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J. P. PRATT.

MACHINIST'S GAGE.

(Application filed Mar. 7, 1900.)

(No Model.)

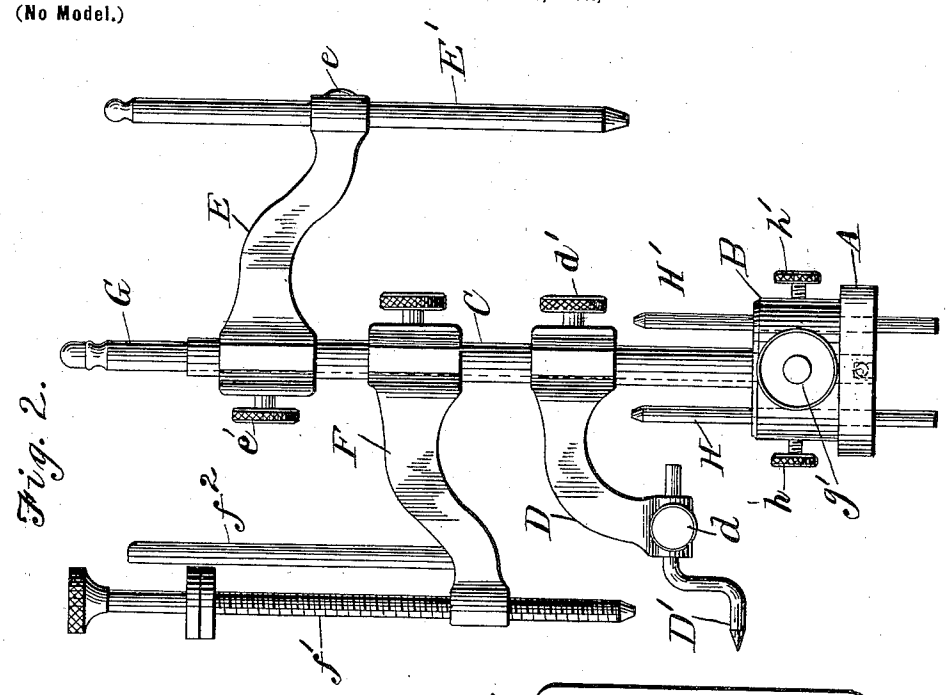


Fig. 2.

