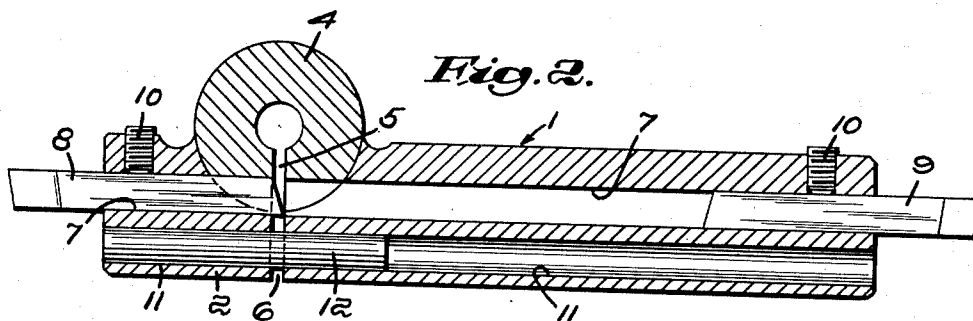
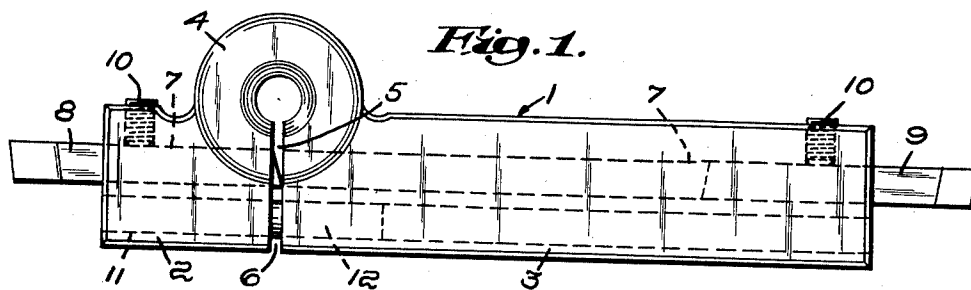


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RESILIENT TOOLHOLDER

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RESILIENT TOOLHOLDER

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2 Claims. (Cl. 29—96)

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The invention relates to an improvement in resilient tool holders especially adapted for lathe work.

The essential object of the invention is a resilient tool holder providing a resilient support for the cutting tool, but one which will not allow the tool to move laterally and downward as this allows the cutting edge of the tool to leave waves and deflections in the work.

The attainment of the object centers around the idea of supporting the tool in such manner that it will give resiliently but only in a longitudinal direction or along the normal line of its cutting. The idea is physically attained as will be shown and described in the drawings, in which—

Fig. 1 is a side view of a tool holder embodying the invention.

Fig. 2 is a longitudinal section of the tool holder, and

Fig. 3 is a top plan view.

Referring to the drawings—

1 represents the body of the tool holder comprising longitudinally aligned spaced sections 2 and 3, respectively, connected by a heavy spring 4 having within it a split 5 which permits of the spring being contracted. The spring has preferably a generally annular form with ends deeply embedded in the part sections, substantially one-half of the spring being so embedded, and having preferably integral connection with the part sections. The two sections are separated by a slot 6 extending in a direction normal to the longitudinal axis of the holder from the bottom thereof, and this slot 6 is in alignment with the split 5 in the spring.

A longitudinally extending square hole 7 is broached through both sections and through the embedded portions of the spring. This hole is within or parallel to the longitudinal axis of the holder. Within the hole 7 are located the cutting tools, the tool 8 being located in the section 2 and the tool 9 in the section 3. The tools are held in place by set screws 10.

With the holder thus constructed if a distortive force be applied to the cutting tool borne by one of said sections, the other of said sections being held fixed, the spring will be distorted and the tool carrying section to whose cutting tool the distortive force is applied will be capable of a retractive movement with relation to the work. This retractive movement of the tool carrying section should be confined to a straight line without downward or lateral play in order that the cutting angle of the tool with relation

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to the work will be maintained during any retractive movement of the tool carrying section. For insuring these ends the following means are provided.

Drilled through both sections of the holder along a line parallel with its longitudinal axis in the lower portion thereof and preferably lying in a vertical plane with said axis is a hole 11. This hole provides sockets in the respective sections in which is located a hardened ground steel rod 12 of sufficient diametrical size to be practically unbendable under any strain to which it may be subjected. This rod is made with two diameters, one by which the rod will have a rigidly pressed fit within the hole 11 in the section 3 with extension to the adjacent marginal side of the slot 6. There the diameter of the rod is lessened by approximately .0002 of an inch with extension across the slot and well into the hole 11 in the section 2 of the holder with sliding fit therein.

The rod 12 thus contained in the respective sockets, aligned as aforesaid, with determinate relative relationship to the longitudinal axis of the holder, provides means whereby any retractive movement of the tool carrying section will be confined to a straight line and the cutting angle of the tool with relation to the work will be maintained during such movement.

I claim:

1. A tool holder comprising, in combination, a section arranged to be held fixed, a tool holding section in longitudinal alignment with said fixed section, a resilient spring member joining said sections and normally maintaining them in longitudinally spaced relation, sockets in each of said sections disposed in longitudinal alignment with each other and extending in a direction parallel to the longitudinal axis of said sections, and a rigid unbendable rod extending a substantial distance into said socket of the fixed section with pressed fit and into substantially the entire length of said socket of the tool holding section with sliding fit, whereby said sections are locked against any movement relative to each other except axially of the tool holder.

2. A tool holder comprising, in combination, an elongated section arranged to be held fixed, a tool holding section disposed in longitudinal alignment with said fixed section and having a longitudinally extending tool receiving socket, a resilient spring member integral with said sections and normally maintaining them in longitudinally spaced relation, sockets in each of said sections disposed in longitudinal alignment with

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each other, and extending in a direction parallel to said tool receiving socket and to the longitudinal axis of said sections, and a rigid hardened rod extending a substantial distance into said socket of the fixed section with pressed fit and into substantially the entire length of said aligned socket of the tool holding section with sliding fit, whereby said sections are locked against any movement relative to each other except axially of the tool holder.

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