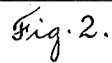
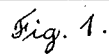


G. H. NUTT.
SURFACE GAGE.

Patented Feb. 14, 1893.



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SURFACE-GAGE.

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To all whom it may concern:

Be it known that I, GEORGE H. NUTT, a citizen of the United States, residing at Worcester, in the county of Worcester, State of Massachusetts, United States of America, have invented certain new and useful Improvements in Surface-Gages; and I do hereby declare that the following is a full, clear, and exact description thereof, which, in connection with the drawings making a part of this specification, will enable others skilled in the art to which my invention belongs to make and use the same.

My invention relates to surface gages used for gaging plane surfaces, and for marking metals to be planed, filed, or otherwise worked.

The object of my invention is to improve upon the construction of surface gages as now ordinarily made, and to provide a surface gage of very simple construction and operation, in which a quick adjustment of the pointer may be obtained, so that the pointer may be moved from end to end of the supporting post in a very short space of time, and in which a very fine adjustment of the pointer may also be obtained independent of the quick adjustment.

My invention consists in certain novel features of construction and operation of a surface gage, as will be hereinafter fully described, and the nature thereof indicated by the claims.

Referring to the drawings:—Figure 1 is an elevation of my improved surface gage with one end of the pointer broken off, looking in the direction of arrow *a*, Fig. 2. Fig. 2 is a central vertical section of the gage, shown in Fig. 1, looking in the direction of arrow *b*, Fig. 1.

In the accompanying drawings 1 is the main standard, or supporting post of the gage, which is made hollow with a central longitudinal hole 2, throughout its length, and a slot 3 in one side thereof, extending nearly the full length of the post 1. The lower end of the post 1 is secured to the metal base 1', in this instance, by means of a screw thread on the lower end of said post engaging a screw threaded hole in said base 1'. A screw threaded rod 4 extends loosely within the post 1 and is adapted to turn therein; the

lower end of said rod has a nut 5 fast thereon, which turns with said screw rod, and bears against the lower end of the post 1, see Fig. 2. The upper end of the screw rod 4 is provided with a cap 6 which is secured thereto in this instance by a pin 7; the lower end of said cap 6 is turned down and extends within the upper end of the post 1, as shown in Fig. 2, to hold the screw rod 4 in its proper position, within the post 1. The cap 6 is provided with a milled surface at its upper end, by means of which it may be readily rotated or turned, causing the screw rod 4 to turn with it within the post. The upper end of the post 1 may be graduated and provided with figures, as shown in Fig. 1, and the cap 6 provided with a mark, to register with the marks on said post.

By constructing the post and rod as above described the rod is centrally journaled within the post and is prevented from longitudinal movement in either direction. The nut 5 fits within the recess at the bottom of the base and centers the rod within the post and also forms a shoulder which engages with the lower end of the post and prevents longitudinal movement upward. The cap 6 at the upper end forms a shoulder which engages with the top of the post and prevents longitudinal movement of the rod downward. If desired the contacting surfaces of the cap and post may be suitably shouldered and recessed to provide means for centering the rod within the post at the top. In this manner the rod can be held very accurately within the post without the additional cost of extra pieces or special construction of the parts that must necessarily be used.

Supported on the post 1, and adapted to slide freely thereon, is a block or carriage 8, having a lateral projection 8' on one side thereof, provided with a clamp 9, and thumb screw 10, by means of which the pointer 11 may be clamped at any desired inclination. The pointer 11 and its clamping device are substantially the same as in gages of the ordinary construction.

On the opposite side of the carriage from the clamping device for the pointer 11, is a spring actuated lever 12, which is pivoted in this instance on a pin 13, supported in ears

14, on the carriage 8. The lower end of the lever 12 extends through a slot or opening in the carriage 8, and is provided with an inwardly extending portion 12' having teeth thereon, forming a half nut adapted to engage the screw thread on the screw rod 4. A spiral spring 16 is interposed between the carriage 8 and the engaging end of the lever 12, see Fig. 2.

From the above description in connection with the drawings, the operation of my improved gage will be readily understood by those skilled in the art. The pointer 11 is first adjusted at the desired angle by means of the clamping device. The upper end of the lever 12 is then pressed inwardly against the action of the spring 16, disengaging the lower end of said lever from the screw rod 4, and the carriage 8 is then free to be moved up or down on the post 1, for the quick adjustment of the pointer. The carriage is preferably grasped between the thumb and forefinger, with the thumb on the upper end of the lever 12, and the forefinger on the opposite side of the carriage 8, or vice versa. When the pointer 11 is almost in contact with the work to be gaged, the lever 12 is released, allowing the lower end thereof to engage with the screw thread on the screw rod 4, as shown in Fig. 2. The cap 6 is now rotated, causing the screw rod 4 to rotate with it, and the carriage 8 carrying the pointer 11 to be moved slowly up or down on the post 1, by reason of the engagement of the lower end of the lever 12 with the screw rod 4, for the fine adjustment of the pointer.

It will be understood that the details of construction of my surface gage may be varied some from what is shown and described, if desired; for example, the post may be provided with a plain lower end to be driven into the base.

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

1. In a surface gage, the combination, with a hollow post, one side of which is slotted longitudinally, of a rotatable screw threaded rod within said post, each end of which rod is provided with a shoulder and engages with the respective end of the post and prevents longitudinal movement of the rod, and a carriage upon the post provided with a pointer, and

with a movable screw threaded contact piece for engaging with the rod, substantially as set forth.

2. In a surface gage, the combination with a hollow post, one side of which is slotted longitudinally, and the base is provided with a circular recess, of a rotatable screw threaded rod within the post of a less diameter than the bore of the hollow of the post, and having its lower end provided with a shoulder to fit the bore of the recess and also engage with the lower end of the post, a cap secured to the upper end of the rod the contacting surfaces of the cap and post being shouldered and fitting one within the other, and a carriage upon the post provided with a pointer, and with a screw threaded contact piece for engaging with the rod substantially as set forth.

3. In a surface gage, the combination, with a hollow post, one side of which is slotted longitudinally, of a rotatable screw threaded rod within the post provided with means for rotating it and preventing its longitudinal movement within the post, a carriage on the post, one side of which is provided with a clamp and the other side is provided with a spring actuated lever pivotally secured thereto longitudinally of the post, one end of which lever is provided with an inward projection which fits in the slot of the post and has teeth to engage with the screw threads of the rod, and a pointer in the clamp, substantially as set forth.

4. In a surface gage, the combination, with a hollow post, one side of which is slotted longitudinally, of a rotatable screw-threaded rod within the post provided with means for rotating it and preventing its longitudinal movement, a carriage on the post one side of which is provided with a screw-threaded stud and the other side is provided with ears, a clamp and a nut on the stud and a spring actuated lever pivotally secured between the ears, one end of which lever is provided with an inward projection which fits in the slot of the post and has teeth to engage with the screw threads of the rod, and a pointer in the clamp, substantially as set forth.

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