No. 725,019. PATENTED APR. 14, 1903.

J. ARMSTRONG.

TOOL HOLDER.

APPLICATION FILED MAY 29, 1902.

NO MODEL.

Fig. 1.

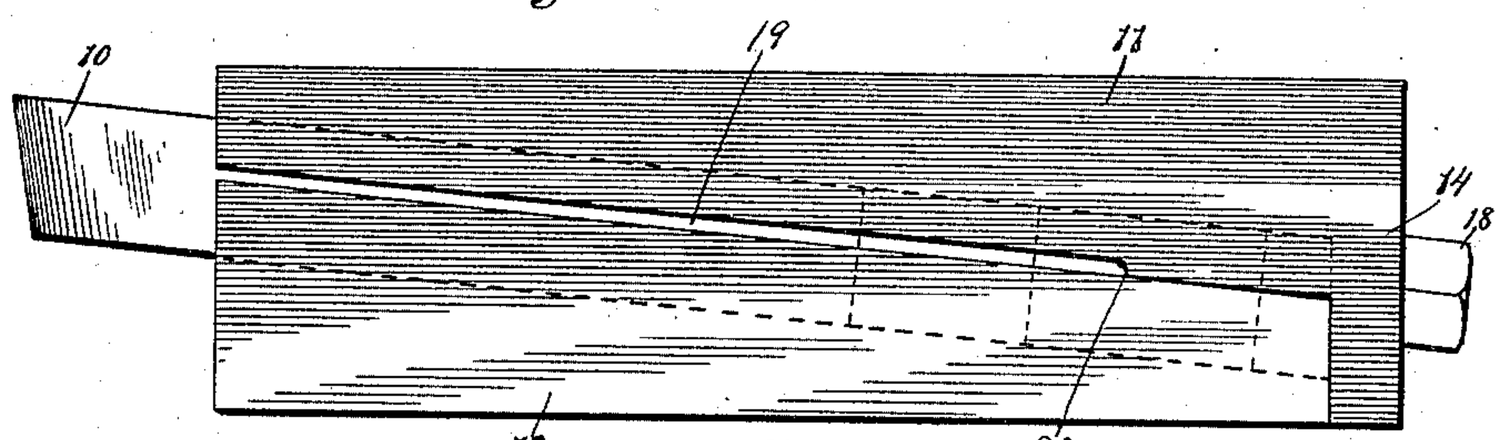
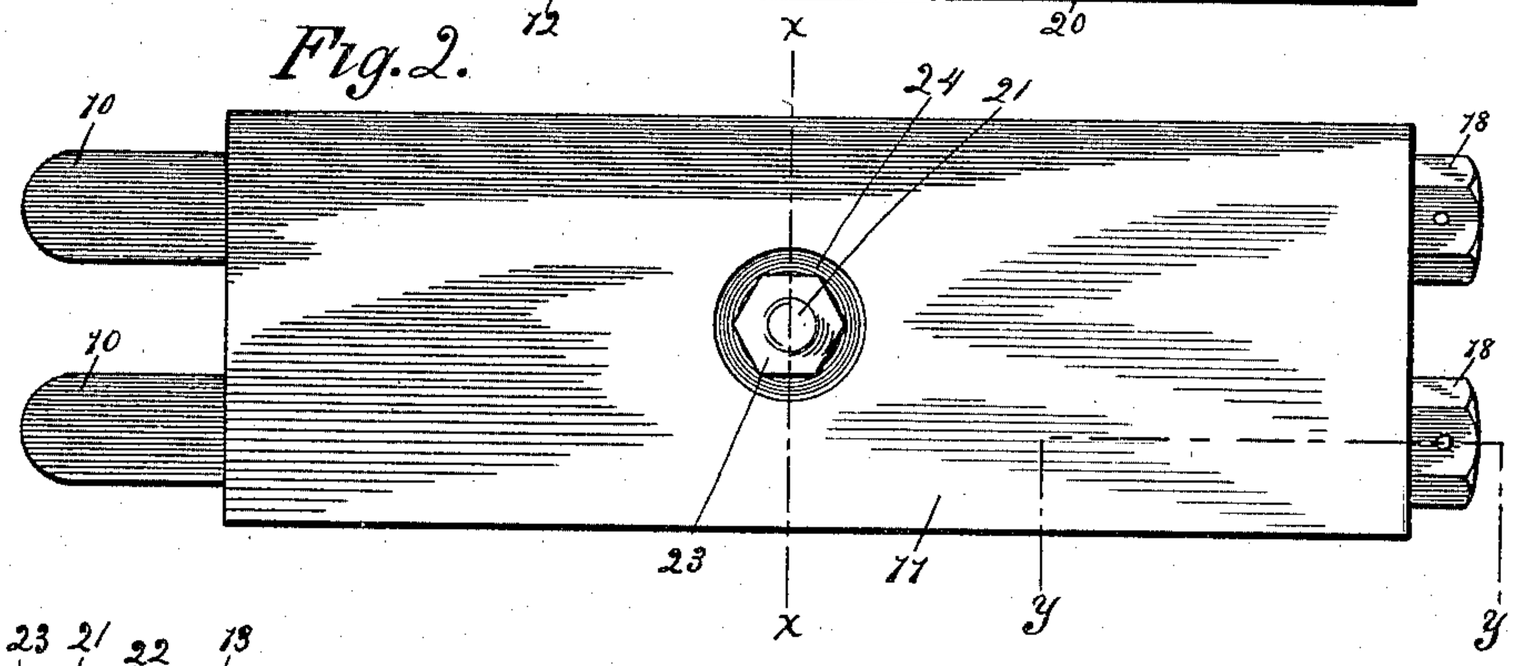


