April 8, 1924. 1,489,577

B. M. W. HANSON

GAUGE

Filed April 19, 1921

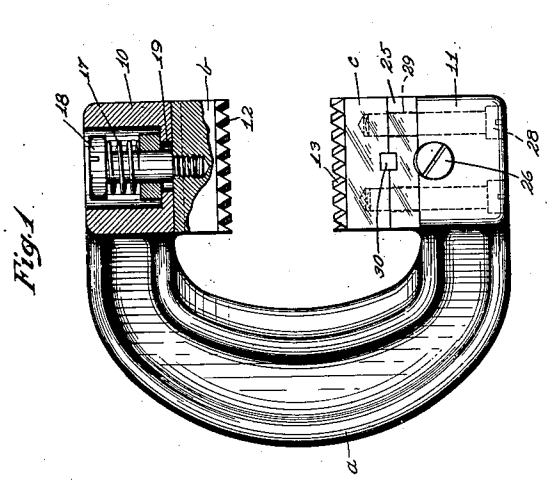


Fig. 1

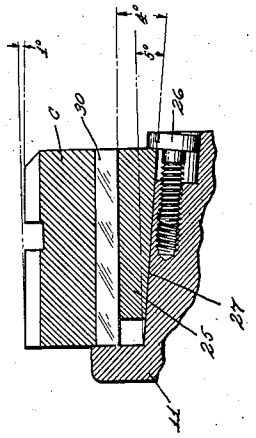


Fig. 4.

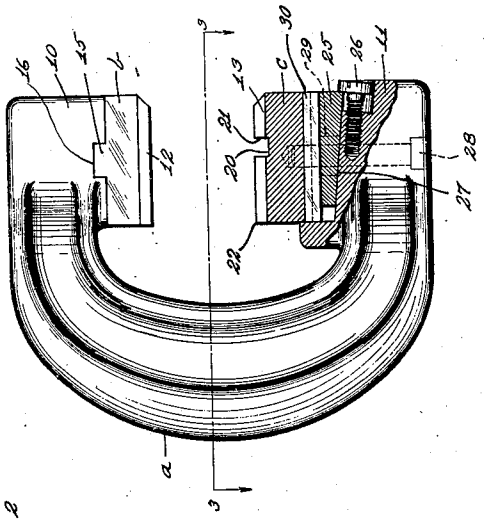


Fig. 2.

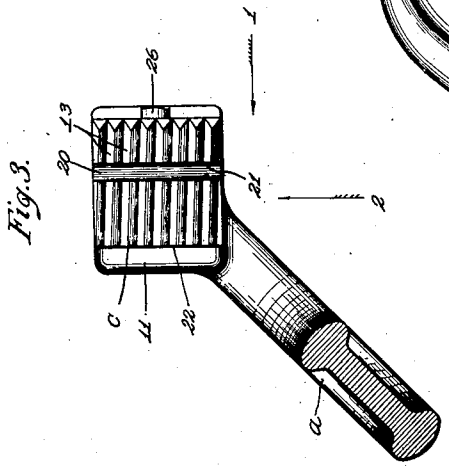


Fig. 3.

Inventor

Bengt M. W. Hanson

By

Attorney

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UNITED STATES PATENT OFFICE.

BENGT M. W. HANSON, OF HARTFORD, CONNECTICUT.

GAUGE.

Application filed April 19, 1921. Serial No. 462,746.

To all whom it may concern:

Be it known that I, BENGT M. W. HANSON, a citizen of the United States, and a resident of Hartford, in the county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Gauges, of which the following is a specification.

This invention relates to a gauge of the type illustrated and described in my co-pending applications Serial Numbers 461,956 and 461,957, filed April 16, 1921. The present invention is directed more particularly to the means for adjusting the jaw faces relative to one another.

In the accompanying drawing:—

Fig. 1 is a side elevation of a gauge with parts broken away, looking in the direction of the arrow 1 of Fig. 3.

Fig. 2 is a side elevation thereof with parts broken away and looking in the direction of the arrow 2 of Fig. 3.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2 and looking in the direction of the arrow 3, and

Fig. 4 is an enlarged detail view of what is shown in section in Fig. 2.

