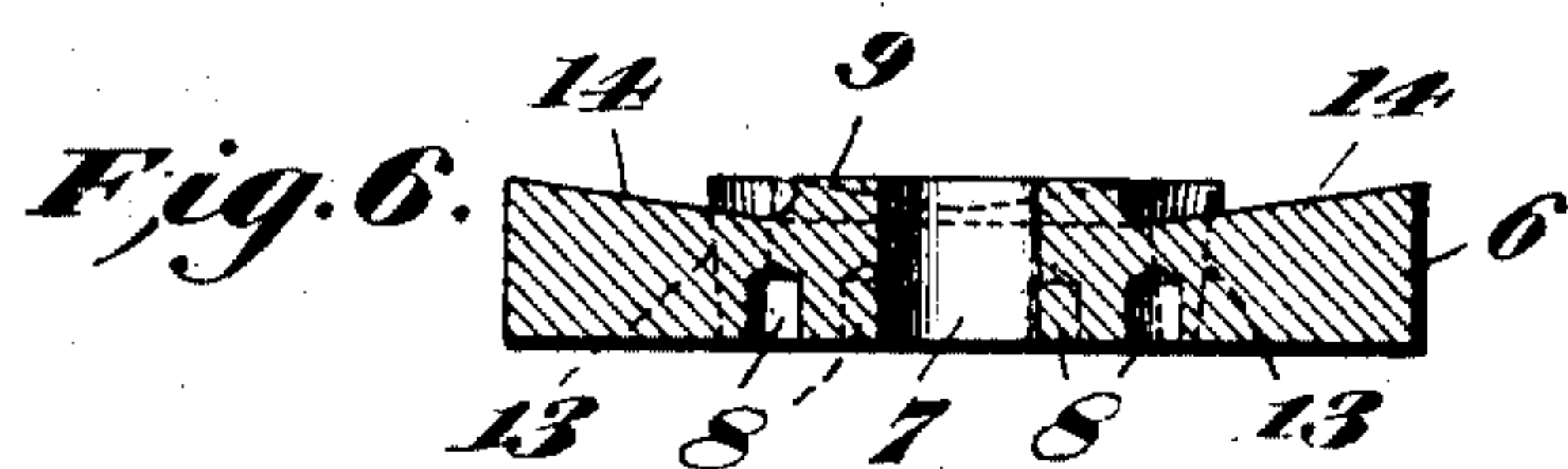
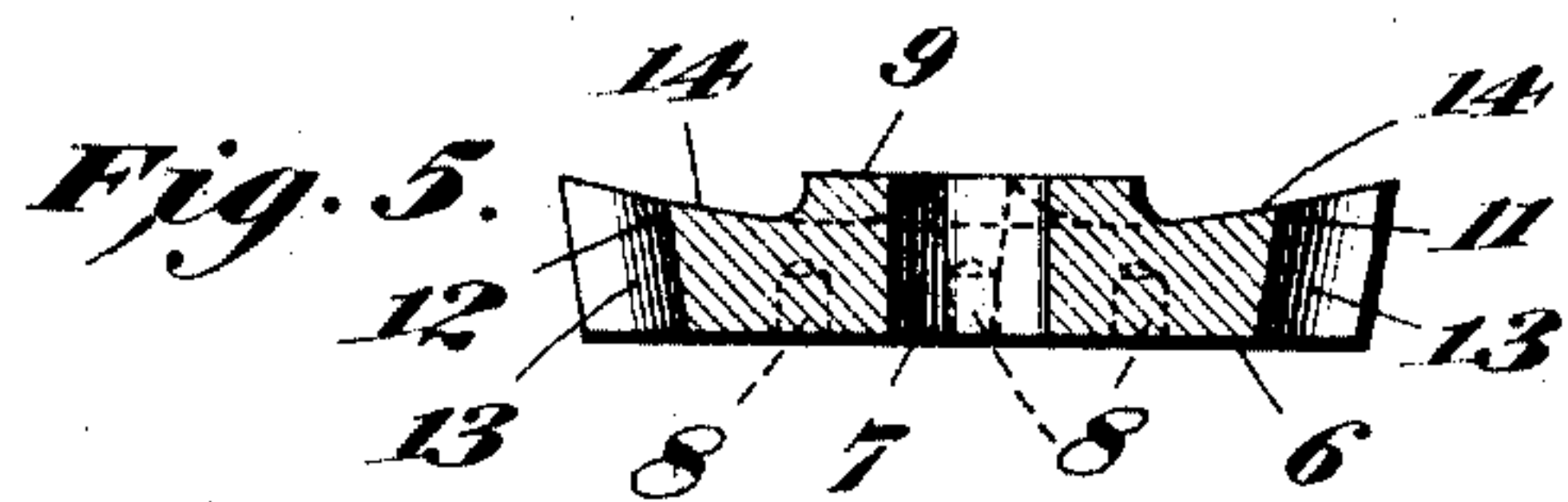
