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STEP ATTACHMENT FOR PLANER AND SHAPER OR LIKE GAUGES

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Fig. 2

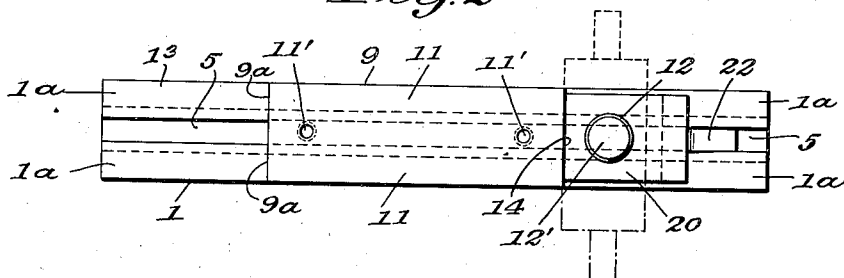


Fig. 1

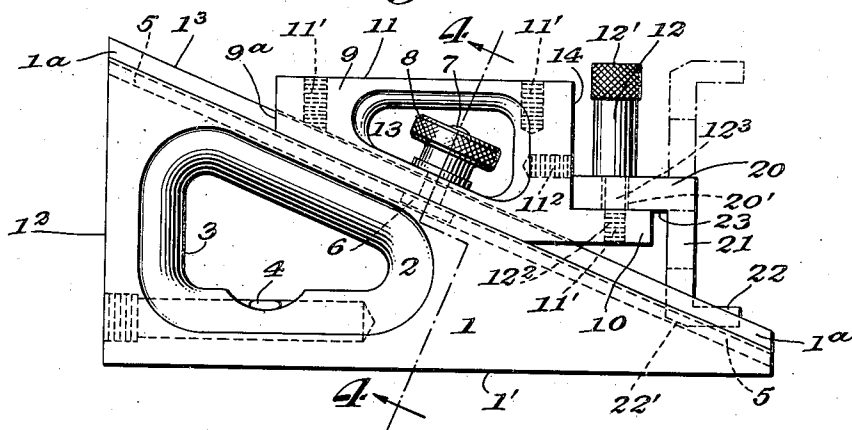


Fig. 3

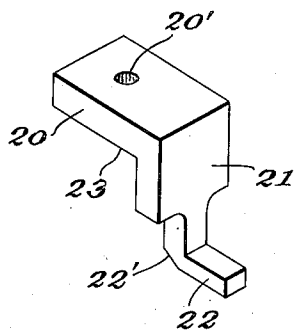
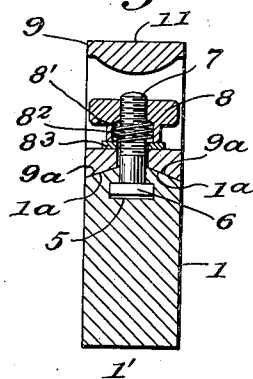


Fig. 4



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STEP ATTACHMENT FOR PLANER AND
SHAPER OR LIKE GAUGESCarlton S. Donaway, Indian Orchard, Mass., as-
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3 Claims. (Cl. 33—162)

This invention relates to planer, shaper or like gauges and more particularly to an attachment or extension combinable with the slide of such a device whereby to increase its range and efficiency.

As illustrative of the type of gauges involved, I refer to U. S. Patent No. 1,202,114 to Laroy S. Starrett, which came into considerable use in various modified forms. As therein shown, a shouldered slide is adjustably clamped on the slotted hypotenuse surface of a right-angle triangular frame.

As the general functions were explained in the above noted patent and have become generally understood through shop use in various parts of the world, no further explanation is here offered except to describe some of the new and additional features and uses made possible by my present invention.

The accompanying drawing is illustrative and explanatory, being keyed to the following description by usual reference characters. In the drawing:

Fig. 1 shows a side elevation of such a gauge as is herein involved in combination with its attachment.

Fig. 2 indicates a view in plan of the upper edges of such a device with parts in different posture suggested by broken lines.

Fig. 3 is a view of the step attachment removed, and

Fig. 4 is a section on the line 4—4, of Fig. 1.

As identifying the gauge structure shown with the former patent above referred to, I follow in general its original description with new or additional features pointed out.

1 is a triangular frame having a central web 2 with an opening 3 in which a bubble lever 4 is set to show the true horizontal position of the face 1' or the true vertical position of the face 1². The face 1³ is slotted at 5 with a T-slot in which the head of a bolt 7 is guided. 8 is a knurled locking nut on the bolt 7. This bolt 7 passes through a slide 9 on which are formed two steps or shoulders. The lower step 10 is below the level of the nut 8 and the upper step 11 slightly above the level of that nut.

12 is a removable post having a flat upper measuring surface 12' and a threaded screw stem 12² which engages a threaded socket 11' tapped vertically through the face 11.

As will be seen from Figs. 1 and 2, the face 1³ which represents the hypotenuse of the right-angle triangle forming the geometrical basis of the frame 1 is beveled laterally of its slot 5

through which the slide 9 is clamped in any adjusted position of height relative to the face 1' which constitutes the base of the frame and which is indicated level, or not, by the bubble tube 4.

This beveling which I have specifically indicated as 1^a to distinguish from the general edge 1' affords a greatly improved stability for the slide which has its underface correspondingly beveled as at 9^a so that the clamping bolt 7 draws it to a more perfectly centered plane of bisection of the slot 5. This novel feature is not here claimed as it belongs to another invention owned and used by applicant's assignee.

