No. 824,275. PATENTED JUNE 26, 1906.

B. BANNISTER.

TOOL HOLDER.

APPLICATION FILED OCT. 20, 1905.

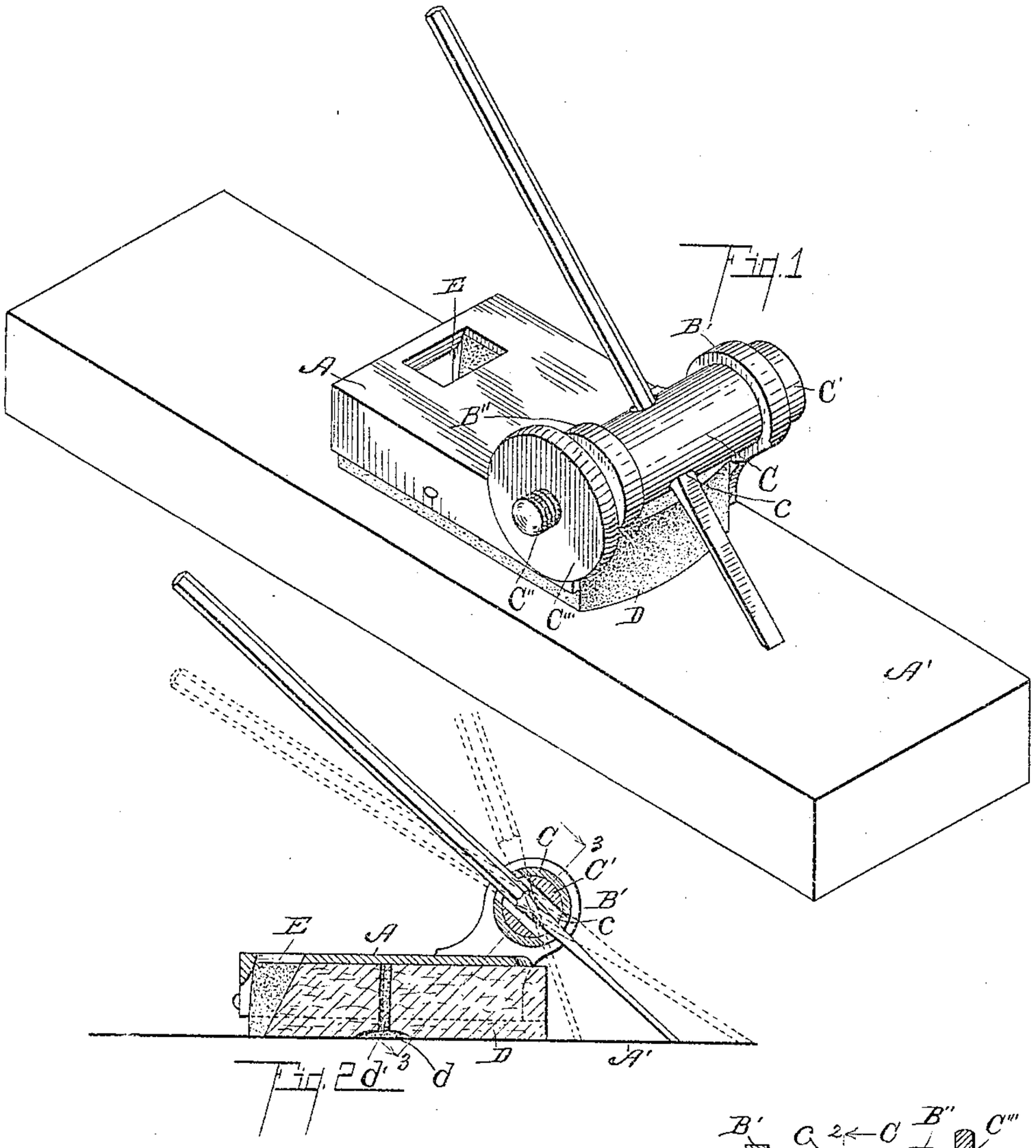

Fig. 1

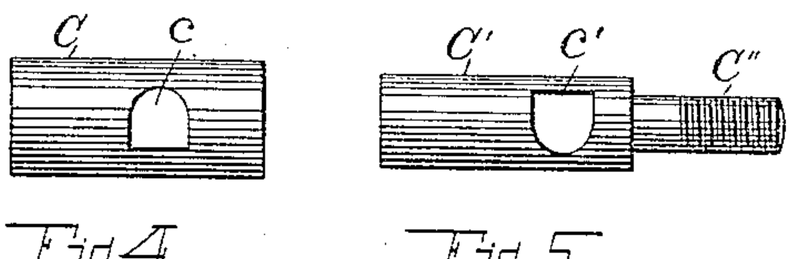

Fig. 4

Fig. 5

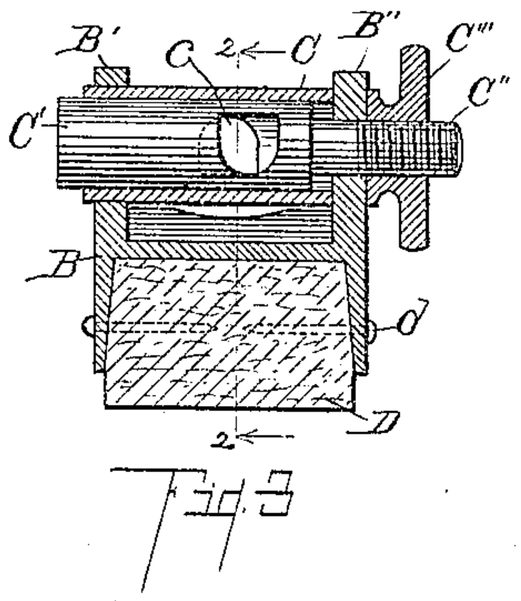

Fig. 3

Witnesses:

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UNITED STATES PATENT OFFICE.

BURR BANNISTER, OF KALAMAZOO, MICHIGAN.

TOOL-HOLDER.

No. 824,275. Specification of Letters Patent. Patented June 26, 1906.

Application filed October 20, 1905. Serial No. 283,658.

To all whom it may concern:

Be it known that I, BURR BANNISTER, a citizen of the United States, residing at Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Tool-Holders, of which the following is a specification.

This invention relates to improvements in tool-holders for honing or grinding tools. It is particularly adapted for use in grinding dentists' or engravers' tools and the like or tools requiring perfect and delicate cutting edges.

The objects of this invention are, first, to provide an improved tool-holder for grinding or honing tools by the use of which a perfect cutting edge of any angle desired may be secured; second, to provide an improved tool-holder for grinding tools which may be adjusted for use in sharpening a large variety of tools, producing the particular kind and angle of cutting edge required; third, to provide an improved tool-holder for grinding tools which is adapted to hold the tool in a manner to produce the desired cutting edge and at the same time keep the hone or oil-stone properly oiled and cleaned; fourth, to provide an improved tool-holder for use in grinding tools which may be used in grinding a large variety of tools and at the same time one that is simple to use and economical to produce.