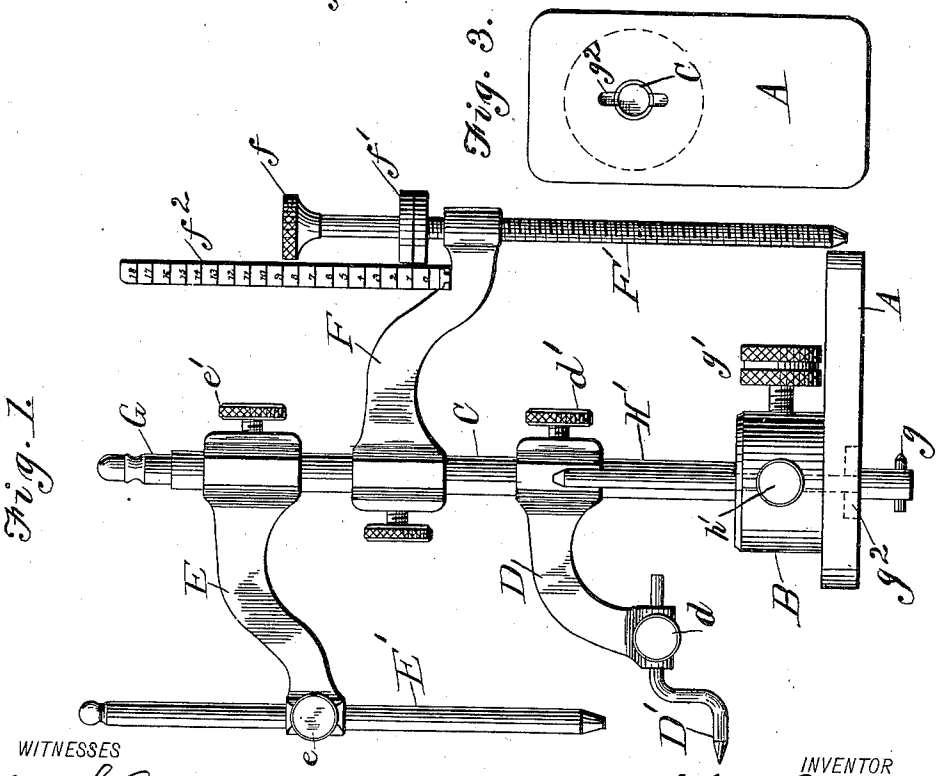


Fig. 1.

Fig. 3.

WITNESSES

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MACHINIST'S GAGE.

SPECIFICATION forming part of Letters Patent No. 652,521, dated June 26, 1900.

Application filed March 7, 1900. Serial No. 7,642. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. PRATT, a citizen of the United States, residing at Milford, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Machinists' Gages; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of devices commonly called "machinists' gages" and employed by machinists and others for gaging, testing, and measuring various kinds of work.

The object of my said invention is to provide or produce a simple, cheap, and efficient implement which shall embody in one structure a scratch-gage, surface-gage, depth or shoulder gage, height-gage, and micrometer measure-gage, each being complete in itself, one not interfering with another, and yet all or any capable of coöperative or conjunctive use, taking their measurements or distances from the face of their common base. To accomplish all of this and to secure other and further advantages in the matters of construction, operation, and use, my improvements involve certain new and useful arrangements or combinations of parts and peculiarities of construction, as will be herein first fully described and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is an elevation of my improved gage, showing the longer side of the base or bottom; and Fig. 2 a similar view showing the end of the base, the adjustable parts in the figures being differently located to indicate in a small measure their capabilities of adjustment. Fig. 3 is a plan of the under side of the base, showing the recess therein for accommodating the scratch-pin.

In all the figures like letters of reference wherever they occur indicate corresponding parts.

A is the base-piece of the implement, made oblong, as indicated, and having a plane under or bearing face. The ends and sides of the base should be formed at right angles with each other and vertical with respect to the lower surface, so that the implement may be accurately located for use in any position required and returned to that position with precision whenever necessary.

Upon base A is cast or otherwise fixed a hub B, which serves as a seating for the main standard or column C and for other purposes. Standard C is of any required length, is exteriorly round and interiorly hollow to accommodate the spindle of the scratch-gage and allow the same to move therein, and is accurately and firmly seated so that its axis shall remain at right angles with the lower face of the base. The various arms employed are each movable up or down upon standard C and each capable of revolution therearound, each being supplied with a suitable set-screw or clamping-screw to maintain it in any position to which it may be adjusted upon the standard or column.

The surface-gage arm D carries a scratch-point rod D', which may be adjusted back or forth or rotated in its seating in the end of the arm and there held by a small clamping-screw *d*. This arm is movable upon the column, as above explained, and is held adjustably in place by its set-screw *d'*. Being thus arranged and mounted it affords a surface-gage of general applicability and may be employed either with or without the other parts.

E is the adjustable arm for the height-gage. It is mounted upon the column same as the other arms and sustains at its outer end an adjustable rod E', capable of vertical movement within its arm and held therein by set-screw *e*, the arm being also supplied with a set-screw *e'*, by which it may be adjusted in position upon the column. This affords means for gaging the height of any point of the work above the lower face of the base and may be used separately or conjointly with other parts, as desired. The rod E' is preferably plain and smooth, so that it may slide in its bearing; but obviously it might be otherwise made adjustable therein if preferred, as by forming it like a screw or like a rack to be moved by a pinion.