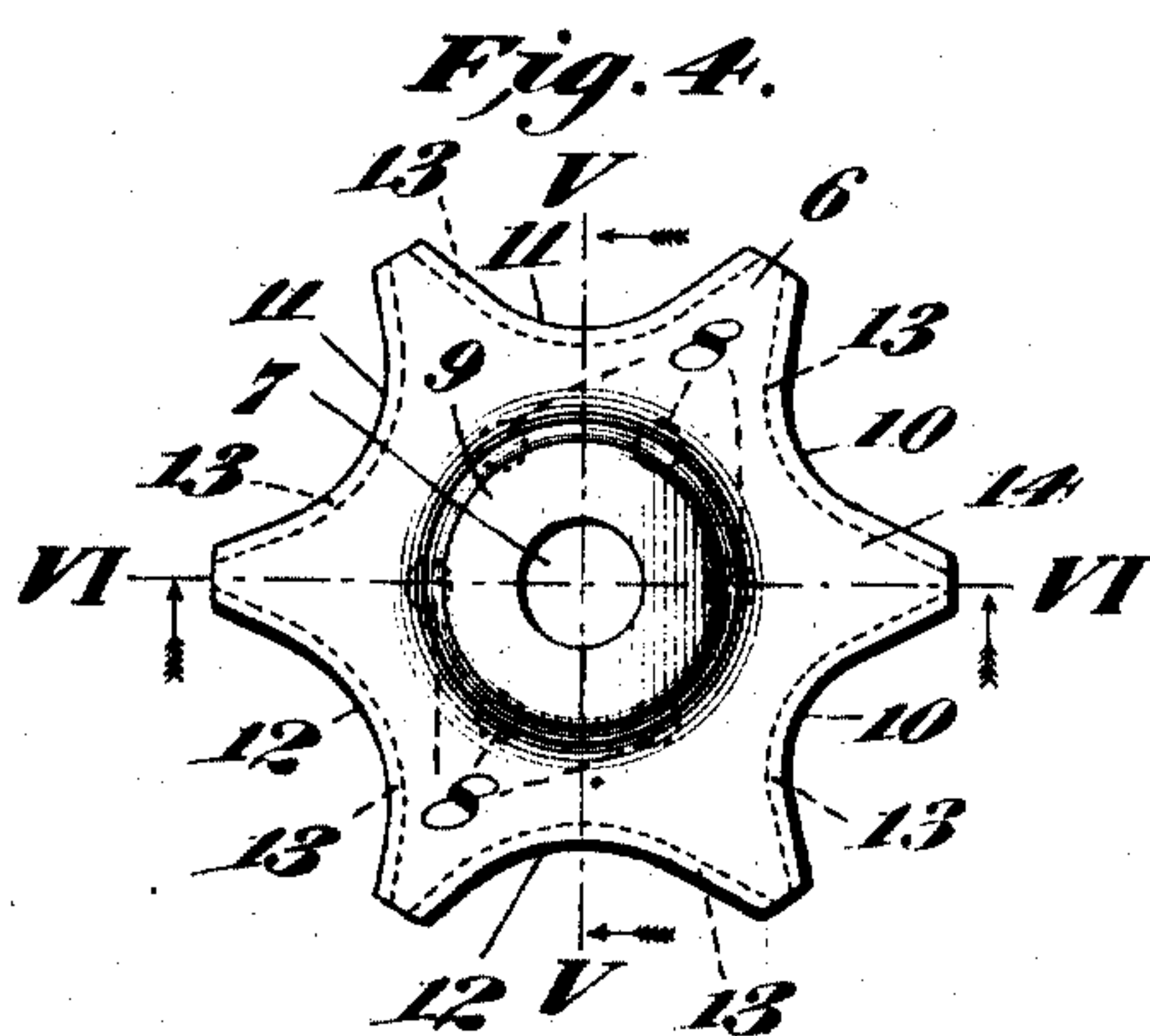
