

No. 695,110.

C. F. MUELLER.
BEVEL.

Patented Mar. 11, 1902

(Application filed July 22, 1901.)

(No Model.)

Fig. 1.

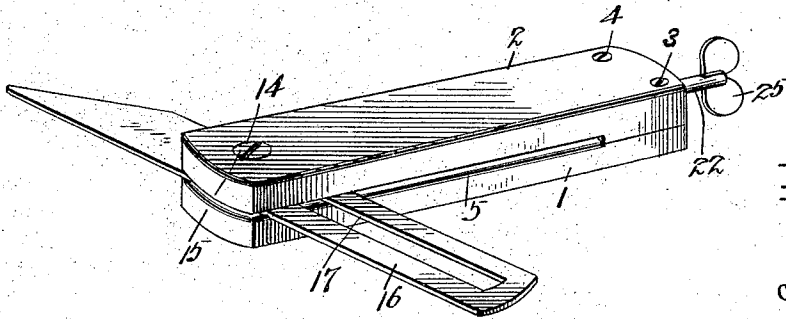


Fig. 6.

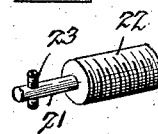


Fig. 2.

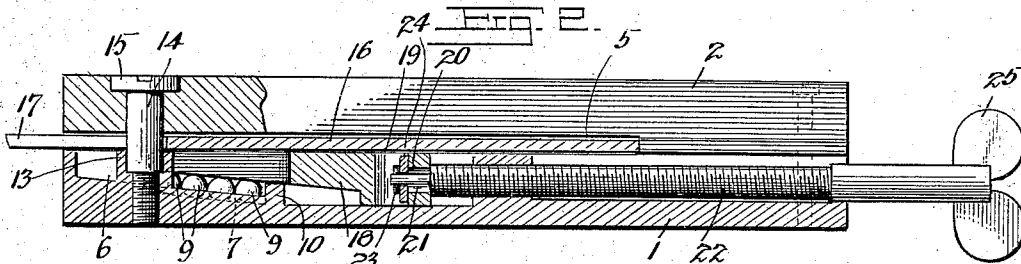


Fig. 3.

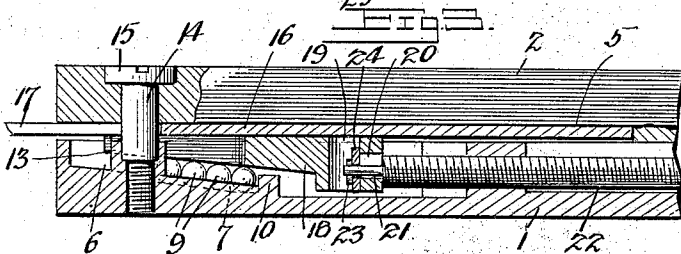


Fig. 5.

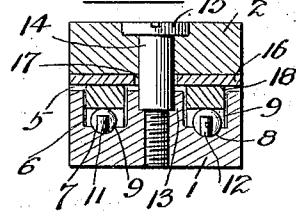


Fig. 4.

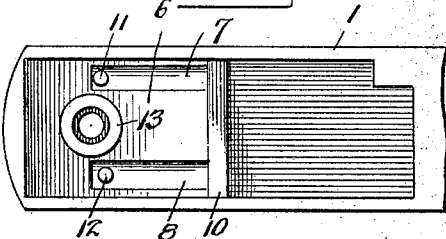
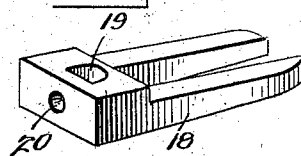


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES F. MUELLER, OF ELIZABETH, NEW JERSEY.

BEVEL.

SPECIFICATION forming part of Letters Patent No. 695,110, dated March 11, 1902.

Application filed July 22, 1901. Serial No. 69,304. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. MUELLER, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented a new and useful Bevel, of which the following is a specification.

This invention relates to bevels employed by mechanics; and it consists in the construction, combination, and arrangement of parts, as hereinafter shown and described, and specifically pointed out in the claims.

In the drawings illustrative of the invention, Figure 1 is a perspective view of the device complete. Fig. 2 is a longitudinal sectional elevation with the locking mechanism withdrawn, and Fig. 3 is a similar view with the locking mechanism extended. Fig. 4 is a detail of a portion of the base-plate. Fig. 5 is a transverse section of Fig. 3. Fig. 6 is a perspective view of the inner or coupling end of the operating screw-bolt. Fig. 7 is perspective view of the wedge-shaped locking-block detached.

This invention relates to implements known as "bevels" used by carpenters, machinists, and other mechanics, and consists of a stock portion and a blade portion, the latter pivoted adjustably in one end of the stock and adapted to be "locked" in any desired position therein.

The stock is formed of two main members 1 2, secured rigidly together at one end, as by screws 3 and 4, with a transverse slot 5 between the two members extending nearly to the ends supported by the screws 3 and 4.

For the purpose of clearness I will designate the end of the stock held by the screws 3 and 4 as the "rear" end and the opposite end the "front" end.

