Jan. 2, 1923. 1,440,903

J. A. BENNETT.
FLOATING REAMER.
FILED APR. 3, 1915.

Fig I

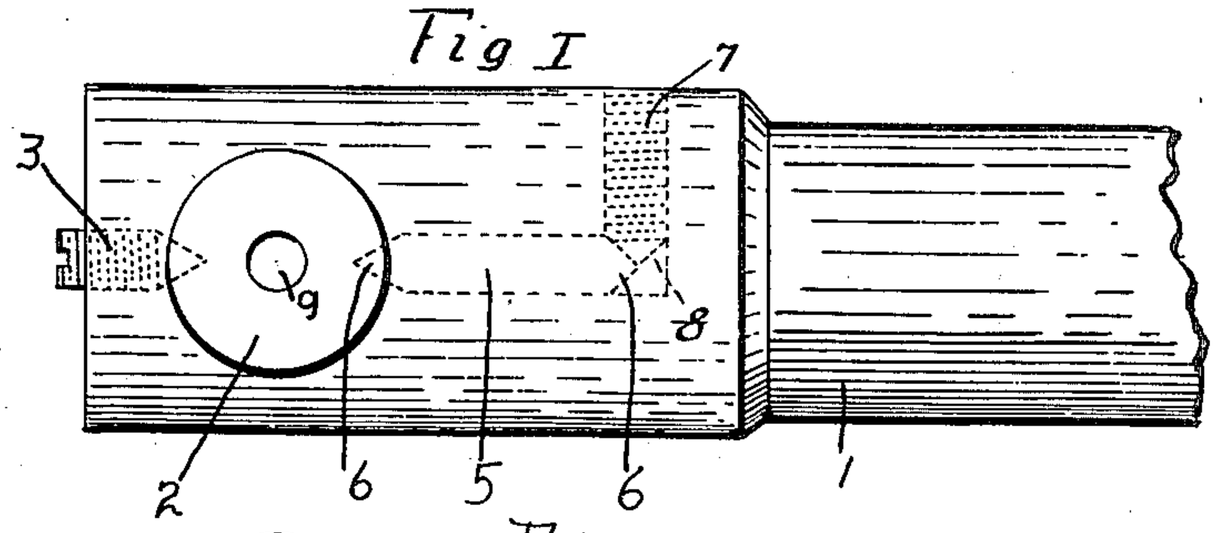


Fig II

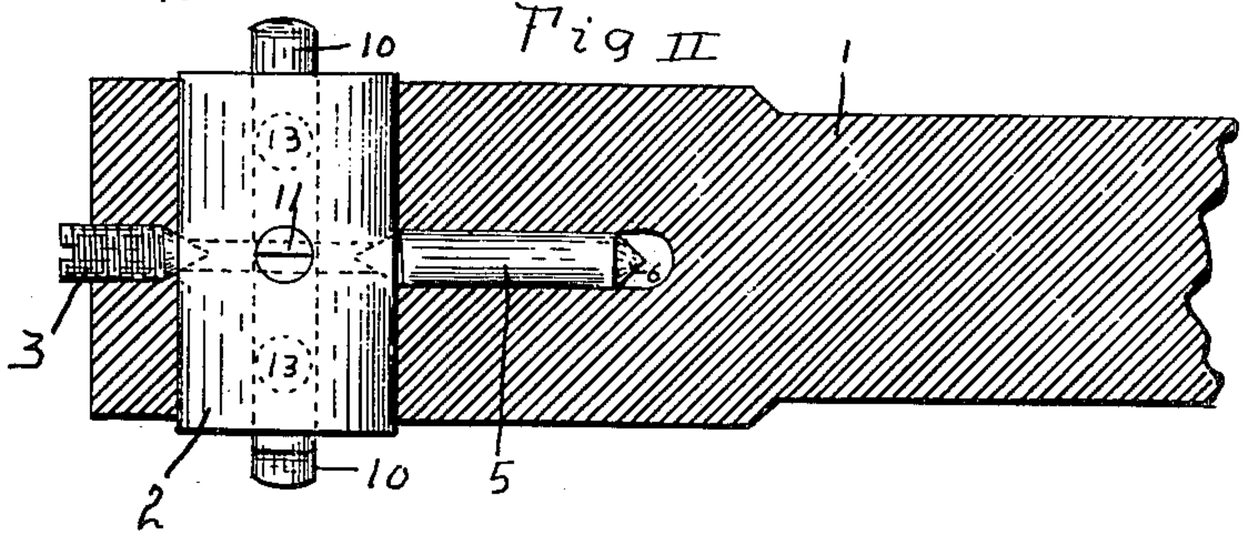


Fig III

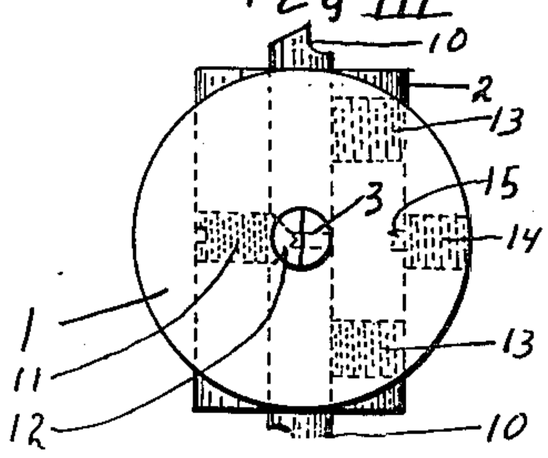


Fig IV

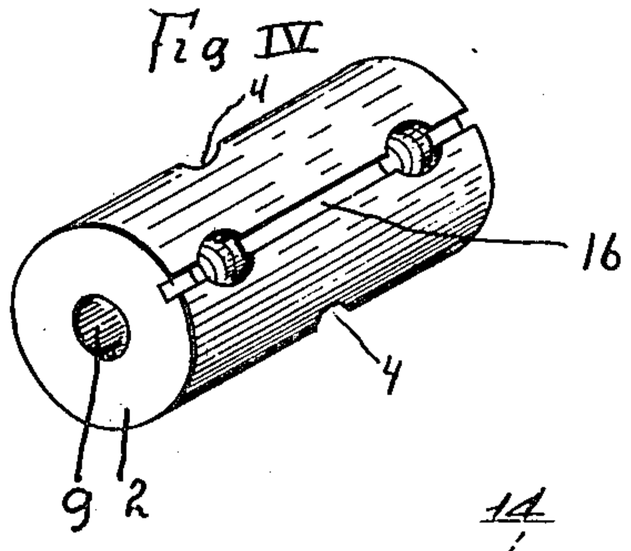
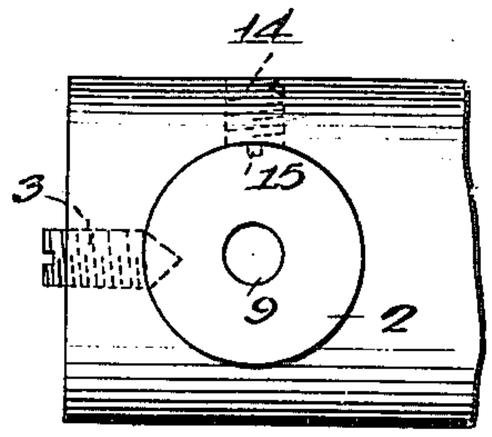


Fig. V.



Witnesses
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John J. Donnelly

Inventor
Joseph A. Bennett.
By
W. E. Donnelly
His Atty

Patented Jan. 2, 1923. 1,440,903

UNITED STATES PATENT OFFICE.

JOSEPH A. BENNETT, OF CLEVELAND, OHIO, ASSIGNOR TO HARRY F. GRIFFIN, OF CLEVELAND, OHIO.

FLOATING REAMER.

Application filed April 3, 1915. Serial No. 18,947.

To all whom it may concern:

Be it known that I, JOSEPH A. BENNETT, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Floating Reamers; 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 pertains to make and use the same.

This invention relates to reamers, more commonly known as floating reamers.

The object of this invention is to provide a reamer which can be easily and cheaply manufactured and at the same time have all the advantages of adjustment and simplicity.

Another object of this invention is to construct a reamer which will do the desired work and still have a minimum amount of parts.

A further object of this invention is to provide means for preventing the rotation of the floating cutter head.

Other objects of the invention will appear in the following specification and claims.

The invention consists in forming a reamer with a cylindrical floating cutter head provided with means for adjusting and limiting the amount of float.

The invention further consists in means for adjusting and locking the cutters within the cylindrical floating cutter head.

The invention still further consists in parts and combination of parts, all of which will be hereinafter more fully set forth and claimed in the specification and claims.

In the drawings Fig. I, is a side elevation of this invention illustrating the adjusting mechanism in dotted lines.

Fig. II is a top sectional view giving a better view of the adjusting mechanism.

Fig. III is an end view showing the location of the respective adjusting mechanisms, and

Fig. IV is an isometric view of the cylindrical floating cutter head, illustrating the location of the several orifices and recesses.

Fig. V is a view showing a modification.

