Sept. 30, 1924. 1,510,189

A. MELDRUM ET AL

LIMIT SNAP GAUGE

Filed April 1, 1921

FIG. 1.

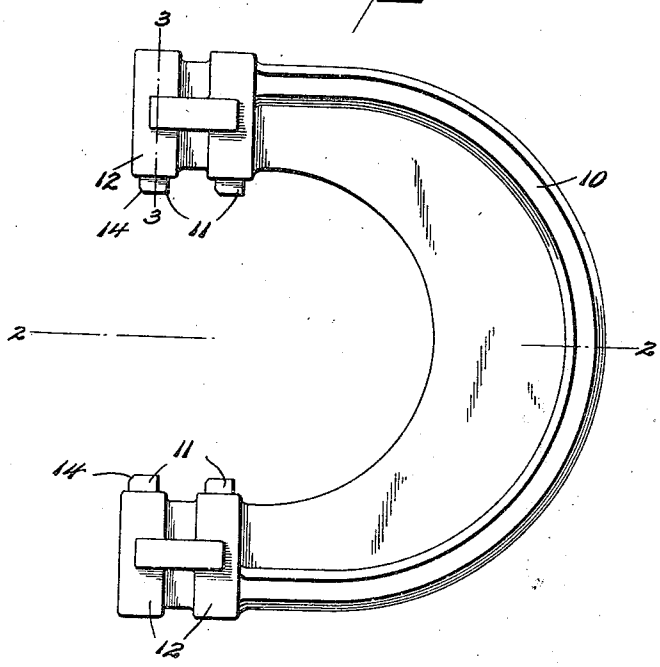


FIG. 2.

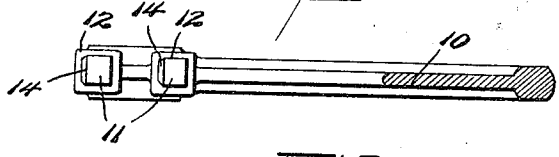
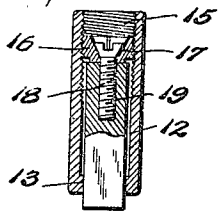


FIG. 3.



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UNITED STATES PATENT OFFICE.

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LIMIT SNAP GAUGE.

Application filed April 1, 1921. Serial No. 457,729.

To all whom it may concern:

Be it known that we, ALEXANDER MELDRUM and CARL GABRIELSON, of the city of Syracuse, in the county of Onondaga, State of New York, have invented certain new and useful Improvements in Limit Snap Gauges, of which the following is a specification.

This invention relates to limit snap gauges for measuring the outside dimensions of work, and has particular reference to the form and structural arrangement and mounting of the measuring pins in the frame. It embodies a simple structure by which the longitudinally adjustable measuring pins are held against rotation in the frame by the transverse shape and lateral engagement with the frame and which presents a straight edge to the work, and which, particularly in the preferred form, has a working end surface of such form that the wear in use will be uniform in character and of a minimum amount. The novel features will be more fully understood from the following description and claim taken in connection with the drawing.

In the drawing,

Figure 1 is a side view of a gauge embodying the invention.

Figure 2 is a plan view looking down from the section line 2—2 of Figure 1, and

Figure 3 is a cross section on the line 3—3 of Figure 1.

For purposes of illustration we have shown in Fig. 1 a frame 10 of ordinary and well known horse shoe shape or form, carrying the measuring pins 11 mounted in sockets or openings through the arms of the frame near their ends. Two parallel pins are shown in each arm and as is well known, the pins on one arm are aligned with pins on the other arm, with the working surfaces parallel facing each other. These measuring pins have heretofore been made circular in section fitting a circular socket in the arm of the frame, and to prevent rotation of the pin while permitting longitudinal adjustment it has been necessary to use some separate holding means such as a pin and slot connection. The projecting end of a round measuring pin furthermore normally presents a curved edge to the work, which not only localizes the wear but may produce undue strains causing injury and wear unless great care is used, and it has been found that a straight edge for the pin facing the work is preferable. The present invention avoids the necessity for separate special means for holding the pins against rotation by forming a portion of the pin, preferably at the projecting end, non-circular in cross section fitting a similar non-circular portion of the socket so that by the shape and fit the pin may be adjusted longitudinally but cannot turn in the socket. The non-circular projecting portion preferably has one flat longitudinal surface facing the work so that whether beveled or not it will present a straight edge for contact with the work. In the preferred form shown, the non-circular portion of the pin 11 and its socket are made square in section, and the projecting portion is also rectangular in section with one side facing the work. It has been found that a symmetrical rectangular contact surface wears more evenly and to a less extent than other forms in use, and that thus regrinding is not required so often or to the same extent.

Referring specifically to Figures 2 and 3, the socket or hole 12 in the frame 10 has at its outlet end a portion 13 which is square in cross section and which closely fits the projecting square end of pin 11, and one of its side walls presents a flat surface at substantially right angles to the plane of the frame so that the matching side wall of pin 11 projecting beyond it will face the work and present a straight line for contact at its end. The longitudinal edges of the square portion may be slightly beveled or ground to avoid sharp edges. It is of advantage to bevel the edge of the pin 11 facing the work as shown at 14 but that still leaves a straight edge for contact. The specific means shown for holding and longitudinally adjusting the pins in the sockets constitute no part of the present invention, as any suitable means for the purpose may be used. In the form shown, the inlet end of the socket or hole 12 is internally screw threaded at 15 to receive the screw threaded sleeve 16 having a central funnel shaped opening 17 adapted to permit the shank of screw 18 to pass through and to fit its tapering head. This screw threaded portion is of sufficiently large diameter to permit the

pin 11 to freely pass down through it and it extends to a point materially below the end of the pin when new so as to permit adjustment for wear. The pin 11 has in its end a screw threaded socket 19 entered and engaged by the screw threaded shank of screw 18, and thus the sleeve 17 and pin 11 may be clamped together. Release is effected by turning the screw and adjustment of the pin longitudinally by turning the sleeve 17.

It will be understood that the invention is not limited to the particular form shown for illustration beyond what is called for in the following claim.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

A limit snap gauge comprising a frame provided with opposite pin sockets and a measuring stud or pin in each socket having a portion non-circular in cross section, non-rotatably fitting and longitudinally movable in a matching non-circular portion of said socket with a flat end work surface for measuring in a plane at right angles to the line of movement of the pin in the frame and having on the side facing the work a flat surface presenting a straight edge at right angles to the line of movement to the work, and a beveled surface connecting the working surface and the flat surface facing the work.

In testimony whereof we hereunto affix our signatures.

ALEXANDER MELDRUM.
CARL GABRIELSON.