

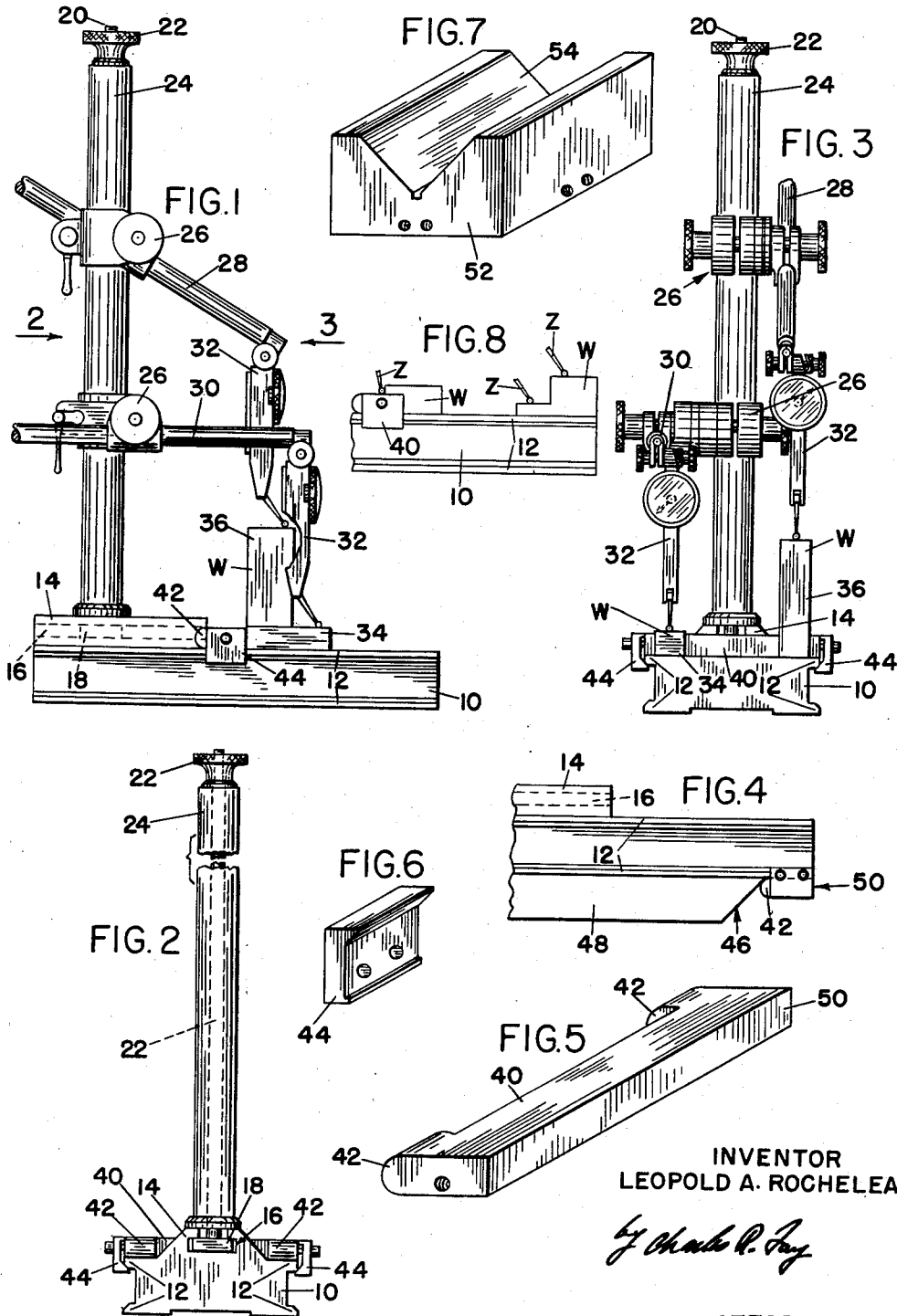
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L. A. ROCHELEAU

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COMBINATION TEST SET, GAUGE, COMPARATOR, AND DIAL INDICATOR

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INVENTOR
LEOPOLD A. ROCHELEAU

by Charles R. Fay

ATTORNEY

1

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COMBINATION TEST SET, GAUGE, COMPARATOR, AND DIAL INDICATOR

Leopold A. Rocheleau, % L. A. Rocheleau Tool & Die Co., 650 N. Main St., Leominster, Mass.

