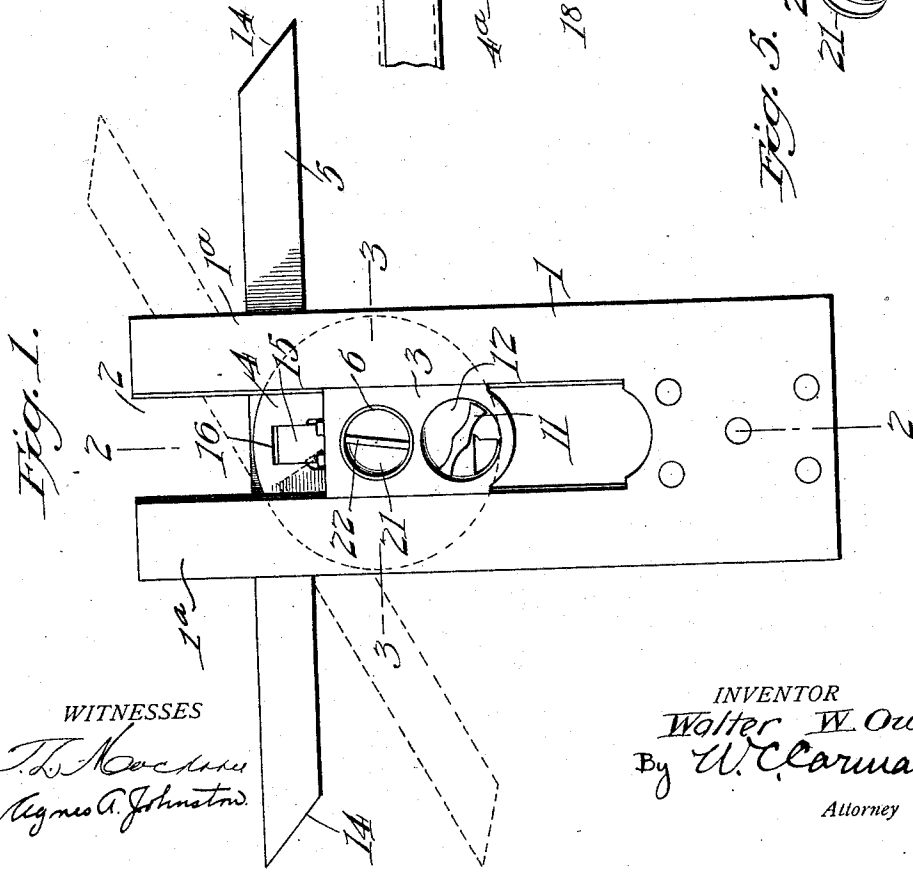
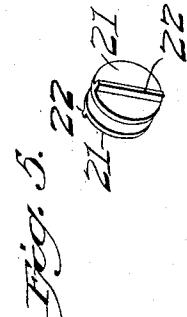
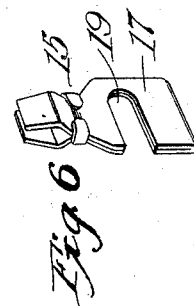
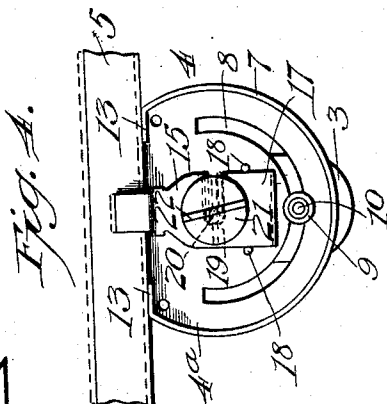
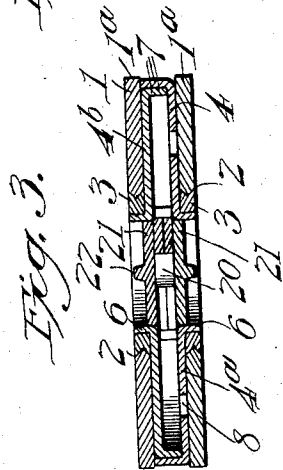
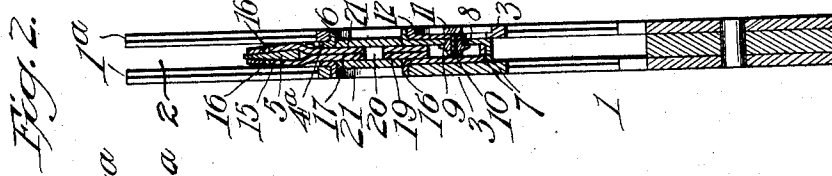


W. W. OWEN.
BEVEL PROTRACTOR.
APPLICATION FILED FEB. 21, 1911.

Patented Jan. 16, 1912.