Fig. 2.



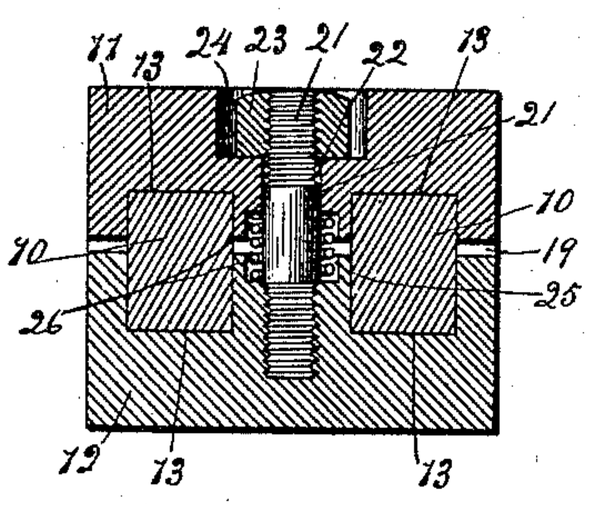
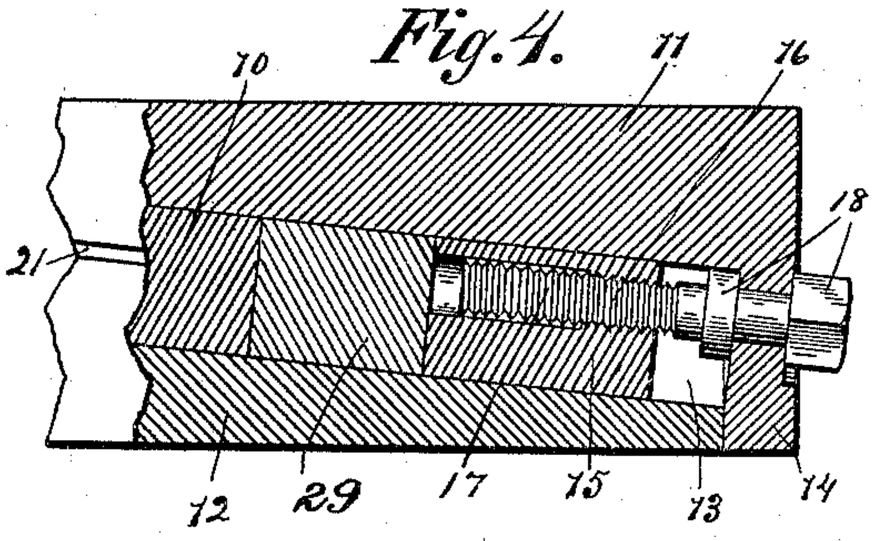


Fig. 3.

Fig. 4.



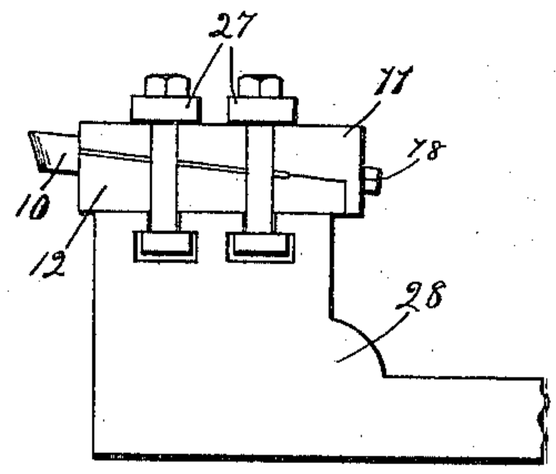


Fig. 5.