Formed in the member 1, extending inward from the front end, is a recess 6, having its bottom inclined inward and downward and provided with grooves 7 8 (see Figs. 4 and 5) to support a series of two rows of anti-friction-balls 9, the lower ball of each row engaging a transverse rib 10, which forms a stop to the balls at the lower ends of the grooves, while pins 11 and 12 likewise form stops in the upper ends of the grooves.

Rising from the bottom of the recess 6, near the upper end of the member 1, is a stud 13, into which a screw stud or bolt 14 is tapped,

as shown, and extending through the member 2 and provided with a head 15 to form a means for securing the front ends of the members together.

16 is the blade of the bevel, formed with a slot 17, adapted to be engaged by the shank of the screw 14, as shown in Figs. 2, 3, and 5, by which means the blade 16 is pivotally secured in the stock. The blade is of the ordinary construction and is adapted to be adjusted to any degree within the limit of the slot 17.

Fitting in the recess 6 and slidable therein over the balls 9 is a block 18, bifurcated to fit on both sides of the stud 13 and inclined reversely to the incline of the recess 6 and its grooves 7 and 8 and with its inner end extended and provided with a vertical cavity 19 and longitudinal cavity 20, the latter passing through the end of the block, as shown.

Fitting through the cavity 20 is the inner end 21 of a screw-rod 22 and secured in place therein by a transverse pin 23 and washer 24, the pin preferably screw-threaded into the end 21. The screw-rod 22 passes outward through a longitudinal cavity 24 in the member 1 of the stock and is provided on its outer end outside of the stock with wings 25, by which it may be revolved.

Within the cavity 24 is a stud 26, through which the screw-rod is tapped, as shown.

The cavity 20 in the block 18 is considerably larger than the end 21, so that a considerable degree of flexibility is left between the block 18 and the screw-rod. By this arrangement when the screw-rod is turned to the right the block 18 will be forced forward between the bearing-balls 9 and the blade 16, forcing the latter against the inner surface of the member 2 and firmly locking the blade and holding it immovably in position after it has been adjusted to the desired angle.

I claim several very important advantages by this construction, among others the following: By means of the anti-friction-balls 9 the friction between the moving parts is greatly decreased, and consequently the blade can be subjected to a much stronger "grip" than where opposing inclined surfaces of metal only are employed to form the lock, as in previous structures. The balls also by decreasing the pressure greatly reduce the

wear between the opposing surfaces, and thus add materially to the "life" of the implement. By reason of the enlarged cavity 20, whereby the block 18 is free to move vertically independently of the screw-rod end 21, the vertical movement of the block is uniform, both ends moving in perfect unison, so that no binding or irregular strains can take place between the parts, as is frequently the case in other structures of this class. I claim, therefore, that a device constructed according to my improved methods will act with greater ease and precision and be more durable and less expensive than any prior device of the same character.

What I claim as new is—

1. In a device of the class described, the combination of a stock formed with a transverse slot therethrough and with an internal inclined cavity, a blade pivotally arranged in said slot, an inclined block slidably disposed in said recess in engagement with said blade, antifriction-rollers between said block and the inclined surface of said recess, and means whereby said block may be forcibly moved longitudinally of said stock, substantially as described.

2. In a device of the class described, the combination of a stock formed of two members united at one end and with a transverse cavity between said members, an inclined cavity in one of said members, a blade pivotally disposed in said slot, a block slidably disposed in said cavity and with an inclined surface, antifriction-balls between said inclined surfaces, and means for adjusting said block longitudinally in said cavity and said recess, substantially as described.

3. In a device of the class described, the combination of a stock formed with a transverse open slot therethrough, a blade pivotally secured in said slot, a recess in said stock near its open end, inclined grooves in said recess longitudinally of said stock, a series of

antifriction-rollers supported in said grooves, a block having one side inclined corresponding to said grooves and engaged by said balls, and means for forcibly adjusting said block longitudinally of said stock, substantially as described.

4. In a device of the class described, the combination of a stock formed of two members united at one end, a transverse open slot between said members, a recess in one of said members and having an inclined bottom, a block having an inclined surface and disposed in said recess, a blade pivotally mounted in said recess and engaged by said block, a longitudinal cavity in said block, and a screw-rod movably connected in said cavity and screw-threaded in one of said stock members, whereby when said screw-rod is actuated said block is moved diagonally and bodily in said recess and without binding or cramping, substantially as described.

5. In a device of the class described, the combination of a stock formed of two members united at one end and with a transverse slot between said members and with internal inclined recess in one of said members, a blade disposed in said slot and pivotally united to said members, an inclined block in said recess in engagement with said blade, antifriction-balls between the inclined surfaces of said block and recess, a cavity in the larger end of said block, a screw-rod screw-threaded in said stock and secured movably in said cavity, whereby said block may forcibly move diagonally and bodily in said recess, independently of said screw-rod, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES F. MUELLER.

Witnesses:

HENRY R. BRANNSDORF,
ROBERT L. DAY, Jr.