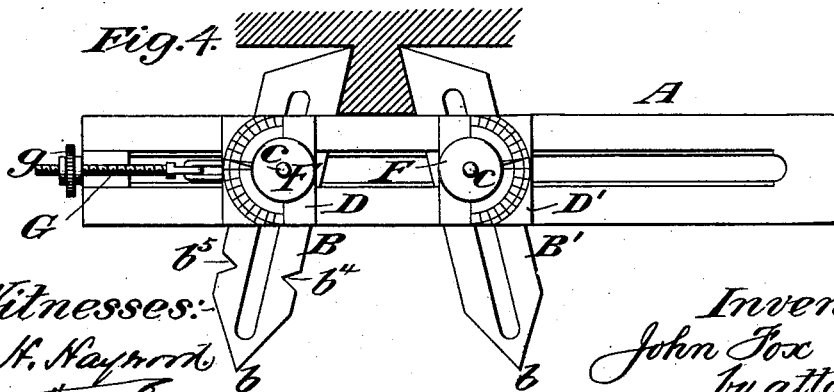
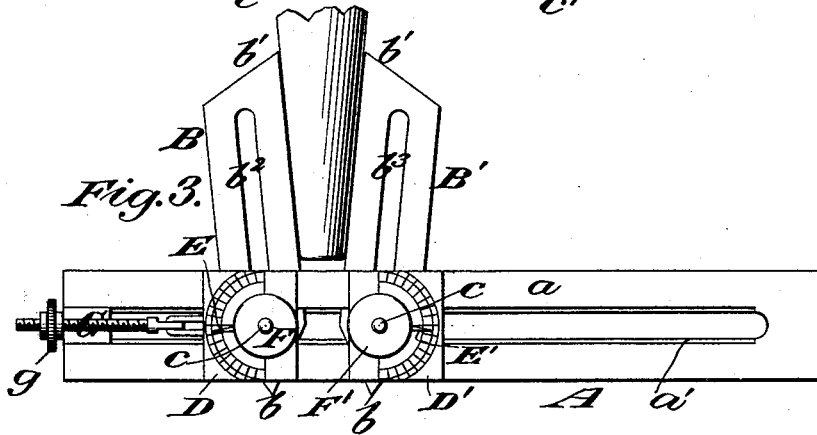
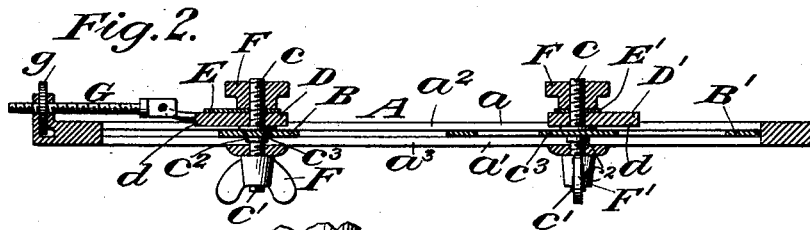
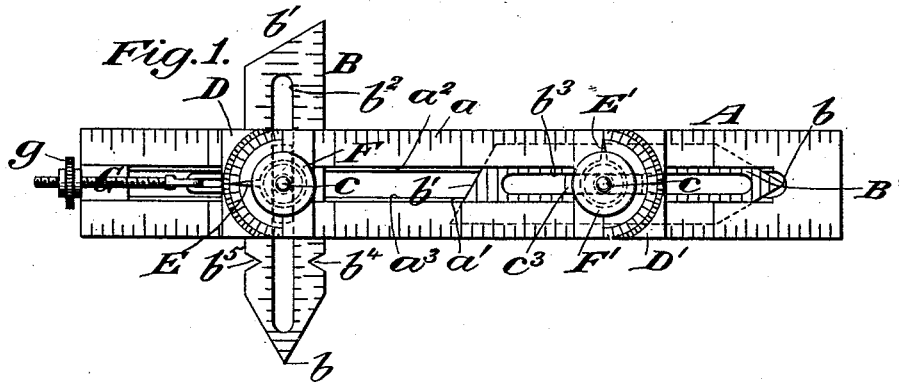


(No Model.)

J. FOX.  
DOUBLE BLADE BEVEL GAGE.

No. 482,888.

Patented Sept. 20, 1892.



Witnesses:  
B. H. Raymond  
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Inventor:  
John Fox  
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# UNITED STATES PATENT OFFICE.

JOHN FOX, OF NEW YORK, N. Y.

## DOUBLE-BLADE BEVEL-GAGE.

SPECIFICATION forming part of Letters Patent No. 482,888, dated September 20, 1892.

Application filed February 25, 1892. Serial No. 422,789. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN FOX, of New York, in the county and State of New York, have invented a new and useful Improvement in Double-Blade Bevel-Gages, of which the following is a specification.

My invention relates to an improvement in double-blade bevel-gages in which arms are secured to the holder so as to have an edge-wise tilting and longitudinal adjustment relative to the holder.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a plan view of the gage, one of the arms being set at right angles to the holder and the other in folded adjustment within the holder. Fig. 2 is a longitudinal transverse section through the gage, the parts being in the position represented in Fig. 1. Fig. 3 shows the application of the gage for purposes of gaging a taper, and Fig. 4 shows its application for gaging a dovetail.