1,015,242.



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UNITED STATES PATENT OFFICE.

WALTER W. OWEN, OF YOUNGSTOWN, OHIO.

BEVEL-PROTRACTOR.

1,015,242.

Specification of Letters Patent.

Patented Jan. 16, 1912.

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To all whom it may concern:

Be it known that I, WALTER W. OWEN, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Bevel-Protractors, of which the following is a specification.

The present invention relates to certain new and useful improvements in tools, and more particularly to a combined bevel and square embodying novel features of construction whereby the blade can be both shifted longitudinally and swung into any desired angle with relation to the stock, means being provided for locking the blade rigidly in an adjusted position.

The object of the invention is the provision of a combined bevel and square which can be easily and quickly adjusted in the required manner and locked in an adjusted position, which comprises few and inexpensive parts, and which can be readily taken apart or assembled as may be desired.

With these and other objects in view, the invention consists in certain combinations and arrangements of the parts as will more fully appear as the description proceeds, the novel features thereof being pointed out in the appended claims.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a side elevation of a combined bevel and square constructed in accordance with the invention. Fig. 2 is a longitudinal sectional view through the same on the line 2—2 of Fig. 1. Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 1. Fig. 4 is a view of the blade carrying disk with one of the sides thereof removed, Fig. 5 is a detail perspective view of the eccentric member for manipulating the blade engaging clip, and Fig. 6 is a similar view of the blade engaging clip.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Specifically describing the present embodiment of the invention, the numeral 1 designates a stock which may be formed of any suitable material and is shown as having one end thereof bifurcated to provide the spaced

arms 1^a. These arms 1^a are longitudinally slotted at 2 and the edges of the slots are beveled from both sides to provide sharp edges which are slidably received within corresponding grooves in the edges of plates 3. One of the plates 3 is slidably mounted within each of the slotted arms 1^a of the stock and the two plates constitute a slide which can be moved longitudinally upon the stock into any desired position and is held frictionally in an adjusted position. A blade carrying member 4 is pivotally mounted between the plates 3 and has the blade 5 slidably mounted thereon so as to be shifted longitudinally. In the present instance, this blade carrying member 4 has the form of a hollow disk the sides of which are formed with central openings surrounded by outwardly projecting bearing flanges 6 received within corresponding openings in the respective plates 3. The sides 4^a and 4^b of the blade carrying disk 4 are separable and formed with peripheral flanges 7 which telescope with each other when the said blade carrying disk is assembled. The upper side 4^a of the blade carrying disk is formed at one side thereof with a curved slot 8 which is concentric with the central opening in the side and receives the angular outer end of a nut 9 arranged within the blade carrying disk. This nut 9 is engaged by a threaded shank 10 which projects through the adjacent plate 3 where it is provided with a finger piece 11, the said finger piece being arranged within a circular depression 12 in the said plate 3. When this finger piece 11 is turned to loosen the nut 9, the blade carrying disk 4 can be turned upon the bearing flanges 6 as a pivot so as to throw the blade 5 at any desired angle with relation to the stock, while when the finger piece 11 is turned in the opposite direction to tighten the nut 9 the blade carrying disk is locked against movement and the blade held rigidly in an adjusted position.

The blade 5 is mounted to slide through the disk 4 at one side thereof, the peripheral flanges 7 of the respective sides 4^a and 4^b of the disk being cut away to provide a clearance space for the blade. It will also be noted that the ends of the peripheral flange 7 upon the upper side 4^a of the disk are extended inwardly to provide the shoulders 13 against which the blade is designed to be drawn when locked against longitudi-