The measuring-gage is sustained upon column C in an arm F, also capable of rotation and vertical adjustment. Seated in the outer end of this arm F is the measuring-screw or

threaded rod F', having a suitable thumb-piece f and provided with an indicating-disk f', immovably fixed upon the screw. The arm F carries a graduated scale f^2, with which the disk f' registers, the two constituting a micrometer by which the distance of the point of the screw from the plane of the base-face may be accurately measured, as will be readily understood. This affords means for measuring the height of any point of the work or indicating the height to which any point should be brought, and it may be used with or without the other parts or either of them. By swinging or rotating the arm F upon the column C its outer end, and with it the screw F', may be brought beyond the periphery of the base, whereby the tip of said screw can be used to measure distances from said periphery laterally as well as vertical heights above the plane of the upper face of the base.

G is the rod or spindle of the scratch-gage, the same being movable up and down within the hollow column C and in no way interfering with the required movements of the arms mounted on the exterior of said column. At its lower end this spindle carries a suitable form of laterally-projecting scratch-point, as g, and a thumb-screw g', seated in the hub B, reaches through column C, so as to bear against spindle G and lock the same in any position to which it may be moved. The lower face of base A is suitably recessed, as at g^2, so as to accommodate within it the scratch-pin g and the lower end of the spindle when not projected for use. The lower face of base A operates as a guide for the scratch-pin when the latter is projected therefrom, and the implement may then be used for marking same as any scratch-gage and this without altering the adjustment of any of the other parts.

The vertically-movable rods or pins, as H and H', pass through hub B and through plate A and are held in place by set-screws, as h and h', these pins being employed for depth-gages or shoulder-gages, and they may be used together or separately as the nature of the work may demand, and they may be used with or without the other elements, as will be apparent.

The relative arrangement or location of the arms upon the column may be varied at pleasure, they being each removable and alike adjustable.

The improved implement constitutes a practically-universal gage and is well adapted to answer all the purposes or objects of the invention previously set forth. The height or depth or distance of any point of the work from a given line having been suitably ascertained by the appropriate elements of the device, these elements may be fixed in position and the tool then employed as a test-gage and marker, as will be understood by those accustomed to the use of gages for mechanical work.

Having now fully described my invention, what I claim as new herein, and desire to secure by Letters Patent, is—

1. In a gage of the character herein set forth, the combination with a base, a hub, and a column, all rigidly connected and pierced with a continuous opening; of a rod adjustable longitudinally through said opening, a point on this rod adapted to be set at various distances from the bottom of the base, a series of arms adjustable around and upon said column, and a series of rods adjustable individually in the arms with respect to the distance of their operative ends from various parts of the base, substantially as shown and described.

2. In a gage of the character herein set forth, the combination with a base, a hub, and a column, all rigidly connected and pierced with a continuous opening; of a scratch-gage spindle passing longitudinally through said opening, a thumb-nut in the hub against such spindle, a scratch-point at the lower end of the spindle, a series of arms surrounding and adjustable upon said column, and a series of rods adjustable in the arms with respect to the distance of their operative ends from said base, substantially as shown and described.

3. In a gage of the character herein set forth, the combination with the base, a hollow column rising therefrom, and a spindle adjustable within said column and having a point; of an arm adjustable upon the exterior of said column, a rod adjustable through the arm so as to bring its operative end into various positions with respect to the base, an indicating-disk on said rod, and a scale fixed upon said arm and standing adjacent the disk, substantially as shown and described.

4. In a gage of the character herein set forth, the combination with the oblong base, a column rising from near one end thereof, an arm adjustable vertically on and laterally around the column, and a graduated scale rising fixedly from the arm; of a rod parallel with the scale and threaded through the arm so as to bring its point into various positions with respect to the upper face of the base, or, when said arm is swung on the column, with respect to the edge of the base, and an indicating-disk fixed on this rod and moving adjacent said scale, substantially as shown and described.

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

JOHN P. PRATT.

Witnesses:
WENDELL WILLIAMS,
LEVI W. MOORE.