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4 Claims. (Cl. 33-169)

This invention relates to a new and improved combination gauge comprising particularly a small base member, a portion of which has a flat top and another portion of which is provided with a dove-tailed guide extending above the flat top of the first portion, both portions being integral and the dove-tailed portion mounting an upright adjustable post, upon which may be mounted one or more dial indicators or the like as appear in my Patent No. 2,733,035 dated January 31, 1956; in combination with an adjustable stop block adapted to be mounted on the first-named block in longitudinally adjusted position thereon forming a fence or the like against which workpieces of different heights may be set in order to provide for the comparator gauge to operate thereon, there being for instance a comparator gauge arranged at each height, so that a single workpiece may be gauged on at least two dimensions, one after the other, or at the same time, so as to speed the gauging operation; and the provision of a device of the class described wherein the stop block is adapted to be mounted on the bottom of the first-named block for engagement with the edge of a table or the like and particularly with the edge of an undercut table, said stop block having a pair of spaced round-nosed projections thereon for this purpose.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a view in side elevation illustrating the invention;

Fig. 2 is a view in end elevation, looking in the direction of arrow 2 in Fig. 1, the clamps being omitted;

Fig. 3 is a view in front elevation, looking in the direction of arrow 3 in Fig. 1;

Fig. 4 is an enlarged view showing an alternate setting of the stop block;

Fig. 5 is a perspective view of the stop block;

Fig. 6 is a perspective view of one of the end clamps for the stop block;

Fig. 7 is a perspective view of an alternate V block which may be used on the main stop block; and

Fig. 8 is a diagrammatic view illustrating a further use of the present invention.

In carrying out the present invention, a relatively small but substantial machined steel block generally indicated at 10 is provided. This block is preferably rectangular, and each side edge thereof is provided with lateral continuous extensions 12 forming guideways. The top of the block is completely plane for a portion of the surface thereof, preferably about one-half or a little greater; and the rest of the top surface of block 10 is taken up by a raised projection generally indicated at 14 and providing for an undercut, dove-tailed guideway 16, see particularly Fig. 2. This guideway extends the length of

2

the raised portion 14 and forms a guideway for a nut or the like 18 which is engaged by a screw-threaded rod 20 turned by a knob 22 at the top of a column 24, so that the column may be adjustably secured in position anywhere along the guideway 16 merely by loosening and tightening knob 22.

The column is adapted to mount a series of clamps, each of which is generally indicated by the reference numeral 26. These clamps are not illustrated in detail and reference is hereby made to the patent above identified for the details of construction thereof. However, these clamps allow for the adjustable mounting of various rods 28 and 30 angularly, longitudinally, and in a path of revolution annularly about the column 24. Each rod 28 and 30 or more, if there are more, is adapted to mount a dial indicator thereon or comparative indicator such as at 32. These are well known devices which are available commercially and may be applied removably to the ends of the rods for the general purposes of a dial indicator or for comparative purposes as for instance as perhaps best illustrated in Fig. 3.

In this figure, there are shown two workpieces W which are indicated at 34 and 36. These workpieces may be the same but the point is that it is necessary to engage each of two surfaces of different heights. One comparator 32 may be set to gauge all pieces at one particular dimension and the other comparator 32 may be set to gauge the other dimension or length of the workpiece.

In order to provide for correct setting of the workpieces under the position of the settings of the comparators, there is provided a stop block generally indicated by the reference numeral 40. This stop block extends across the base of the device 10 (as shown in Figs. 2 and 3), and is provided with a pair of laterally-extending, round-nosed projections 42. These are adapted to straddle the upright portion 14 as shown in Fig. 1, and these serve to locate the device squarely. At the same time, there are clamping members as seen in Fig. 6 and as indicated at 44, and there is one of these clamping members at each end of the stop block 40. Allen-head screws or the like serve to secure the clamps 44 to the stop block 40, and there is a clamp 44 at each end thereof, for clamping securement or for slidable guiding engagement with the tracks 12. One clamp 44 may be provided with two screws and the other with one in order to accurately and squarely position the stop block on the base 10.