Further objects and objects relating to structural details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective of my improved tool-holder, the same being illustrated in connection with an oil-stone or hone and with a tool in position to show the relation of the parts in operation. Fig. 2 is a longitudinal section taken on a line corresponding to line 2 2 of Fig. 3, a tool being shown in position therein and two adjustments for it being indicated by dotted lines. Fig. 3 is a cross-section taken on line 3 3 of Fig. 2, showing details of the tool-clamping means. Figs. 4 and 5 are views of the members C and C′ of the tool-clamp.

In the drawings the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the drawings, A is a downwardly-opening shell-like frame or body which is preferably stamped up from sheet metal. The bearing-shoe D is secured to the under side of this frame, and when the device is in use this bearing-shoe rests upon the hone or stone, as A′. The bearing-shoe D is preferably formed of a piece or block of felt. This block is saturated with lubricant and when in use serves to keep the stone properly lubricated and cleaned. I preferably provide the block D with a centrally-arranged cavity *d*, which serves to collect the grit and the like from the face of the stone as the holder is moved back and forth across the same. From this cavity is an inwardly-extending oil-hole *d*′. By this means the block or shoe can be more thoroughly and quickly saturated with the lubricant. Owing to the elasticity or cushion action of the shoe, it perfectly adapts itself to the hone. It also enables very delicate manipulation in grinding or sharpening, as, when desired, the tool may be pressed against the stone very firmly for rapid grinding or held very lightly thereto for delicate or finishing work, and at the same time the tool carried thereby is always properly guided. The pressure exerted to hold the device to the hone in grinding forces sufficient oil to the block to properly oil the hone. As before stated, the movement of the holder over the hone thoroughly cleans the same and collects the free matter on the surface. This keeps the hone perfectly clean and properly oiled, so that it does not become gritty or gummy and under ordinary conditions requires no wiping or other cleaning prior to or after using.