1 represents the stock or body portion of a reamer through which passes a cylindrical floating cutter head 2. The stock 1, is provided with a pointed threaded pin 3, which engages one of the recesses 4, 4, in the cutter head 2. A sliding pin 5, provided with tapered portions 6, 6, is loosely mounted in the stock 1, one of said tapered portions engaging the other of said recesses 4, 4, in the sliding cutter head 2. A screw-threaded pin 7, provided with a tapered point 8, is screwed into the stock 1, at approximately right angles to the sliding pin 5. The tapered portion 8, of the pin 7, engages with the tapered portion 6, of the pin 5, for the purpose hereinafter set forth. A hole 9 is provided in the cutter head 2, in which is mounted the cutters 10, 10. A screw-threaded pin 11, provided with a tapered portion 12, is screwed into the cutter head at approximately right angles to the hole 9, said pin adapted to engage the inner ends of the cutters 10, 10, so as to adjust the cutters for the desired reaming. Two set-screws 13, 13, are screwed into said cutter heads 2, and engage the cutters 10, 10, for the purpose of binding said cutters in the position adjusted to. These set-screws 13, 13, together with the threaded pin 11, are all short enough to come below the surface of said cutter head 2.

With the construction above set forth it is easily seen that the stock 1, has only to be bored from side to side for the insertion of the cutter head 2; a smaller boring is required for the end of said stock for the reception of the sliding pin 5, and the screw-threaded pin 3, and a tapped opening must be provided for the reception of the threaded pin 7. In the cutter head a longitudinal hole 9, is bored for the cutters 10, 10, and another hole 4, 4, is bored at right angles thereto for the reception of the ends of the pins 3, 5, together with three tapped holes for the adjusting and binding screws.

From the foregoing it will be seen that the cutters 10, 10, are adjusted to the desired length (according to the diameter of the hole to be reamed), by means of a tapered screw 11. The cutters 10, 10, are then firmly held by the tightening of the set screws 13, 13. The screw-threaded pin 7, is inserted in the stock and the sliding pin 5, properly inserted in its place and set far enough in to allow the insertion of the cutter head 2. When the cutter head 2, is inserted the threaded pin 3, is tightened so as to engage one of the holes 4, 4, of the cutter heads 2, while at the same time the threaded pin 7, is tightened so as to force the sliding pin 5, into the other one of the holes 4, 4, of the cutter head 2. The pins 3, and 5, prevent the rotation of

the cutter head 2, within the stock and at the same time acts as means for adjusting the amount of float to be allowed the cutter head 2.

If desired, a modification may be employed for preventing the revolving of the cutter head 2. This modification consists of a dog screw 14, screwed through the stock 1, the lug 15, of said screw 14, engaging in the channel 16, (see Fig. IV) of the cutter head 2, thus allowing a lateral movement while at the same time preventing rotation of the cutter head 2.

From the above it will be seen that either the sliding pin 5, in combination with a screw-threaded pin 7, or a dog screw 14, may be employed without altering the invention.

While I have set forth and described certain details of construction I do not wish to be limited to these details as they may be altered without departing from the invention.

Having thus described my invention, what I wish to claim is:

1. A tool comprising a stock, a cutter head mounted in said stock, cutters mounted in said head, in combination with a slidably mounted pin and a screw-threaded pin adapted to engage said cutter head and means for bringing said pins toward or from said cutter head.

2. A tool comprising a stock, a cutter head mounted in said stock, cutters mounted in said head, in combination with a slidably mounted pin and a screw threaded pin engaging said cutter head, said slidably mounted pin engaging a tapered screw-threaded pin for the purpose set forth.

3. A tool comprising a stock, a cylindrical cutter head mounted in said stock, cutters mounted in said head, in combination with a slidably mounted pin and a screw threaded pin adapted to engage said cutter head and means for bringing said pins toward or from said cutter head.

4. A tool comprising a stock, a cylindrical cutter head slidably mounted within said stock, the axis of said cutter head being at approximately right angles to the axis of said stock, cutters mounted in said cutter head, in combination with a threaded pin mounted in said stock and adapted to engage with said cutter head for the purpose set forth.

5. A tool comprising a stock, a cutter head mounted within a cylindrical orifice in said stock, the axis of said orifice being at right angles to the axis of said stock, said cutter head held within said orifice so as to allow a limited sliding motion and to prevent a rotary movement of the cutter head within said orifice.

Signed at Cleveland, in the county of Cuyahoga and State of Ohio, this 29th day of March, 1915.

JOSEPH A. BENNETT.

Witnesses:
Mrs. J. A. Bennett,
John J. Donnelly.