J. H. SMITH.

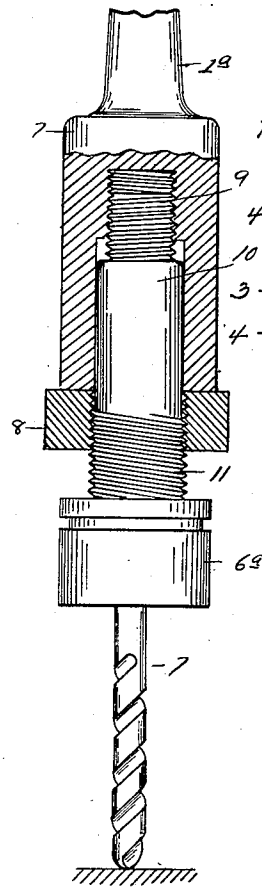
ADJUSTABLE TOOL HOLDER.

APPLICATION FILED MAY 2, 1919.

1,378,290. **Patented May 17, 1921.**

Fig. 2.

Fig. 3.



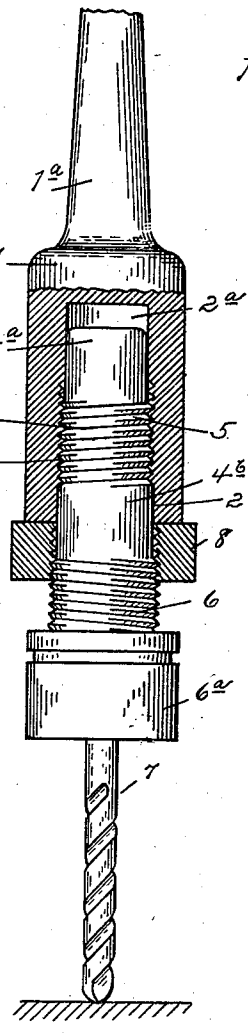
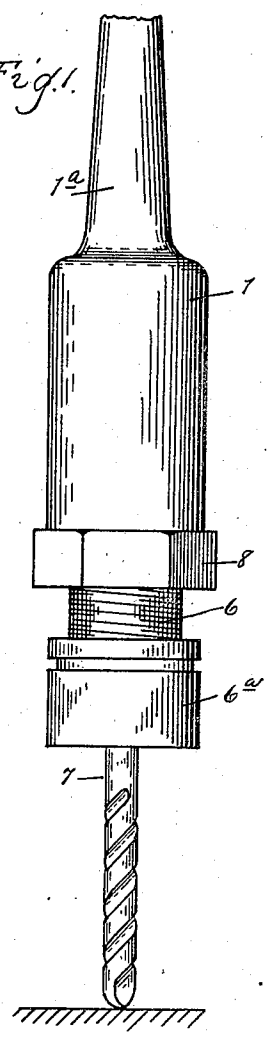


Fig. 1.



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UNITED STATES PATENT OFFICE.

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ADJUSTABLE TOOL-HOLDER.

1,378,290. Specification of Letters Patent. Patented May 17, 1921.

Application filed May 2, 1919. Serial No. 294,309.

To all whom it may concern:

Be it known that I, JOHN H. SMITH, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Adjustable Tool-Holders, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to adjustable drill holders and has a special application to multiple drill machines.

It is the object of the invention to provide a mounting for a rotating tool and more particularly for a drilling or counterboring tool that will permit a quick longitudinal adjustment of the tool in a holder therefor for the purpose of establishing the point or face of the tool in any desired relation to the work and to provide for positively holding the tool in any position of such adjustment.

A further object of the invention is to provide an adjustable mounting for drilling or counterboring tools, applicable for use in a multiple drill machine to permit a quick adjustment for bringing all of the cutting points to a common level or to such varying levels as the nature of the work may require.

In the accompanying drawings:

Figure 1 is a side elevational view of the invention;

Fig. 2 is an axial sectional view of the same;

Fig. 3 is an axial sectional view of an alternative form of the invention.

In these views, the reference character 1 designates a holder having the usual tapering shank 1^a, whereby it may be engaged with the chuck of a machine. Said holder has a socket opening in an end thereof having bearing portions 2 and 2^a of different diameters and the intermediate threaded portion 3. Said socket is adapted to receive a collet 4 having the threaded portion 5 engageable with the socket threads 3 and having at each side of the portion 5 the portions 4^a and 4^b for respectively engaging the bearings 2^a and 2. Below the portion 4, said collet is formed with the threaded portion 6 which is pitched reversely to the portion 5. Below the portion 6, the collet is formed with a head 6^a, with which a suitable tool, as, for example, the drill 7, may be engaged in any desired manner. 8 is a lock-nut engaging the screw-threads 6 and bearing against the lower end of the member 1 to hold the collet rigid with the holder.

To effect a longitudinal axial adjustment of the tool 7, it is necessary merely to loosen the lock nut 8, then rotate the collet to shift the same up or down as desired, and finally to again clamp the lock nut against the lower end of the holder. The simplicity of the adjusting means is such that it requires only a few moments to perform the operation just described. The screw-threads are so pitched that the resistance to rotation offered by the collet, due to engagement of the tool with the work, will tend to increasingly bind the lock-nut against the lower end of the holder member.

In that form of the invention shown in Fig. 3, the collet has threaded engagement at its upper end with the holder 1, said end being somewhat reduced, as indicated at 9, the portion 10 intermediate said part and the reversely threaded lower portion 11 being unthreaded and slidably engaging the socket.

What I claim as my invention is:

1. The combination with a socket member having its socket formed with cylindrical bearing portions of different diameters and an intermediate threaded portion, of a collet insertible in the socket member and having portions slidably engageable with the bearing portion of the socket, and an intermediate threaded portion engageable with the threads of the socket, and means for locking said collet in various positions of longitudinal adjustment.

2. The combination with a socket member formed with cylindrical bearing portions of different diameters, and an intermediate threaded portion of a collet insertible in said socket member having portions slidably engageable with said bearing portions of the socket member, an intermediate threaded portion for engaging said threads of the socket, and a reversely threaded portion projecting exteriorly of the socket, and a lock-nut engaging said reversely threaded portion and adjustable thereon to bind against the socket member.

In testimony whereof I affix my signature.

JOHN H. SMITH.