nal movement. The blade itself has beveled ends 14 and is tapered in thickness from one edge thereof to the opposite edge so that the two faces thereof are inclined laterally with respect to each other. The thicker edge of the blade is arranged adjacent the shoulders 13 and slidably received within a blade engaging yoke or clip 15, the arms of the clip converging toward each other so as to hold the blade against lateral displacement. This clip is received within corresponding openings 16 in the sides 4^a and 4^b of the blade carrying disk 4 and is formed with a shank 17 which is slidable within the hollow disk. The side 4^a of the disk is shown as provided with the inwardly projecting pins 18 which loosely engage opposite sides of the shank 17 and hold the said shank against lateral displacement without in any manner interfering with the free longitudinal movement thereof. It will be obvious that the openings 16 in the sides of the disk perform the same function for the clip 15, so that the clip is free to move longitudinally, but is at the same time held securely against lateral displacement. The shank 17 of the clip is formed with a lateral slot 19 loosely receiving an eccentric pin 20 connecting a pair of circular heads 21 which fit against opposite sides of the shank and are received within the central openings in the sides of the disk. Each of these circular heads is formed with a finger piece 22 which projects outwardly substantially flush with the respective bearing flange 6 and constitutes a means for rotating the circular heads 21 and moving the eccentric pin 20 so as to slide the clip 15 in either direction. When this clip is moved outwardly, the blade 5 is shoved away from the shoulders 13 and can be moved longitudinally through the clip and blade carrying disk into any desired position. However, when the eccentric pin 20 is moved in such a manner as to slide the clip 15 inwardly, the blade 5 is drawn tightly against the shoulders 13 and the converging arms of the clip caused to grip the enlarged base of the blade in such a manner as to hold the blade securely against movement.

It will thus be obvious that the finger 11 constitutes a means for loosening the clamping nut 9 preparatory to rotating the disk for making an angular adjustment of the blade, and also for tightening the nut to lock the disk and blade in an adjusted position. In a somewhat similar manner the finger piece 22 constitutes a means for loosening the blade 5 preparatory to shifting the same longitudinally, and also for tightening the blade to hold it rigidly against movement. A combined bevel and square is thereby provided which is comparatively simple and inexpensive in its construction, and which admits of the blade

being readily adjusted in the required manner and locked in such a position without the use of any tools or like parts.

It will be entirely obvious that should it be found desirable suitable graduations could be applied to the blade and disk for the purpose of enabling distances or angles to be measured thereby and for enabling the blade to be set at any required angle.

It will also be understood from the foregoing description that the device claimed constitutes a practical tool which may be used conveniently by draftsmen, as it lies flat on the surface on either side.

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

1. In a tool of the class described, the combination of a slotted stock, a slide mounted within the stock and movable longitudinally thereof, a blade-carrying disk rotatably supported by the slide, a longitudinally adjustable blade slidably mounted upon the blade-carrying disk, a head journaled within the disk, and means actuated by said head for locking and releasing said blade.

2. A tool of the character described including a pivotally mounted blade carrying member, supporting means for the same, a blade slidably mounted upon the blade carrying member and thicker at one edge than at the opposite edge, a clip engaging the thicker edge of the blade, and an eccentric member mounted upon the blade carrying member and having an operative connection with the clip for moving the same to grip or release the blade.

3. In a tool of the character described, the combination of a stock, a blade carrying member upon the stock, a blade slidably mounted upon the blade carrying member and thicker at one edge than at the opposite edge, a clip engaging the thicker edge of the blade and formed with converging sides, and means for moving the clip for causing the converging sides to grip or release the blade.

4. A tool of the character described including a blade carrying member having an opening therein, a head rotatably mounted within the opening and formed with an eccentric, a blade slidably mounted upon the blade carrying member and thicker at one edge than at the opposite edge, and a slide having an operative connection with the eccentric and formed with a clip engaging the thicker edge of the blade, the said clip having converging sides adapted to grip or release the blade as the slide is moved back and forth.

5. A tool of the character described including a blade carrying member formed with a shoulder, a blade slidably mounted upon the blade carrying member so as to

to bear against the shoulder, the said blade being thicker at one edge than at the opposite edge, a clip engaging the thicker edge of the blade and formed with converging sides, and means for moving the clip to draw the blade against the shoulder and cause the converging sides thereof to grip the blade.

6. A tool of the character described including a pivotally mounted blade carrying member formed with an axial opening surrounded by a bearing flange, supporting means engaging the bearing flange, a blade slidably mounted upon the blade carrying member, a head rotatably mounted within the axial opening, and means actuated by the head for locking or releasing the blade.

