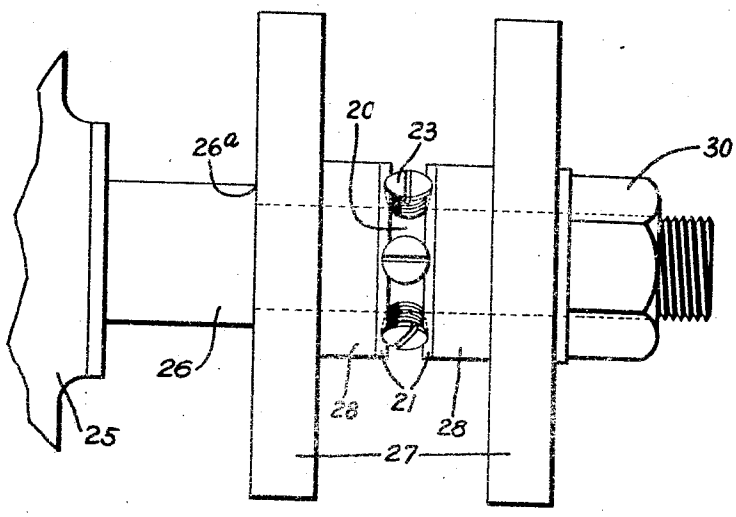


Fig 1.

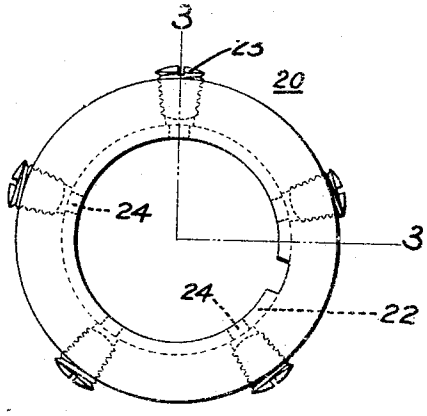


Fig. 2.

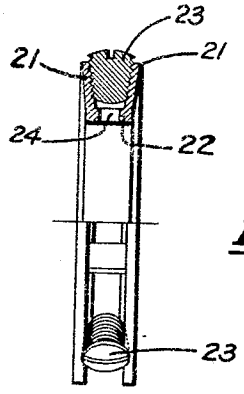


Fig. 3.

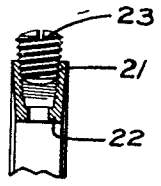


Fig. 4.

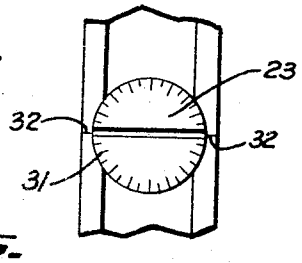


Fig 5.

Witnesses
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UNITED STATES PATENT OFFICE.

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ADJUSTABLE SPACING-COLLAR.

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To all whom it may concern:

Be it known that I, ELSTON A. ROOP, a citizen of the United States of America, residing at Dayton, county of Montgomery, State of Ohio, have invented certain new and useful Improvements in Adjustable Spacing-Collars, of which the following is a full, clear, and exact description.

This invention relates to devices for adjusting the relative distance between two objects and more particularly for adjusting the relative distance between two machine elements such as cutters, facers and the like.

In the general machine shop practice close adjustments have heretofore been arrived at by adding paper shims to the regular spacing collars. After this type of adjustment had been used in the machine for a short period, the paper shims would wear and thereby destroy the accuracy of the adjustment.

Other types of spacing collars have been used which include two collars of the male and female type, which when rotated relative to each other would tend to increase or decrease the combined width of the two. The main objection to the use of this type of adjusting collar is that the rotation of the cutters would sometimes tend to rotate the adjusting collars themselves and thereby destroy the original adjustment thereof.

It is among the objects of the present invention to provide a device of small structure and of substantially great durability, which may in no way be affected by the operation of the cutters to destroy the adjustment of the same and which may readily be operated to change the adjustment between the cutters if desired.

Other objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred embodiment of the present invention is clearly shown.

In the drawings:

Figure 1 is a view showing a shaft of a milling machine (not shown), this shaft having mounted thereon two cutting tools with the adjusting collar interposed therebetween;

Fig. 2 is an elevational view of the adjusting collar;

Fig. 3 is a side view partly in section, the section being taken along the line 3—3 of Fig. 2 and shows the adjusting collar in its expanded position;

Fig. 4 is a fragmentary sectional view similar to Fig. 3 showing the tapered expanding screw partially retracted from the collar; and

Fig. 5 is an enlarged view of the expanding screw and a portion of the collar showing graduations on the screw.

Referring to the drawings, 20 designates an adjusting collar comprising flanges 21 and a web portion 22. The flanges 21 are screw threaded at various points, five points being shown in the Fig. 2, each of these screw threaded portions being adapted to receive a tapered screw 23 capable of forcing the flanges apart when screwed therebetween. In order to increase the resiliency of these flanges, the web portion 22 is provided with a series or holes or openings 24 which are shown concentric with the screw threaded portions of the flanges 21.

Referring to the Fig. 1, a machine bearing 25, supports a shaft 26 on which are mounted two cutting elements 27. Interposed between these two cutting elements are two collars 28 which have the adjusting collar 20 substantially therebetween. A nut 30 tends to hold the entire assembly of cutting elements 27, collars 28 and adjusting collar 20 in position against the shoulder 26^a of shaft 26.

When the operator desires to locate two cutting tools a certain distance apart, the tapered screws 23 are operated, which when screwed into the collar tend to force the flanges apart and increase the distance between the cutting portions, and when screwed out of the adjusting collar will permit the flanges thereof to spring back again and thereby tend to reduce the distance between the cutting elements 27.

In order that equal spreading of the flanges may be obtained at all the points of adjustment, the screws 23 are provided with graduations 31 adapted to aline with indices 32 on the flanges whereby the operator may turn all screws an equal distance as indicated by the graduations.

While the form of mechanism herein shown and described constitutes preferred forms of embodiments of the invention, it is

to be understood that other forms might be adopted, all coming within the scope of the claims which follow:

What I claim is—

1. A spacing collar comprising a ring provided with peripheral flanges; and means interposed between said flanges for increasing the space therebetween.

2. A spacing collar comprising a ring provided with peripheral flanges; and wedge shaped means interposed between said flanges for increasing the space therebetween.

3. A spacing collar comprising a ring provided with peripheral flanges; and a plurality of screws interposed between said flanges, and operable to increase the space between the flanges.

4. A spacing collar comprising a ring provided with peripheral flanges; and a plurality of tapered screws interposed between said flanges, and operable to increase the space between the flanges.

5. A spacing collar comprising flanges and spaced web portions; and a plurality of tapered screws interposed between said flanges and equidistant from the web portions to adjust the relative distance between the flanges.

6. A spacing collar comprising flanges and spaced web portions; and a plurality of tapered screws interposed between the flanges and the web portions for adjusting the relative distance between the flanges.

7. A spacing collar comprising flanges and spaced web portions; a plurality of tapered screws interposed between said flanges for increasing the spaces therebetween; an index mark on the flanges and in alinement with the center of each screw; and graduations on said screws for indicating the distance each screw is turned, to obtain equal spacing between the flanges.

In testimony whereof I hereto affix my signature.

ELSTON A. ROOP.

Witnesses:
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