

LE GRAND B. MINGES.
GAGE.
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996,503.

Patented June 27, 1911.

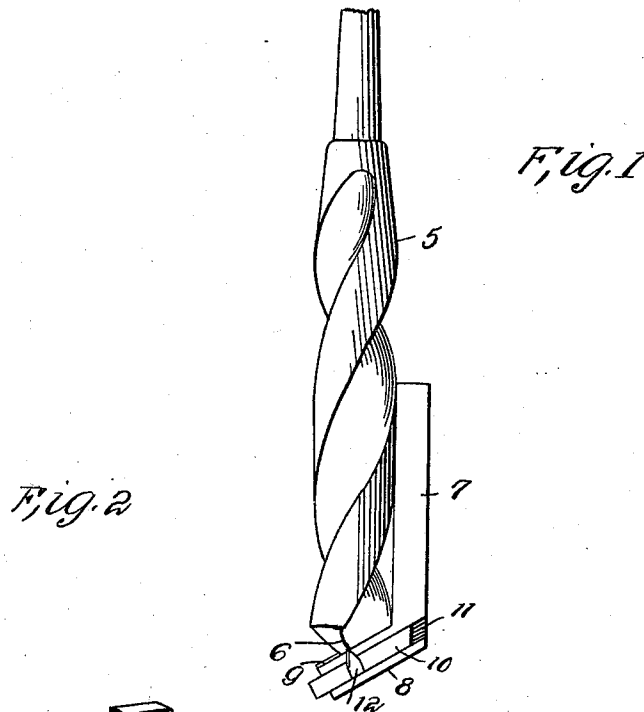


Fig. 2

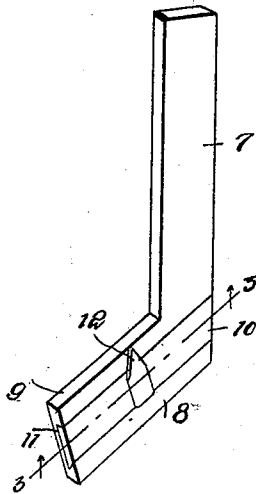
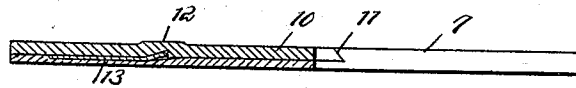


Fig. 3



Witnesses

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GAGE.

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To all whom it may concern:

Be it known that I, LE GRAND B. MINGES, a citizen of the United States, residing at Lestershire, in the county of Broome and State of New York, have invented new and useful Improvements in Gages, of which the following is a specification.

This invention relates to improvements in gages and has particular reference to a gage employed to measure the cutting edges of drills.

One object is the provision of a gage comprising an angular-shaped body the angular distance between the bearing surfaces of which will be proportionately to the angle of clearance of the cutting edges of the drill to be gaged, one of the sides of the said angular-shaped body being designed to bear on the cutting edge of the tool and having its bearing surface beveled, whereby the clearance in back of the cutting edge may be readily observed.

A further object is the provision of an improved form of indicator slidably fitted on that side of the gage which is adapted to bear on the cutting edge, the said indicator being so positioned that after the length of one cutting edge has been determined and the tool turned on the gage an error in the opposite cutting edge will be readily exposed.

A still further object is the provision of a means for yieldingly holding the indicator in any of its adjusted positions.

With these and other objects in view, which will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claim; it being understood that various changes in the form, proportion, size, and minor details of the device may be made within the scope of the appended claim, without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, forming a part of the specification;—Figure 1 is a front elevation of the device showing it applied to a drill. Fig. 2 is a detail perspective of the device. Fig. 3 is a sectional end view on the line 3—3 of Fig. 2.

Similar numerals of reference are em-

ployed to designate corresponding parts throughout.

The device may be employed with common drills and twist drills, since it is well-known that for different work the angles of the cutting edges of drills vary. Since these angles are constant it must be understood that I am not to be limited to any angle in the gage about to be described, since it will be understood from what will appear later that a plurality of gages constructed in accordance with my invention may have their sides various angular distances apart without departing from the spirit or sacrificing any of the advantages of the invention.

The drill as shown in Fig. 1 is designated by the numeral 5 and its cutting edges by the numeral 6.

The device forming the subject matter of the present invention is an obtuse angular-shaped body preferably formed of metal having sides of unequal length, the longer of which is designated by the numeral 7 and the shorter by the numeral 8. The longer side 7 is designed to bear on the side of the drill, parallel with the long axis of the latter while the shorter side 8 bears on the cutting edge 6 of the drill, the angle formed between the bearing surfaces of these sides being proportional to the angle of the said cutting edge. Since it is well-known that the lips upon which the cutting edges 6 are formed have a certain angular pitch, according to the work required of the drill, the bearing surface of the side 8 is beveled correspondingly, as shown at 9, so that when the said bearing surface 9 bears on the lip any error in the angle of the lip produced by grinding will be readily observed.

In order to measure the lengths of the cutting edges I provide an indicator designated in general by the numeral 10. This member corresponds in length to the length of the shorter side 8 and has its opposite longitudinal sides beveled and is slidably fitted in a dove-tailed slot 11 formed in one face of the shorter side 8. The thickness of the indicator corresponds to the depth of the dove-tailed slot or groove, so that the outer surfaces of the side 8 and indicator will be co-incident. Arranged on the intermediate portion of the outer face of the indicator 10 is a finger 12 which extends upwardly to the edge of the side 8. With

this construction it will be manifest when the parts are positioned as shown in Fig. 1 and the length of one cutting edge determined by positioning the indicator at the inner end of said edge and then turning the drill until the opposite cutting edge bears on the side 8 that a difference in length between the two sides will be readily observed.

The indicator is yieldingly held against movement by means of a leaf spring 13 one terminal of which is fixedly secured in the floor of the dove-tailed slot or groove 11, and the free terminal of which bears on the inner face of the indicator 10, the said spring bearing on the indicator sufficiently hard to prevent the latter from accidental sliding. The free end portion of the spring 13 is slidingly curved and engages with a notch in the medial portion of the lower face of the indicator 10 so that when the latter is in inoperative position and its opposite ends co-incident with the opposite ends of the shorter side 8, the curved terminal of the spring will be disposed in the recess, whereby a comparatively strong shove will be necessary to move the indicator in the direction of its length.

It can be readily seen that a device of this kind used for ordinary machine drills may be readily carried in the pocket and will present a neat and attractive appearance. It will be further observed that the device is exceedingly simple in structure and inexpensive in manufacture, embodying few parts and these so arranged that the danger of derangement will be reduced to a minimum.

I claim:—

An edge gage for cutting tools comprising a positioning arm to bear on one side of the tool, a gage arm arranged at an angle to and connected with the positioning arm and having a beveled surface to bear on the edge of the tool, and an indicator slidingly fitted on the gage arm and movable longitudinally of the said arm and a spring positioned between the indicator and gage arm, for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

LE GRAND B. MINGES.

Witnesses:

FRANK C. SAVERCOOL,
HENRY T. VARCOE.