

No. 672,634.

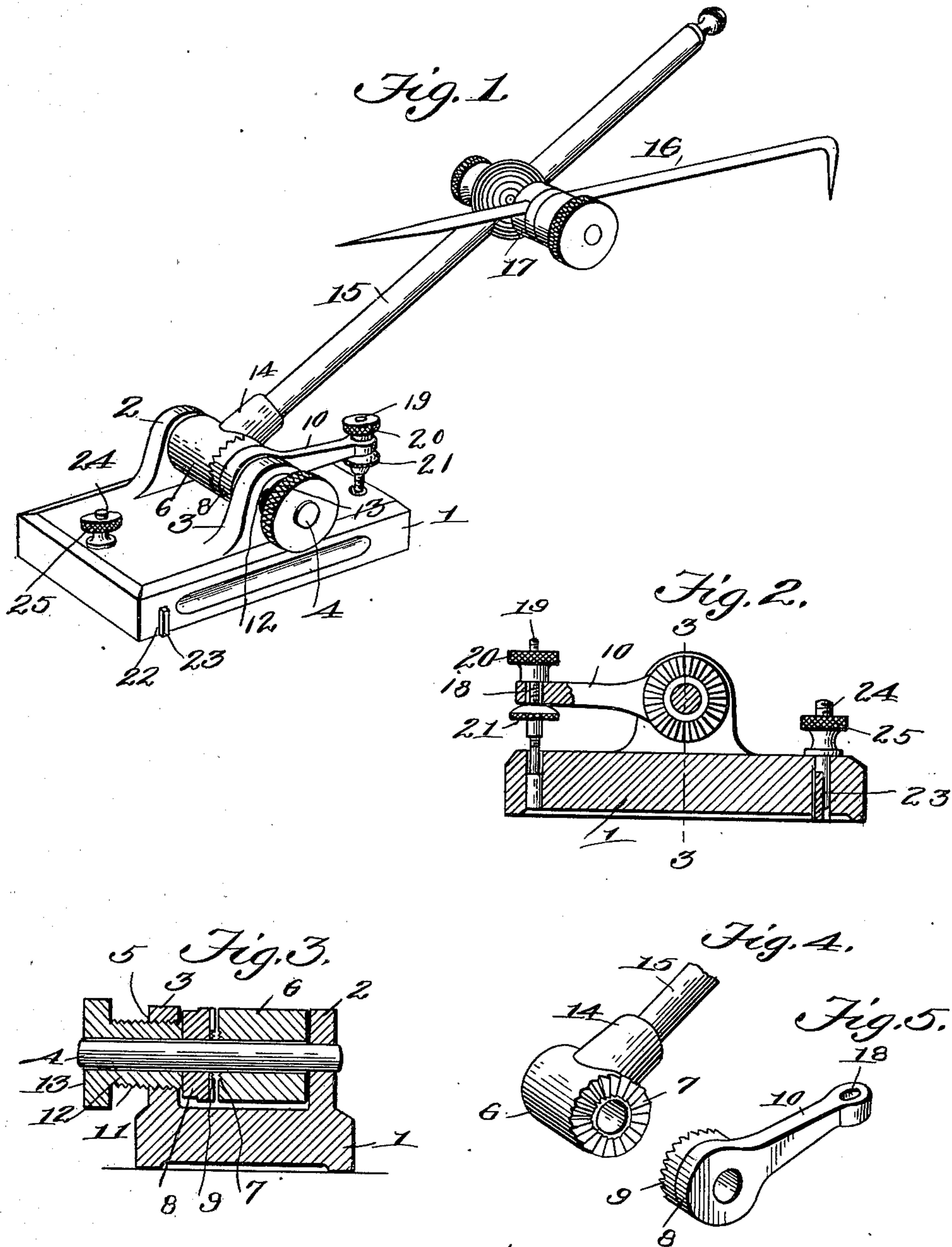
Patented Apr. 23, 1901.

S. H. BELLOWS.

SURFACE GAGE.

(Application filed Dec. 31, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

STEPHEN H. BELLOWS, OF ATHOL, MASSACHUSETTS, ASSIGNOR TO THE
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SURFACE-GAGE.

SPECIFICATION forming part of Letters Patent No. 672,634, dated April 23, 1901.

Application filed December 31, 1900. Serial No. 41,692. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN H. BELLOWS, a citizen of the United States, residing at Athol, in the county of Worcester and State of Massachusetts, have invented new and useful Improvements in Surface-Gages, of which the following is a specification.

My invention relates to surface-gages, one object of the same being to provide a positive, rigid, and unyielding connection between the upright on which the pointer is adjustably mounted and the adjusting-arm for the upright.

Other objects of the invention will herein-
after appear.

The invention consists of a pivotally-mounted upright or standard having a pointer adjustable thereon, a laterally-extending adjusting-arm for said upright or standard, and a toothed clutch connection between said upright and said arm.

The invention also consists in certain features and details of construction and combinations of parts which will be hereinafter more fully described and claimed.

In the drawings forming a part of this specification, Figure 1 is a perspective view of my improved surface-gage. Fig. 2 is a longitudinal vertical section. Fig. 3 is a transverse section taken on the line 3 3 of Fig. 2, and Figs. 4 and 5 are detail perspective views.

Like reference-numerals indicate like parts in the different views.