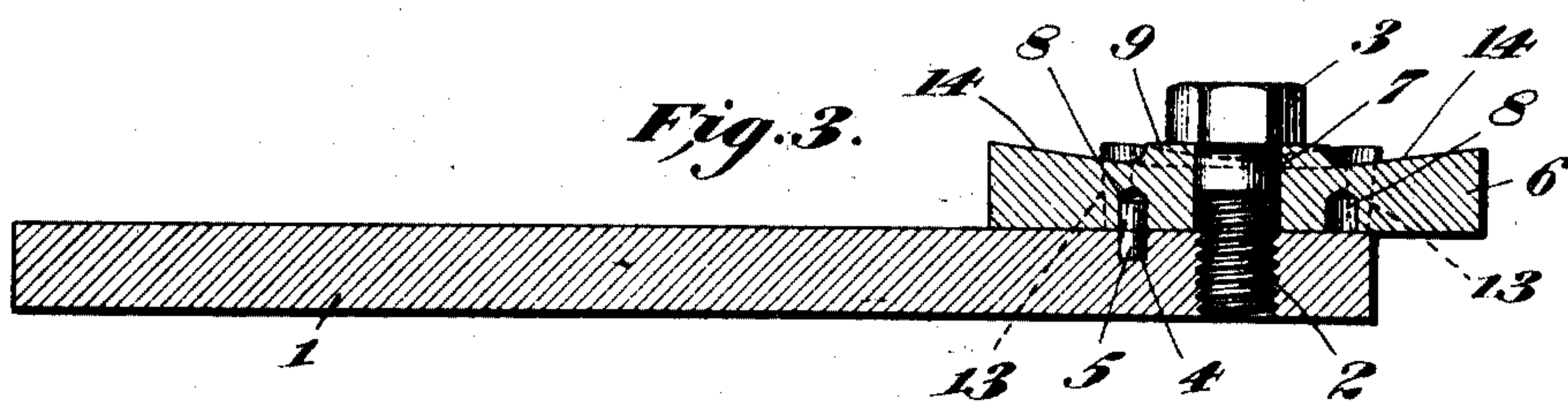
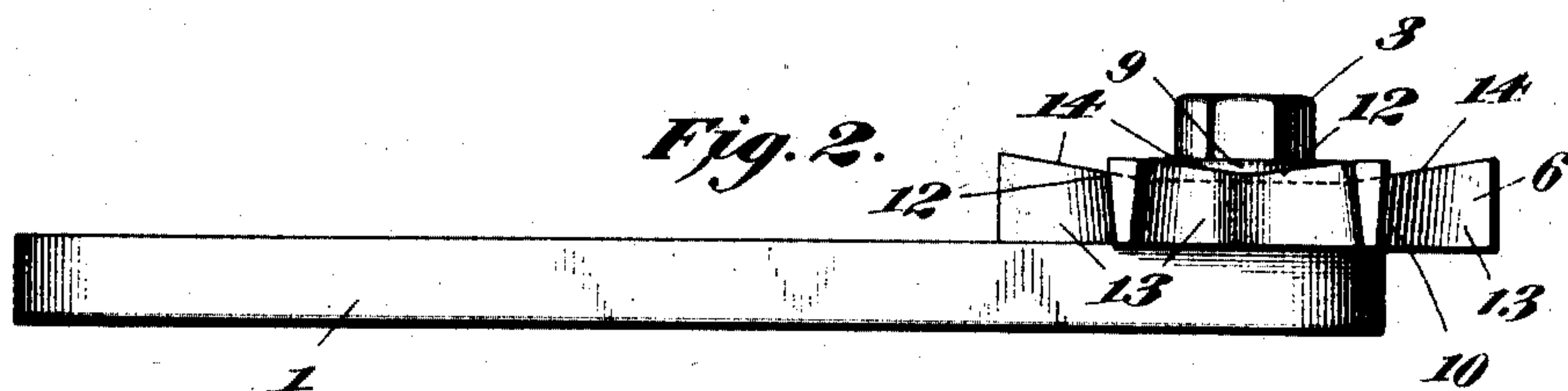