The holder or stock of the gage is represented as a whole by A, and consists in the present instance of two flat plates of metal  $a$  and  $a'$ , united at the ends and spaced apart throughout the greater portion of their length to form a housing for the blades or arms. The plates are provided with elongated slots  $a^2$  and  $a^3$ , the slot  $a^2$  in the plate  $a$  being preferably a little wider than the slot  $a^3$  in the plate  $a'$ .

The arms or blades are represented by B and B'. At one end they are tapered to a point, as shown at  $b$ , forming an angle of about sixty degrees, which is the angle at which lathe-centers are commonly pitched, the said points  $b$  serving to gage the socket for fitting such a lathe-center. When the two arms are brought together, the pitch of their adjacent sides at their points  $b$  is such as to form a recess the sides of which approach each other at an angle of about sixty degrees, and hence such recess will serve to gage the lathe-center itself. The opposite ends  $b'$  of the arms or blades are beveled at a slant of about thirty degrees, so that when brought together they will present a blunt point of about one hundred and twenty degrees. The arms or blades are each provided with an elongated slot, (represented, respectively, by

$b^2$  and  $b^3$ ;) through which they are pivotally secured between the plates  $a$  and  $a'$  of the holder. The opposite edges of the blade B are provided with V-shaped notches  $b^4$  and  $b^5$  for gaging interior and exterior screw-threads.

The spindles which secure the arms or blades to the holder are similar in construction, and each is provided with screw-threads upon its opposite ends. One end of the spindle is represented by  $c$  and the opposite end by  $c'$ . A collar  $c^2$  is formed on the spindle intermediate of its ends and serves as an abutment, against which a straight-faced stop  $c^3$ , supported on the spindle, abuts. The stop  $c^3$  is fixed to the spindle, so that when it is rocked the spindle must be rocked with it. The width of the stop  $c^3$  is such as to fit accurately within the slot in the blade, and when the parts are adjusted for use the said stop is intended to be seated within the slot in the blade, so that when the blade is tilted edge-wise it will rotate the spindle, and hence any part fixed thereto.

Graduated plates D and D' are loosely seated upon the spindle and are provided with tongues  $d$ , projecting from their under sides down into the wider slot  $a^2$  in the plate  $a$  and of such width as to accurately fit within said slot. Such arrangement will permit the plates D D' to slide longitudinally along the holder, but will prevent them from rotating with the spindle.

Pointers E and E' are fixed to rotate with the spindles over the plates D D', and the position of the pointers and the scales on the plates D D' and the arms or blades is such that the inclination of the blade to the holder or stop may be read by the position of the pointer on the scale on the plate D. Thumb-nuts F and F' upon the opposite ends of the spindle serve the former to clamp the pointer and arm in its angular position relative to the holder and the latter to clamp the arm in its longitudinal adjustment lengthwise along the holder.

One of the arms or blades and the parts connected therewith—in the present instance the arm or plate D—is secured to the end of the holder by means of a threaded rod G, on the outer end of which works a thumb-nut  $g$ , by means of which the arm or blade

and parts connected therewith may be bodily slid toward and away from the opposite end of the holder by the turning of the nut on the rod G. In this manner a very precise adjustment of the blade may be effected after it has been brought approximately into the desired adjustment.

The holder may be graduated along one or more of its edges to serve as a measure, and the blades may also be graduated along one or both of their edges, as may be desired.

The uses of this instrument are manifold, and among them it may be observed that the gage acts as a double bevel-gage for measuring accurately the opposite sides of a taper or dovetail. It may also be used as a center-gage, inside and out, and a thread-cutter gage for male and female threads. It may be employed as a square of varying length of blade, a single bevel-gage when one end is closed, a depth-gage, as a calipers, both parallel and taper or one side straight and the other taper, a straight-edge, and a rule.

What I claim is—

1. In combination, a holder, arms or blades secured thereto and having an edgewise-tilting movement, a longitudinal movement, and a bodily movement along the holder, said blades being free to approach into engagement with each other in their bodily movement along the holder, and means for secur-

ing the blades in their several adjustments, substantially as set forth.

2. In combination, a holder, arms or blades secured thereto and having an edgewise-tilting movement, a longitudinal movement, and a bodily movement along the holder, means for securing the blades in their adjustments, and an adjusting device comprising a nut and screw engaged with one of the blade-supports and with the holder for adjusting one of the blades bodily along the holder relatively to the other blade, substantially as set forth.

3. In combination, a holder consisting of two parallel sides fixed together and provided with longitudinal slots, arms or blades, supports for the arms or blades, said supports comprising spindles extending through the slots in the sides of the holder and through the blades, index-hands fixed to move with the blades as the latter are tilted edgewise, clamping-nuts on one side of the holder for locking the blade and index-hand in tilted adjustment, and clamping-nuts on the opposite side of the holder for locking the blades to the holder in their adjustments bodily along the holder, substantially as set forth.

JOHN FOX.

Witnesses:

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