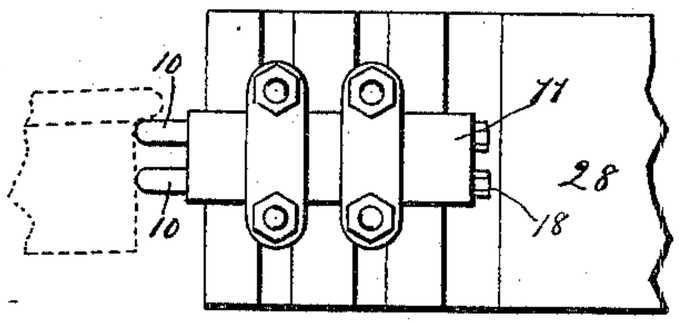


Fig 6.

WITNESSES:

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TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 725,019, dated April 14, 1903.

Application filed May 29, 1902. Serial No. 109,570. (No model.)

To all whom it may concern:

Be it known that I, JOHN ARMSTRONG, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Tool-Holders, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

This invention relates to holders for tools used on lathes or similar machines and employed for turning and planing metal objects.

The invention has for its objects to provide a holder which shall be simple in construction, possessed of great strength in order to withstand the heavy strain to which such devices are subjected, and which shall be provided with simple means for effecting a ready adjustment of the cutting tool or tools as it or they are ground away.

The invention comprises generally a pair of clamping members, one at least of which is provided with longitudinal grooves or channels to receive the cutting tool or tools and means for securing the clamping members together.

The invention further comprises the said clamping members, together with means for adjusting the cutting tool or tools and means for partially separating or spreading the clamping members when the means for securing the said members together are released.

The invention consists of the arrangement and combination of parts hereinafter particularly described, designated in the appended claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a tool-holder constructed in accordance with my invention. Fig. 2 is a plan of the same. Fig. 3 is a section on the line $x\,x$ of Fig. 2. Fig. 4 is a section on the line $y\,y$ of Fig. 2. Fig. 5 is a side elevation of the tool-holder clamped to the slide-rest of a lathe. Fig. 6 is a plan of the same.

The cutting-tools 10 are designed to be secured between a pair of clamping members 11 and 12, and in the construction illustrated the holder is arranged to carry two such tools. Each of the members 11 and 12 is provided on its inner face with a pair of channels or grooves 13, which when the said members are secured together coincide and provide sockets in which the tools are seated and may slide. As shown in Figs. 1 and 4, one of the members, as 11, is formed with a tailpiece or extension 14 in line with the grooves and which in the construction illustrated projects back of the other member, or 12, and closes the rear ends of the grooves 13 therein, and projecting through this tailpiece and into the adjacent ends of the tool-sockets are means for adjusting or alining the tools. Each tool may be provided with an individual means for securing its adjustment, which means may consist of a block 15, located between the end of the tool and the tailpiece 14 and provided with a threaded aperture 16, engaged by a screw-bolt 17, rotatably mounted in the tailpiece and held against longitudinal movement by collars 18, fixed thereon at opposite sides of the tailpiece, the collar at the outer end of the bolt being in the form of a nut pinned in place to permit of the turning of the bolt by a wrench to move the block 15. In addition to adjusting the tools the blocks 15 serve as positive stops to prevent the tools slipping back under the heavy pressure to which they may be subjected and react on the tailpiece 14, which serves as an abutment therefor. If it is desired to provide for a constant inclination or rake of the tools in the holder, the upper and lower walls of the tool-sockets may be given any preferred inclination, as shown in dotted lines, Fig. 1.

The inner face of one of the clamping members, as that of the upper member 12, is cut away or recessed, as at 19, for a portion of its length, and preferably nearly its entire length, to provide a bearing edge or projection 20 across its face and which is fulcrumed on the lower member. Located between the bearing 20 and the front end of the holder and between the two tools 10 is a bolt 21, which is secured, as by tapping, in the lower member and provided with a threaded upper end which projects through an aperture 22 in the upper member and receives a nut 23, by means

of which the two members are forced together. The object of cutting away the portion 19 and fulcruming the upper on the lower member will now be apparent. When the nut 23 is screwed home after the adjustment of the tools, the upper member, turning on its bearing edge, will have its forward end forced tightly against the tools, so as to securely clamp the same against the lower member. A countersink, as at 24, may be provided in the upper member to receive the nut 23.