On the frame A are upwardly-projecting supports B′ and B″ for the tool clamp or rest. The tool clamp or rest consists of an inner member C′, having a transverse hole *c*′ therethrough and a threaded extension C″ at one end. This threaded extension is arranged through the support B″ and is provided with a clamping-nut C‴, as clearly appears from the drawings. By this means the inner clamping member C′ can be adjusted longitudinally.

Upon this member C′ is a sleeve-like member C, having a transverse tool-opening *c* therethrough, which is adapted to be brought into register with the opening *c′* of the member C′. The member C is thus revolubly supported, and its end bears against the support B″, so that the inner member C′ may be moved relatively thereto to clamp the tool inserted through the openings *c* and *c′*. It is evident that with the parts thus arranged a tool may be adjusted to any position desired to secure the proper angle to its cutting-point.

This holder is adapted to a great variety of tool-shanks. As certain tools require that they should be ground at one angle and other tools at another, it is impracticable to give fixed rules for the adjustment; but a workman of average skill will readily adjust the holder to his particular requirements.

An opening E is formed through the frame A at the end opposite to the tool-clamp, through which the tool may be inserted when it is desired merely to sharpen the same slightly. It is found that in practice this is a convenience, and the skilled operator is able to hold the tool in this manner quite satisfactorily.

While I prefer that the tool D be formed of a block of felt, as described, there are numerous fibrous yielding materials which may be substituted therefor and satisfactory results be secured.

I have illustrated and described my improved tool-holder in the form preferred by me on account of its structural simplicity and convenience in manipulation. I am aware, however, that it is capable of very considerable variation in structural details without departing from my invention.

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

1. The combination of a frame; a bearing-shoe for said frame, formed of a block of fibrous material, said block having a cavity in its bearing-face and an oil-hole extending inwardly from said cavity; a tool-holder consisting of an inner member having a transverse tool-opening therethrough and having a threaded portion at one end; a support on said frame through which the threaded end of said inner member is arranged; an outer member having a transverse tool-opening therethrough, sleeved upon said member, arranged to rest against the support for said inner member; and a clamping-nut for said inner member, for the purpose specified.

2. The combination of a frame; a bearing-shoe for said frame formed of a block of fibrous material, said block having a cavity in its bearing-face; a tool-holder consisting of an inner member having a transverse tool-opening therethrough and having a threaded portion at one end; a support on said frame through which the threaded end of said inner member is arranged; an outer member, having a transverse tool-opening therethrough, sleeved upon said inner member, arranged to rest against the support for said inner member; and a clamping-nut for said inner member, for the purpose specified.

3. The combination of a frame; a bearing-shoe for said frame formed of a block of fibrous material; a tool-holder consisting of an inner member having a transverse tool-opening therethrough and having a threaded portion at one end; a support on said frame through which the threaded end of said inner member is arranged; an outer member, having a transverse tool-opening therethrough, sleeved upon said inner member, arranged to rest against the support for said inner member; and a clamping-nut for said inner member, for the purpose specified.

4. The combination of a frame; a bearing-shoe therefor of fibrous material; a tool-holder consisting of a clamping member having a tool-opening therethrough and having a threaded portion; a clamping-nut for said member; a support on said frame through which the threaded portion of said member is arranged; and a clamping member to which said first member is relatively adjustable, for the purpose specified.

5. The combination of a frame; a bearing-shoe therefor of fibrous material; a tool-holder consisting of an adjustable clamping member, having a tool-opening therethrough; and a member to which said first member is relatively adjustable, coacting therewith in clamping a tool, for the purpose specified.

6. The combination of a frame; a bearing-shoe therefor of fibrous material, having a cavity in its bearing-face; and a tool-holder on said frame, for the purpose specified.

7. The combination with a frame, of a shoe therefor of fibrous material, and a tool rest or holder carried by said frame, for the purpose specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

BURR BANNISTER. [L. S.]

Witnesses:

W. L. BANNISTER.

OTIS A. EARL.