7. A tool of the character described including a pivotally mounted blade carrying member formed with an axial opening surrounded by a bearing flange, supporting means engaging the bearing flange, a blade slidably mounted upon the blade carrying member, a head rotatably mounted within the axial opening, a slide formed with blade engaging means, and an operative connection between the slide and the head whereby the slide may be moved to lock or release the blade by rotating the said head.

8. A tool of the character described including a pivotally mounted blade carrying member formed with an axial opening surrounded by a bearing flange, supporting means engaging the bearing flange, a head rotatably mounted within the axial opening and formed with an eccentric, a blade slidably mounted within the blade carrying member, and a clip engaging the blade and having an operative connection with the eccentric of the head to admit of the blade being locked or released by turning the head.

9. A tool of the character described including a hollow blade carrying disk provided in opposite sides thereof with openings surrounded by bearing flanges, supporting means engaging the bearing flanges, heads rotatably mounted within the said openings and connected by an eccentric pin, a blade slidably mounted upon the blade carrying member, and a slide mounted within the blade carrying member and having an operative connection with the eccentric pin, the said slide being provided with means for engaging the blade.

10. A tool of the character described including a hollow blade carrying member provided in opposite sides thereof with openings surrounded by bearing flanges, one of the said sides being formed with a curved slot concentric with the before mentioned opening, supporting means engaging the bearing flanges, a clamping screw operating within the curved slot and serving as a means for locking the blade carrying mem-

ber in an adjusted position, a blade slidably mounted within the blade carrying member, heads rotatably mounted within the openings and connected by an eccentric pin, a slide mounted within the blade carrying member and having an operative connection with the eccentric pin, the said slide being formed with a clip adapted to engage the blade.

11. In a tool of the character described, the combination of a stock, a slide mounted upon the stock and formed with an opening, a blade carrying disk formed with an opening surrounded by a bearing flange received within the opening of the slide, a blade slidably mounted upon the blade carrying disk, a head journaled within the opening of the disk, and means actuated by the head for gripping or releasing the blade.

12. In a tool of the character described, the combination of a stock, a slide mounted upon the stock and formed with an opening, a blade carrying disk formed with an opening surrounded by a bearing flange received loosely within the opening of the slide, the said blade carrying disk being also formed with a curved slot, a threaded stem extending through the slide and the curved slot, a nut cooperating with the threaded stem for clamping the blade carrying disk against movement, a blade mounted upon the blade carrying disk, a head rotatably mounted within the opening of the disk, and means actuated by the head for locking or releasing the slide.

13. In a tool of the character described, the combination of a stock formed of a bifurcated portion, a plate slidably mounted upon each arm of the said bifurcated portion, a hollow disk journaled between the two plates, means for locking the disk against rotary movement, a blade slidable through the hollow disk, and means within the hollow disk for locking the blade against movement.

14. In a tool of the character described, the combination of a stock formed with a bifurcated portion, a plate slidably mounted upon each arm of the said bifurcated portion, the said plates being formed with corresponding openings, a hollow disk journaled between the plates, opposite sides of the said hollow disk being formed with openings surrounded by bearing flanges received within the openings of the plates, means for locking the hollow disk against rotary movement, a blade slidable through the hollow disk, heads rotatably mounted within the openings in the sides of the hollow disk, an eccentric member connecting the heads, and means actuated by the said eccentric member for gripping or releasing the plate.

15. In a tool of the character described, the combination of a stock formed with a

bifurcated portion, the arms of the said
bifurcated portion being slotted, plates
mounted within the said slotted arms and
formed with corresponding openings, a hol-
5 low disk journaled between the plates, the
sides of the disk being formed with open-
ings surrounded by bearing flanges which
are received within the openings of the
plates, one side of the disk being also formed
10 with a curved slot, a threaded stem project-
ing from one of the plates through the
curved slot, a clamping nut cooperating with
the said threaded stem to lock the disk
against rotary movement, a blade slidable

through the disk and thicker at one edge 15
thereof than at the opposite edge, a clip en-
gaging the thicker edge of the blade and
formed with a shank, heads rotatably
mounted within the openings in the sides
of the disk, and an eccentric member con- 20
necting the said heads and engaging the
shank of the clip.

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

WALTER W. OWEN.

Witnesses:

AGNES A. JOHNSTON,

S. L. CLARK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents
Washington, D. C."
