June 28, 1932. M. C. ELDREDGE 1,865,242

CUTTING OR MARKING TOOL

Filed Oct. 11, 1930

Fig. 5.

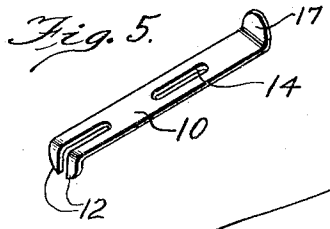


Fig. 1.

Fig. 2.

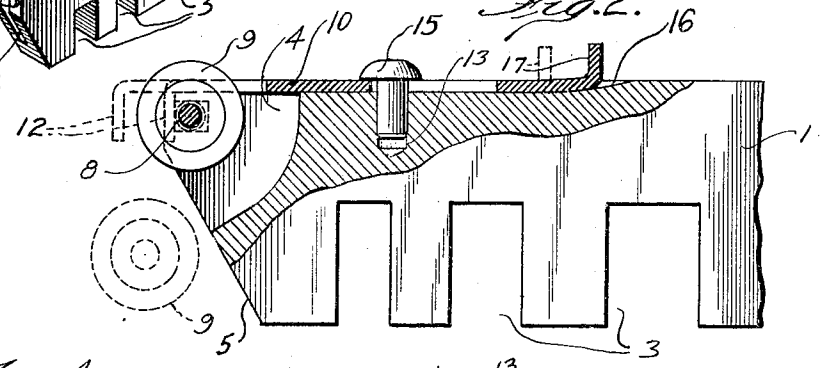
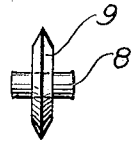


Fig. 4.



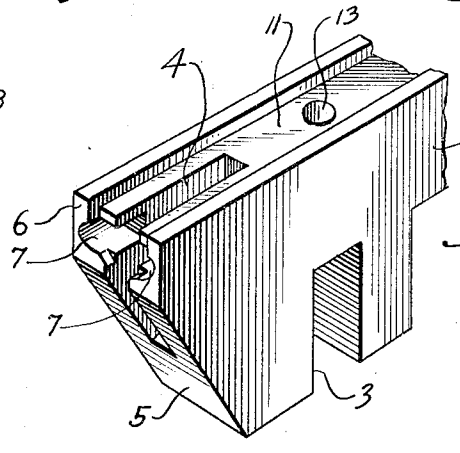


Fig. 3.

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UNITED STATES PATENT OFFICE

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CUTTING OR MARKING TOOL

Application filed October 11, 1930. Serial No. 488,030.

My present invention relates to cutting or marking tools, and particularly to that type of tool used for marking or cutting glass or the like, and has for one of its objects an improved mounting for the cutting wheel which is common to this type of instrument.

More particularly my invention has to do with the means for retaining the cutting wheel in place on the head of the cutting tool. In prior known devices, one of the biggest objections has been that the cutting wheel was either mounted irremovably upon the cutting head or the means for holding the same detachably on the head was such that during the normal use of the cutting tool the retaining means might accidentally permit the cutting wheel to become disengaged from its mounting.

In the present invention the cutting wheel is so mounted and retained in its mounting that during the normal operation, the cutting wheel will not become disengaged from the head of the cutting tool.

More particularly my invention has for its object the provision of a sliding catch or sliding retaining means for holding the cutting tool in place.

Other objects of this invention will appear hereinafter as the description thereof proceeds, the novel features and combinations being set forth in the appended claims.

In the drawing—

Fig. 1 is an isometric view of a glass cutting tool embodying my invention;

Fig. 2 is an elevational view of one side of the cutting tool with parts of the cutting tool in section for the sake of clearness;

Fig. 3 is an isometric view of the cutting tool head with the retaining catch and cutting wheel removed;

Fig. 4 is an elevational view of the cutting wheel adapted to be mounted on the cutting head; and

Fig. 5 is an isometric view of the sliding catch used to hold the cutting wheel in place on the head.

Referring now to the drawing, it will be noted that the cutting tool comprises a head 1 and a handle portion 2, the former being provided with the notches 3 of varying widths, these notches being for the purpose of straddling the edge of a piece of glass to enable the glazier to break off the edge of the glass after the cut has been made.

The head 1 is also provided with a slot 4 which communicates with the upper surface thereof and also with the forward tapered surface 5 and vertical surface 6 as best illustrated in Figs. 2 and 3.

On each side of the slot 4 are provided the recesses 7 which are adapted to receive the opposite ends of the pivot 8 upon which is mounted the circular cutting tool 9. It will be noted that the ends of the pivot 8 are slightly swaged in order to prevent the cutting wheel 9 from becoming disengaged from the pivot, the cutting wheel being preferably rotatably mounted on the pivot 8 although it is entirely within the scope of this invention to have the pivot 8 rigid with the cutting wheel 9 and have the pivot turn in its bearings rather than have the cutting wheel turn on the pivot.