In order to avoid the necessity of lifting up the upper member by hand to relieve the tool of its weight when it is desired to adjust the tools, means are provided for elevating the same to a slight degree as soon as the nut 23 is loosened. Such means may take the form of an expansion-spring 25, encircling the bolt 21 and located in recesses 26 on the opposing faces of the members.

The bolt 21 need not be relied upon to accomplish anything more than the mere securing of the tools in their adjusted positions in the holder, as under the stress of heavy work it would probably not be sufficient to hold the tools. The tool-clamp 27 of the lathe slide-rest 28, Figs. 5 and 6, may therefore be depended upon to still further press the clamping members together and effectively secure the tools against movement.

When the tools are ground away to such a degree that the adjusting-blocks lose control over the same, slugs 29 may be inserted between the adjusting-blocks 15 and the ends of the tools, as seen in Fig. 4.

The tool-holder is preferably designed to carry a plurality of tools, which being in action simultaneously enable the work to be performed in less time than when one cutter is employed. In using the holder with two tools to turn a car-wheel, a purpose to which the invention is well adapted, though not restricted thereto, the parts would be so proportioned that one of the cutters would start at the fillet of the wheel, while the other would begin cutting half-way across the tread, thereby reducing the time ordinarily consumed in the operation one-half.

I claim as my invention—

1. In a tool-holder, in combination, a pair of clamping members one of which is provided on its inner face with a longitudinal groove for seating a cutting-tool, an abutment on one member in line with the groove, an adjusting-screw engaging the abutment and entering the groove, and a clamp for forcing the members together.

2. In a tool-holder, in combination, a pair of clamping members one of which is pivoted upon the other and one of which is provided on its inner face with a longitudinal groove for seating a cutting-tool, and a clamping-bolt engaging the members.

3. In a tool-holder, in combination, a stock comprising a pair of clamping members, one of which rocks upon the other, and a clamp carried by and engaging the members between the pivot of the rocking member and the forward end of the holder.

4. In a tool-holder, in combination, a pair of clamping members each of which is provided on its inner face with a plurality of grooves which with the grooves of the other member form sockets designed to seat the cutting-tools, a tailpiece projecting from one of the members and closing the rear ends of the grooves of the other member, adjusting-screws located in the tailpiece and projecting into the tool-sockets, and a clamp for forcing the members together.

5. In a tool-holder, in combination, a pair of clamping members each of which is provided on its inner face with a plurality of grooves which with the grooves of the other member form sockets designed to seat the cutting-tools, a tailpiece projecting from one of the members and closing the rear ends of the grooves of the other member, an adjusting-screw rotatably mounted in the tailpiece and projecting into each of the tool-sockets, a block seated in the socket and provided with a threaded aperture engaged by the screw, and a clamp for forcing the members together.

6. In a tool-holder, in combination, a pair of clamping members each of which is provided on its inner face with a plurality of grooves which with the grooves of the other member form sockets designed to seat the cutting-tools, a bolt and nut for forcing the members together and an expansion-spring encircling the bolt and located between the members for separating the same when the nut is unloosened.

7. In a tool-holder, in combination, a pair of clamping members between which a plurality of tools is designed to be secured, one of the said members having a bearing edge and being fulcrumed on the other member, and means carried by the members and located between said fulcrum and the front of the holder for forcing the members together.

8. In a tool-holder, in combination, a pair of clamping members each of which is provided with a plurality of grooves which with the grooves of the other member form sockets designed to seat cutting-tools, one of said members being cut away on its inner face to provide a bearing edge fulcrumed on the other member, a bolt secured to one of the members and passing through an aperture in the other member, and a nut on the bolt for forcing the members together.

9. In a tool-holder, in combination, a pair of clamping members each of which is provided with a plurality of grooves which with the grooves of the other member form sockets designed to seat the cutting-tools, a tailpiece projecting from one of the members and closing the rear ends of the sockets, an adjusting-screw rotatably mounted in the tailpiece and projecting into each of the sockets, a

block seated in the socket and provided with a threaded aperture engaged by the screw, one of the said members being cut away on its inner face to provide a bearing edge fulcrumed on the other member, a bolt secured to one of the members between the bearing edge and the front end of the holder and passing through an aperture in the other member, a nut on the bolt for forcing the members together, and an expansion-spring encircling the bolt and reacting against the inner faces of the members.

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Witnesses:
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