It is desired to be emphasized that the block 40 is longitudinally adjustable on base 10, and also it may be placed on the bottom thereof as indicated in Fig. 4, wherein the round-nosed portions 42 engage the undercut edge 46 of a table 48 and position the base block 10 in correct position as desired. The stop block 40 may also be turned around so that its square edge 50 could be used to abut a square-edged table if desired.

Also, the stop block 40 is adjustable along the bottom of the base 10, as throughout the length thereof, and serves to position column 24 where desired with respect to the edge of a table.

A V block generally indicated at 52 may also have clamps 44 applied thereto by the same screws, so that the V of the block as 54 may extend across base 10 or longitudinally thereof; and it may be positioned by stop block 40 or the latter may be omitted and the V block used by itself for purposes which will be clear to those skilled in the art.

Some of the advantages of this invention are that the upright post 24 may be removed or inserted at either end of the T-slot base 14; when used as a comparator, the member 40 may be used as a stop when checking work close to a shoulder so as not to hit the indicator contact point. Furthermore, the stop 40 may be used as a back

3

stop or front stop, i.e., it is adjustable anywhere along the base, and when used as a comparator, the stop may be used as a gauging member for gauging three or more different levels with three or more different indicators, by setting it on different edges to provide different heights.

Also, the four forty-five degree surfaces or guideways 12, 12, see Fig. 3, provide very easy clamping of the stop to the base, and this also applies to clamping the V-block to the base, as well as other kinds of similar fixtures or gauges.

Finally, the combination indicator test set may be used as a surface gauge or as a universal dial gauge or comparator.

As shown in Fig. 8, the base 10 may be provided with the stop block 40 in any position to receive a workpiece W having an overhanging end member as shown diagrammatically. The reference letters Z, Z show the pointers for the comparator devices 32 and indicate three different locations on one workpiece which may be gauged either simultaneously or one after the other by this test set. Of course the device is not limited to three such members but may have any reasonable number of the same applied thereto as will be clear to those skilled in the art.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A device of the class described comprising a base block, said base block having a plane bottom surface, said base block having a portion only of the top surface thereof plane and parallel to the bottom surface, an upstanding guideway on the top surface of said base block, said guideway extending along the top surface from one end of the base block to a point centrally located on the top surface, the remainder only of the base block top surface being plane, an adjustable upright column mounted in said guideway, a clamp on said column, said clamp being rotatably and slidably adjustable thereon, a stop block slidably mounted on said base in the plane portion of the top surface thereof, said stop block having a workpiece engaging surface thereon, means to clamp the stop block to said base block with the workpiece engaging surface in a predetermined relation to the clamp on the column, whereby a workpiece position will be established on said plane top surface as desired, guideways at the top and bottom side edge surfaces of said base block, the clamping means for the stop block being engageable selectively with either the guideways adjacent the top surface of the base block or those at the bottom surface of the base block.

4

2. A device of the class described comprising a base block of rectangular shape, said base block having a plane bottom surface, means forming guideways on the side edges thereof, said base block having a partially plane top surface, an upstanding member on said base block, a guideway in said upstanding member, said guideway being parallel to the guideways at the edges of the base block, a column adjustably positioned on the last-named guideway, clamping means on the column, a stop block adjustable along the plane portion of the top surface of said base block to and from the upstanding member containing the guideway, means for clamping the stop block in predetermined position on said top surface plane portion, rounded projections on the stop block, said projections being spaced from each other and appearing at opposite ends of the stop block, said projections being spaced to straddle a portion of the said upstanding member.

3. The device of claim 2 wherein said clamping means is removable for clamping the stop block to the base block at the bottom surface of the base block.

4. A device of the class described comprising a base block of rectangular shape, said base block having a plane bottom surface, means forming guideways on the side edges thereof, said base block having a partially plane top surface, an upstanding member on said base block, a guideway in said upstanding member, said guideway being parallel to the guideways at the edges of the base block, a column adjustably positioned on the last-named guideway, clamping means on the column, a stop block adjustable along the plane portion of the top surface of said base block to and from the upstanding member containing the guideway, means for clamping the stop block in predetermined position on said top surface plane portion, a removable V block, clamping means selectively positionable at either of two pairs of opposite side edges thereon for application of the V block to the top surface of the base block, so that the apex of the V may be parallel to the length of the base block or transversely disposed with relation thereto, said V block having its length and breadth of dimensions comparable to the width of the base block for application of the clamping means to the side edge guideways on the base block.

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