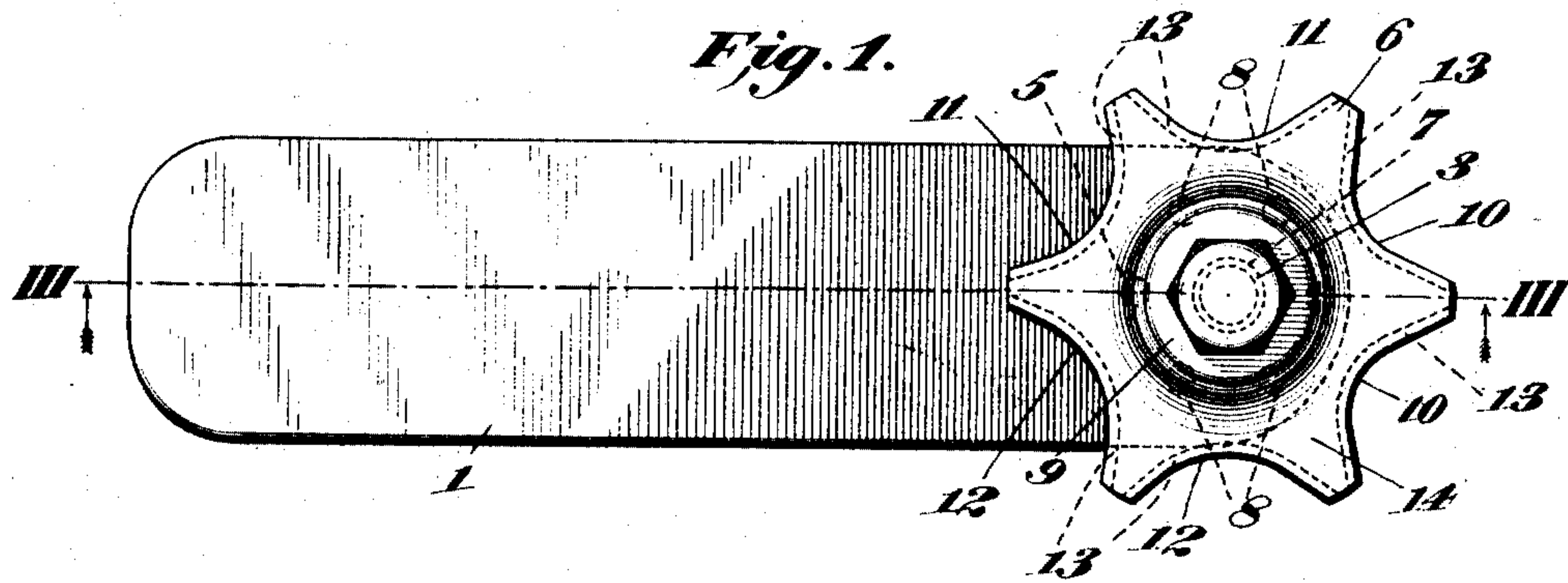