It will be noted from an inspection of Fig. 2 as well as Fig. 3 that if the forward sides of the recesses 7 are closed, that the cutting wheel will be retained within the head and prevented from displacement therefrom. In order to accomplish this result I provide a retaining member 10 which slides in the recess 11 in the upper surface of the head 1 and has the downwardly projecting prongs 12 which are adapted to lie over the open sides of the recesses 7 when the retaining member is in the full line position shown in Fig. 2. The retaining member or sliding catch 10 is provided with a slot 14 through which a rivet 15 extends and this rivet is received within the recess 13 in the upper side of the head, the rivet being held in place by friction. It will be understood, of course, that if I so desire, I may use a screw in place of the rivet 15, and in that event the recess 13 will be a tapered opening into which the screw is threaded.

The recess 11 is of substantially uniform depth except at one end thereof. This end, which is the right-hand end shown in Fig. 2, is slightly curved or sloping as at 16 so that as the sliding catch is brought into its full

line position shown in Fig. 2 by means of the operating piece 17, an upward thrust will be imparted to the sliding catch thereby causing additional friction between the head of the rivet 15 and the upper surface of the sliding catch 17. With this arrangement it will be seen that when the catch 17 is in the position shown in full lines in Fig. 2, an additional frictional means prevents accidental displacement of the sliding catch although the sliding catch has a relatively free sliding movement during most of the extent of its travel.

As will be noted in Fig. 2, the projections 12 which cover the open sides of the recesses 7 lie substantially flush with the surface 6, and that the upper side of the sliding catch 10 is substantially flush with the upper surface of the head. Since the projections 12 are flush with the surface 6 when in operative position, it will be apparent that these projections cannot accidentally be engaged, and therefore there is less possibility that the slide 10 will be moved to its inoperative position during the use of the tool. Of course if the sliding catch is moved to an inoperative position, the cutting wheel 9 may fall out of the slot 4, or readily removed therefrom.

The recesses 7 do not communicate with any of the surfaces of the cutting head except the surface 6 and the surfaces of the slot 4. Therefore endwise displacement of the pivot 8 when in the recesses is prevented.

In the normal operation of the cutting tool, the force is usually applied in such manner that the pivot 8 is forced against one of the rigid walls of each of the recesses 7 and no strain is placed upon the sliding catch, the sliding catch merely preventing the accidental displacement of the cutting wheel and preventing its falling out of the slot under the force of gravity.

It will be borne in mind that one of the important features of this invention is the provision of recesses for retaining the pivot in place, the rigid walls of which prevent movement of the pivot during the normal operation of the device.

Obviously other changes may be made in the construction and arrangement of the various parts without departing from the spirit of this invention or the scope of the appended claims.

Having thus fully described two embodiments of my invention, what I desire to secure by Letter Patent of the United States is:

1. In a cutting tool, the combination of a head having a slot therein, open sided recesses having their open sides communicating with one face of said head, a cutting tool, a pintle on which said tool is mounted, said recesses being adapted to receive said pintle, a locking member slidably mounted on another face of said head and having means slidable therewith in a direction at a substantial angle to said first face for covering the open sides of said slot when said locking member is in one position of adjustment.

2. A cutting tool comprising a head having a slot for receiving a pintle, a cutting wheel mounted on said pintle, a groove in said head, a member separate from said pintle slidable in said groove and guided thereby having means thereon adapted to overlie said pintle and prevent removal of said pintle from said slot, and means for retaining said member in said last mentioned position comprising means for increasing the frictional resistance offered to the movement of said slidable member at the operative pintle retaining position of said member.

3. In a cutting tool, the combination with a member having a head portion, a handle portion integral with said head portion, said head portion having a slot therein communicating with the end face of said head and also with an adjacent face, recesses in said head portion communicating with said slot and said first mentioned face, a pintle in said recesses and extending across said slot, a cutting wheel mounted on said pintle, and means slidable in a direction perpendicular to said first face for retaining said pintle in said recesses, said retaining means comprising a member slidable in a direction transversely to the axis of said pintle and having a portion thereof adapted to lie over said pintle to retain said pintle in said recesses.

4. A glass cutting tool comprising a member having a bifurcated end, recesses in each portion of said bifurcated end in alinement with each other and communicating with the same outer face of said member so as to receive a pintle, a pintle having a cutting wheel thereon, removably mounted in said recesses with the said wheel lying in the space between the portions of said bifurcated ends, and a member slidably mounted on said first mentioned member in a direction transversely to said pintle and at a substantial angle to said face having projections thereon adapted to overlie said recesses to prevent removal of said pintle, but being movable to a position away from said recesses while remaining opposed thereto to permit simultaneous bodily removal of said pintle and wheel.

5. A glass cutting tool comprising a head having a pintle receiving recess closed at the ends thereof to prevent endwise displacement of a pintle placed thereon but being open at the side to receive said pintle, said head having a slot therein cutting said recess transversely and communicating with the portions thereof, a pintle removably mounted in said recess, a cutting wheel on said pintle adapted to revolve in said slot, and a slidable member slidable bodily in a direction at a substantial angle to said side for closing the side of said recess through which said pintle is adapted to be received.