The base 1 of my improved gage is formed on its upper side with two parallel lugs or ears 2 3, the ear 2 having a transversely-extending horizontally-disposed shaft 4 therein, which projects through an enlarged opening 5 in the ear 3. Said opening 5 is provided with screw-threads, as clearly shown. Mounted for pivotal movement on the horizontal shaft 4 is a sleeve 6, one end of which bears against the lug 2 and the other end of which is provided with teeth or serrations 7, said sleeve, with the serrations thereon, constituting one member of a clutch. The other member of said clutch consists of a collar 8, embracing the shaft 4, having teeth or serrations 9 on one edge thereof, which are adapted to engage the teeth or serrations 7 on the sleeve 6, and an adjusting-arm 10 secured to or

formed integral with said collar and projecting laterally therefrom. Extending through the opening 5 in the lug or ear 3 and provided with external screw-threads 11, which engage the screw-threads in said opening, is an adjusting screw or sleeve 12, having a milled head 13 on its outer end, by means of which said sleeve or screw may be turned. The inner end of the sleeve or screw 12 is adapted to bear against the collar 8 for the purpose of forcing said collar into locking engagement with the sleeve 6. The said sleeve 6 is formed with a socket 14, in which is secured an upright or standard 15. On this standard is adjustably mounted the pointer 16. The said pointer is capable of rotary and longitudinal adjustment in a bracket 17, and said bracket is vertically adjustable on the upright or standard 15. The adjusting-arm 10, which is secured to the collar 8, constituting one member of the clutch, is provided with an opening 18 at or near its outer end, through which opening extends a vertically-disposed threaded rod or stud 19, secured to the base 1 and extending upwardly therefrom. Adjustable on the rod 19 and located on opposite sides of the arm 10 are the set-nuts 20 and 21. When said nuts are moved so that they engage opposite sides of the arm 10, said arm and the parts connected therewith are rigidly locked against movement. By loosening the upper set-nut 20, however, from its engagement with the arm 10 and turning the lower set-nut 21 so that it moves upwardly on the rod 19 the free end of the adjusting-arm 10 and the parts connected therewith will be rocked and a new adjustment of the same obtained. A corresponding downward movement and adjustment of the arm 10 may be effected by first lowering the lower set-nut 21 and screwing the upper set-nut 20 down upon the rod or stud 19.

In using my device the adjusting screw or sleeve 12 is loosened, so as to move the inner end thereof away from the collar 8, which constitutes one member of the clutch, and thereby disengaging the two parts of the clutch one from the other. The sleeve 6, with the standard 15 and pointer 16 connected thereto, is then free to be turned to approximately the proper position on the shaft 4,

when the set-screw 12 is screwed up and the teeth or serrations 9 on the collar 8 are brought into locking engagement with the teeth or serrations 7 on the sleeve 6, and an approximate adjustment of the upright or standard 15 and of the pointer 16 thereon is thereby obtained, and said upright is positively locked against rocking movement on the shaft 4, from which it is supported. The finer adjustment of the upright or standard 15 and of the pointer 16 thereon may be obtained by loosening one of the set-nuts 20 21 and turning the other of said set-nuts, so as to move the adjusting-arm 10 in one direction or the other. As said adjusting-arm 10 is positively locked, through the clutch described, to the upright or standard 15, any movement of said adjusting-arm will transmit a corresponding movement to said upright or standard. When the finer adjustment has been obtained through the arm 10, all the parts may be firmly locked against movement by turning the set-nuts 20 21 so that they will engage opposite sides of the arm 10.

In the under side of the base 1 is a slit or groove 22, extending transversely thereof and terminating a short distance from the upper surface of said base. In this slit or groove fits and is movable a gage-plate 23, having a screw-threaded stem 24 thereon, which projects up through a vertical opening in the base 1 and has an adjusting-nut 25 on its upper end. This plate 23 is provided for the purpose of enabling the base 1 to be aligned with reference to its support. By screwing down the nut 25 upon the upper end of the stem 24 the plate 23 may be raised, so that it lies entirely within the slit or groove 22. By loosening said nut 25, however, said plate 23 may be caused to drop below the surface of the base 1, and thereby acts as a guard or guide to align the base with reference to its support, the same being adapted to bear against or engage the side edge of the part on which the gage is located.

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

1. In a surface-gage, a pivotally-mounted upright or standard carrying an adjustable

pointer, a laterally-extending adjusting-arm for said upright, and a positive adjustable clutch connection between said arm and said upright.

2. In a surface-gage, a pivotally-mounted upright or standard carrying an adjustable pointer, a laterally-extending adjusting-arm for said upright, and a toothed adjustable clutch connection between said arm and said upright.

3. In a surface-gage, a pivotally-mounted upright or standard carrying an adjustable pointer, a laterally-extending adjusting-arm for said upright, a toothed clutch connection between said arm and said upright, and positive means for locking said arm against movement in either direction when the same is in its adjusted position.

4. In a surface-gage, a base, a pivotally-mounted upright or standard thereon, a pointer adjustable on said upright, an adjusting-arm for said upright, a clutch connection between said arm and said upright, a threaded rod secured to said base and extending through said arm, and set-nuts on said threaded rod located on opposite sides of said arm.

5. In a surface-gage, the combination with a base having a plurality of lugs or ears projecting upwardly therefrom, of a shaft extending through said ears, a sleeve loosely mounted on said shaft having teeth or serrations at one end and constituting one member of a clutch, an upright or standard carrying an adjustable pointer secured to said sleeve, a collar loosely mounted on said shaft having teeth or serrations at one end adapted to engage the teeth or serrations on said sleeve and constituting the other member of the clutch, a laterally-extending adjusting-arm secured to said collar, means for forcing said clutch members into locking engagement with each other, and means for adjusting said arm and the parts connected therewith.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

STEPHEN H. BELLOWS.

Witnesses:

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ANDREW J. HAMILTON.