J. P. GRIFFITH.  
COMBINATION ROUNDING TOOL.  
APPLICATION FILED DEC. 12, 1919.

1,365,683.

Patented Jan. 18, 1921.



INVENTOR

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BY

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# UNITED STATES PATENT OFFICE.

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## COMBINATION ROUNDING-TOOL.

1,365,683.

Specification of Letters Patent. Patented Jan. 18, 1921.

Application filed December 12, 1919. Serial No. 344,400.

*To all whom it may concern:*

Be it known that I, JAMES P. GRIFFITH, a citizen of the United States, and a resident of the city of Johnstown, county of Cambria, and State of Pennsylvania, have invented certain new and useful Improvements in Combination Rounding-Tools; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to metal shaping tools for the purpose of finishing rounded or projecting portions of segmentary sections subject to either a rotary or a translatory motion in the process of finishing and provides therefor a combination tool giving a wide range of service. This tool is particularly adapted for finishing the roundings on the corners of the collars of metal rolls used in rolling mills and for cutting other similar surfaces.

My invention consists essentially of a holder so shaped as to be held in the tool post of a lathe or planer or other machine tool and said holder has clamped and locked to one end of it the cutting portion of my combination rounding tool.

Having thus given a general description of my invention, I will now, in order to make the matter more clear, refer to the annexed sheet of drawings, which forms part of this specification, and in which like characters refer to like parts.

Figure 1 is a plan of my combination rounding tool assembled, showing the holder and combination rounding cutter; Fig. 2 is a side elevation of the same; Fig. 3 is a longitudinal section on the line III—III of Fig. 1, showing all parts in elevation; Fig. 4 is a plan of my combination rounding cutter; Fig. 5 is a section of the cutter on the line V—V of Fig. 4; and Fig. 6 is a section of the cutter on the line VI—VI of Fig. 4.

Referring now to the characters of reference on the drawings:—1 is the holder of rectangular section with rounded ends having at the center of one end the tapped or threaded hole 2 to receive the threaded end of the clamping bolt 3. In the longitudinal axis of the holder and at a short distance back of the tapped hole 3 is the dowel

pin socket 4 into which the dowel pin 5 has a driving fit.

The combination rounding cutter 6 has a central hole 7 through which the shank of the clamping bolt 3 passes and also has a plurality of concentric dowel pin holes 8 into any of which the dowel pin 5 has a sliding fit.

The clamping boss 9 of the combination rounding cutter 6 serves as a seat for the under side of the head of the clamping bolt 3. The clamping bolt 3 thus serves to clamp the combination rounding cutter 6 to the holder 1, and the clamping bolt 3 together with the dowel pin 5 so locks the combination rounding cutter 6 to the holder 1 as to prevent any relative motion of the parts.

The variable radius concave shaping or cutting faces 10, 11 and 12 of the combination have beveled sides 13 to provide clearance for the cutters.

The six cutting or shaping faces shown in the drawings have three different radii, each being in duplicate, namely, two sizes each, numbers 10, 11 and 12, but it is obvious that any number of radii or curves, within practical working limits, may be provided on one cutter if desired. Therefore one combination rounding cutter will replace a number of single face cutting tools.

By loosening the clamping bolt 3 and backing the cutter 6 off the dowel pin 5, any other cutting edge can be swung into position and locked without removing the holder from the tool post or by removing and replacing the clamping bolt 3 another cutter may be substituted for the first. Also because of the relatively great width and resultant strength of this tool, throwbacks or upsets are eliminated, thereby avoiding accidents to the men and to the work.

Although I have shown and described my invention in considerable detail, I do not wish to be limited to the exact and specific details thereof, as shown and described, but may use such modifications in, substitutions for, or equivalents thereof, as are embraced within the scope of my invention, or as pointed out in the claims.

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

1. A combination rounding tool having a flat metal bar holder of approximately rec-



tangular section provided with a threaded perforation near one end thereof, a cutter of general disk form provided with a plurality of concave rounded cutting edges of different sizes each provided with an edge clearance, the upper surface being arranged at an angle to the general line of said holder thereby providing a cutting angle of less than ninety degrees, the said cutter having a plain central perforation adapted to register with the threaded perforation of the holder aforesaid, a threaded clamp bolt passing through said perforations adapted to adjustably secure said cutter on said holder, a dowel pin mounted in and projecting upwardly from the face of said holder a distance less than the thickness of the cutting disk aforesaid, and a plurality of sockets in the lower side of said cutter concentrically arranged and adapted to register with and fit the aforesaid dowel pin.

2. A combination rounding tool having a flat metal bar holder of approximately rectangular section provided with a threaded perforation near one end thereof, a cutter

of general disk form provided with a plurality of concave rounded cutting edges of different sizes each provided with an edge clearance, the upper surface being arranged at an angle to the general line of said holder thereby providing a cutting angle of less than ninety degrees, the cutter also being provided with a central boss having a flat upper surface substantially parallel to the lower surface of said disk and having a plain central perforation adapted to register with the threaded perforation of the holder aforesaid, a threaded clamp bolt passing through said perforations adapted to adjustably secure said cutter on said holder, a dowel pin mounted in and projecting upwardly from the face of said holder a distance less than the thickness of the cutting disk aforesaid, and a plurality of sockets in the lower side of said cutter concentrically arranged and adapted to register with and fit the aforesaid dowel pin.

In witness whereof I hereunto affix my signature.

JAMES P. GRIFFITH.