6. A glass cutting tool comprising a head having a pintle receiving recess closed at the end thereof to prevent endwise displacement of a pintle placed thereon but being open at the side to receive said pintle, said head having a slot therein cutting said recess transversely and communicating with the portions thereof, a pintle removably mounted in said recess, a cutting wheel on said pintle adapted to revolve in said slot, and a slidable member separate from said pintle for closing the side of said recess through which said pintle is adapted to be received, said slidable member being slidable on a face of said head other than the face with which said recess communicates and having projections overlying said open side of said recess when said slidable member is in one position of adjustment.

7. In a cutting tool, the combination with a member comprising a head and a handle, a groove in one face of said head, a catch slidable in said groove, a headed member for retaining said catch in said groove, a slot in said head for receiving a cutting tool, open sided bearings for receiving a pintle, a pintle removably mounted in said bearings but prevented from endwise displacement therein, and extensions on said catch for covering the open sides of said bearings to retain said pintle therein, said cutting tool being mounted on said pivot.

8. In a cutting tool, the combination with a head, a slot in said head adapted to rotatably receive a cutting wheel, recesses in said head communicating with said slot and with one outer surface of said head, a pivot, a cutting wheel mounted on said pivot, said pivot and cutting wheel being simultaneously movable into said recesses and slot respectively, said pivot being movable into said recesses through the sides thereof which communicate with said face, a member separate from said pivot slidably mounted on said head elsewhere than on said face and being movable in a direction substantially parallel to the direction in which said pivot is moved when being inserted into said recesses, retaining means on said slidable member adapted to over-lie said pivot on the side thereof toward said face when said slidable member is in one position, said slidable member being movable to another position to free said pivot from said recesses.

9. A device as claimed in claim 8 in which the slidable member has a friction retaining means operable to increase the frictional resistance to slidable movement of said slidable member as said slidable member is moved into a position such that the retaining means thereon over-lies said pivot.

10. In a cutting tool, the combination with a head, a slot communicating with one face of said head, recesses on opposite sides of said slot communicating with said slot and with said face respectively, a member slidable on said head elsewhere than on said face, retaining means on said slidable member movable in a direction substantially to and from said face as said member slides on said head, a pivot mounted in said recesses, and a cutting wheel mounted on said pivot, said retaining means being adapted to over-lie said pivot and prevent its removal from said recesses when said slidable member is in one position and adapted to lie a sufficient distance away from said face in another position of adjustment of said slidable member to permit removal of said pivot from said recesses.

11. In a cutting tool, the combination with a head, a slot communicating with one face of said head, recesses on opposite sides of said slot communicating with said slot and with said face respectively, a member slidable on said head elsewhere than on said face, retaining means on said slidable member movable in a direction substantially to and from said face as said member slides on said head, a pivot mounted in said recesses, a cutting wheel mounted on said pivot, said retaining means being adapted to over-lie said pivot and prevent its removal from said recesses when said slidable member is in one position and adapted to lie a sufficient distance away from said face in another position of adjustment of said slidable member to permit removal of said pivot from said recesses, and friction means for retaining said slidable member in the adjusted position in which the retaining means lies over said pivot.

12. In a cutting tool, the combination with a head, a slot communicating with one face of said head, recesses on opposite sides of said slot communicating with said slot and with said face respectively, a member slidable on said head elsewhere than on said face, retaining means on said slidable member movable in a direction substantially to and from said face as said member slides on said head, a pivot mounted in said recesses, a cutting wheel mounted on said pivot, said retaining means being adapted to over-lie said pivot and prevent its removal from said recesses when said slidable member is in one position and adapted to lie a sufficient distance away from said face in another position of adjustment of said slidable member to permit removal of said pivot from said recesses, and yielding means for retaining said slidable member in the adjusted position in which the retaining means lies over said pivot.

13. In a cutting tool, the combination with a head, a slot communicating with one face of said head, recesses on opposite sides of said slot communicating with said slot and with said face respectively, a member slidable on said head elsewhere than on said face, retaining means on said slidable member movable in a direction substantially to and from said face as said member slides on said head, a pivot mounted in said recesses, a cutting wheel mounted on said pivot, said retaining

means being adapted to over-lie said pivot and prevent its removal from said recesses when said slidable member is in one position and adapted to lie a sufficient distance away from said face in another position of adjustment of said slidable member to permit removal of said pivot from said recesses, and friction means for retaining said slidable member in the adjusted position in which the retaining means lies over said pivot, said retaining means forming a forked extension on said slidable member for receiving the cutting wheel and supporting the same by the engagement of said pivot with said forked extension on said slidable member to thereby facilitate the insertion of said cutting wheel into said slot and said pivot into said recesses.

14. In a cutting tool, the combination with a member comprising a head, a groove in said head, a catch slidable in said groove, means for retaining said catch in said groove, a slot in said head for receiving a cutting tool, open sided bearings for receiving a pintle, a pintle removably mounted in said bearings but prevented from end-wise displacement therein, and extensions on said catch for over-lying said pintle to retain said pintle in said recesses, said cutting tool being mounted on said pivot.

In testimony whereof I have signed my name to this specification on this 6th day of October A. D. 1930.

MURRAY C. ELDREDGE.