The present invention is more particularly directed to the attachment 20, 21, 22 which I will now describe in its combinative relation to the gauge proper as illustrated in Figs. 1 and 2.

In its present form the slide 9 of the gauge has its upper shoulder 11 extended over the nut 8, its body being apertured at 13 to receive the nut with its knurled edge exposed laterally for digital contact in loosening or tightening rotation of the stem 7 which has its head 6 slidably engaged under the overhanging edges of the T-slot 5. The nut 8 is preferably formed with a hollow neck 8' in which is a frictioning spring 8² the outer end of which rides on a washer 8³ through which the threaded stem 7 passes to give an intermediate bearing on the adjacent wall of the aperture 13.

The long upper shoulder 11 affords increased gauging surface and allows for two or more spaced sockets 11' to receive the threaded stem 12² of a post 12. These posts may be furnished in different lengths so that the flat upper measuring surface 12' of any one selected for use will afford a still more elevated contact surface above the plane of the shoulder 11. Any of the threaded stems 12² may be used to cooperate with the aperture 20' which constitutes the means whereby the supporting plate 20 of the attachment may be clamped to any shoulder location where it is desired to position it. These potential positions are each provided with a threaded socket 11' so that the supporting plate 20 of the attachment may be clamped to the shoulder surface at any one of them with its overhung foot 22 positioned on either side as suggested in the broken lines in Fig. 2.

In practice the socket 11² on the vertical face 14 of the end of the slide when the gauge is laid flat on its face 1' usually receives a selected post 12 directly vertical to its surface so that when the gauge is set up on its edge face 1² it can be

advanced to any desired position of verticality with its face 12' in proper contact position. Should it be desired to position the foot 22 laterally of such a vertical disposition of the gauge, the supporting plate 20 may be clamped by a post 12 to the face 14 in desired position.

The threaded portion 12² of the post 12 preferably has an unthreaded zone 12³ intermediate it and the lower face of the cylindrical portion of the post. This permits its ready insertion through the plate aperture which is unthreaded and slightly larger than the threaded post end as indicated in Figs. 1 and 3 at 20' in making its engagement with any of its threaded clamping sockets 11' of the frame.

The foot 22 which is narrowed to enter the slot 5 has its rear corner beveled off as at 22' to conform to the angle of the slot bottom. When so positioned the attachment braces the slide with great rigidity which is important when the face of the overhang 22 or other surface is brought up under a tool to set or check it in planer or shaper, or to duplicate the distance of an opening or gap.

One of the features of added advantage made possible by the use of my attachment lies in the fact that each of its members is of definite length, width and thickness, which, when added to the same dimension of the gauge itself, gives readily exact measurements in cases where the gauge without the attachment could not be satisfactorily used. Obviously, the dimensions of the portions of the attachment may be determined to fine micrometric exactness, for example, the upper surface of the foot 22 when positioned on the shoulder 10 of the slide 9 may be adjusted relative to the base surface 1' to any fine micrometer reading. Conversely, if set to a work surface or the plane of a tool, it may be micrometered to read any small distance between the planes for example of the upper surface of the foot 22 and the base 1'.

As the adjustment of the slide 9 on the incline 13 gives an infinite number of plane intersections for any surfaces carried by it, the adjustment or reading of any such low hung plane surface such as that of the upper side of the foot 22 may be for any small distance which I may term fractional, meaning thereby partial as most readings of course are in decimals.

For example, by spacing the upper surface of my supporting plate 20 by means of the portion 21 a units distance from that of its depending

foot 22 I provide a simple basis of added unitary measurement which may be readily determined.

For example, if a micrometer reading of an adjustment of the upper surface of the foot 22 showed 0.175" relative to the base, the upper surface of the plate 20 would show an elevation of 1.175". Unitary posts such as 12 would show upper top plane surface elevation at 12' according to their unit length. This gives a wide variety of plane levels to which to check or adjust.

The variety of combinations and uses made possible by my attachment is only limited to the workman's ingenuity in meeting the succession of demands developed by any job. Attachments according to my invention may be variously proportioned and designed for gauges of the many structures already on the market of this type.

What I therefore claim and desire to secure by Letters Patent is:

1. A slide for a gauge having base faces at right angles to each other and a hypotenuse face having a slideway extending to one end thereof, said slide having a portion to key the slide in said slideway and having another portion to extend into said slideway at a point in advance of and remote from said key portion, and said second-named portion having a gauging face parallel to the base face which is adjacent the open end of the slideway.

2. An attachment for a gauge having base faces at right angles to each other, a hypotenuse face having a slideway extending to one end thereof, and a slide on said slideway having a supporting face, said attachment having means to engage said supporting face, and a portion thereof to extend into said slideway and provided with a gauging face parallel to the base face which is adjacent the open end of the slideway.

3. An attachment for a gauge having base faces at right angles to each other, a hypotenuse face having a slideway extending to one end thereof, and a slide on said slideway having a supporting face, said attachment consisting of a member having a flat portion to engage said supporting face, a portion extending at right angles to said first-named portion, and a reduced portion to extend into said slideway, said last-named portion having a gauging face disposed parallel to said first-named portion and to the base face which is adjacent the open end of the slideway.

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