Referring to the drawing in detail, *a* is a C-frame or clamp having a pair of heads 10, 11 on which are mounted jaws *b* and *c*, the opposed faces of which are provided, respectively, with serrations 12, 13, each similar in transverse section with the groove of the thread to be gauged, except that the serrations may not be as deep as the groove. The serrations of one jaw face are laterally inclined to those of the other face in accordance with the angle between diametrically opposite portions of the thread to be gauged.

The jaw member *b* is mounted for transverse movement on the head 10, it being guided in this movement by a tongue 15 slidably mounted in a groove 16. This jaw member is resiliently held to its seat by a spring 17 coiled about a screw 18 threaded into the member *b* and extending through a slot 19 in the head. The jaw face of the member *c* is transversely grooved as at 20 and the forward edge 21 of this groove may be employed to indicate the point past which a threaded member must go to be below the maximum limit of accuracy. The rear edges 22 of the serrations may be employed to indicate the point past which the threaded member should not go to be above the minimum limit of accuracy.

Interposed between the head 11 and the jaw member *c* is a wedge 25 adapted to be adjusted in the general direction of the length of the serrations, that is, longitudinally of the jaw faces, by a screw 26. In practice, a plurality of interchangeable wedges, varying in tapers corresponding to different specified limits of tolerances, are provided. The surface 27 of the head 11 on which the wedge rides, is inclined in the general direction of the length of the jaws to the face of the jaw *b*, and a wedge is selected for interpositioning between this surface and the jaw member *c* of such taper that the extent of inclination of the jaw face on the member *c* between the "go" point 21 and the "not go" point 22 relative to the jaw face of the member *b* is equal to the working allowance. For the purposes of illustration, the surface 27 is shown in the drawings as being inclined at an angle of 5° to the face of the member *b* and the taper of the wedge is 4°, and therefore the jaw face of the member *c* is inclined at an angle of 1° to the jaw face of the member *b*, as shown in Fig. 4. It may be assumed that a 4° wedge, as shown in the drawings, is employed when the specified working allowance is .001″. In the event the working allowance is .002″, a 3° wedge will be interposed between the member *c* and the surface 27 so that the jaw faces will be relatively inclined at an angle of 2°. The jaw member *c* is secured in place by bolts 28 which extend through elongated slots 29 in the wedge so as to permit of adjustment of the latter. For the purpose of preventing transverse movement of the member *c*, it is keyed to the wedge as at 30.

In setting up the gauge, a wedge 25 will be selected of such taper that when interposed between the head 11 and the member *c*, the difference between the distances between the respective edges 21, 22 and the jaw *b* will be equal to the specified limits of tolerance. The wedge 25 is then longitudinally adjusted, after loosening the bolts 28, until the jaw faces are so spaced apart that a threaded test piece having a diameter exactly equal to the specified maximum limit of tolerance, say 1″, will just pass the "go" point 21, and a second test piece having a diameter of exactly the specified maximum limit of accuracy, say 1″ minus .001″, will fail to pass the "not go" point 22. The bolts 28 are now tightened up, and the threaded member to be gauged is now inserted between the jaw

faces and as it is moved longitudinally of the serrations, the lead of the thread will cause the jaw member *b* to move transversely. If the threaded member passes the "go" point 21 but fits closely between the jaw faces before it reaches the "not go" point 22, it is necessarily within the predetermined limits of accuracy. It will be seen that in the event the jaw faces should become worn down, this wear may very easily be taken up by adjusting the wedge by means of the screw 26.

I claim as my invention:—

1. In a gauge, a frame, a pair of jaw members carried thereby and having their opposed faces provided with serrations, a plurality of wedges varying in taper from one another and adapted to be interchangeably positioned between said frame and one of said members, and means for adjusting a wedge positioned between said frame and jaw member.

2. In a gauge, a frame, a pair of opposed jaws carried thereby and each having a plurality of serrations, a wedge interposed between said frame and one of said jaws, and tapering in the general direction of the length of said serrations, and means for adjusting said wedge in the direction of its taper.

3. In a gauge, a frame provided with a jaw having a plurality of serrations and a surface opposed and inclined to said jaw, a complementary jaw provided with serrations, said surface and complementary jaw being arranged to receive between them any one of a plurality of wedges varying in taper from one another, one of said wedges between said surface and complementary jaw, and a screw for adjusting the wedge interposed between said surface and complementary jaw.

BENGT M. W. HANSON.