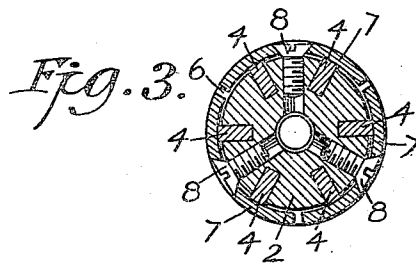
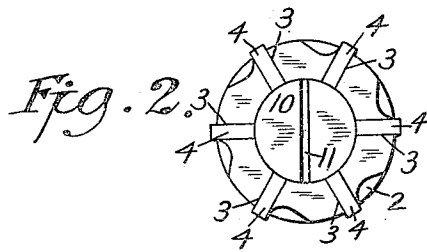
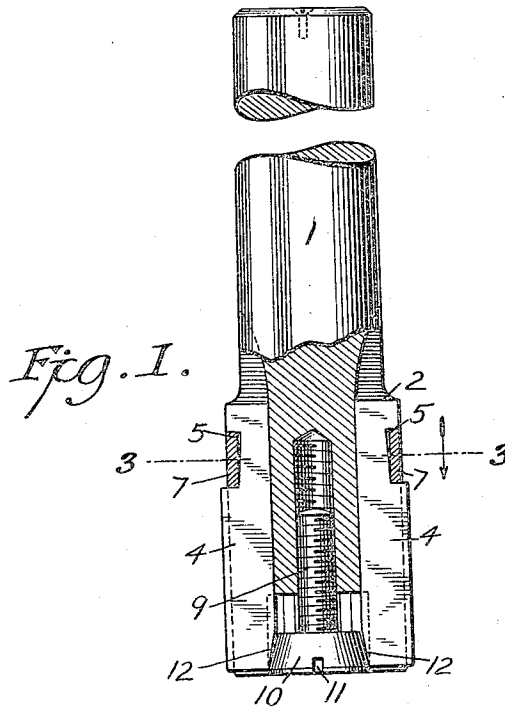


V. J. WAHLSTROM.
EXPANDING REAMER.
APPLICATION FILED MAY 11, 1914.

Patented Feb. 2, 1915.

1,127,121.



Witnesses:
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UNITED STATES PATENT OFFICE.

VERNER J. WAHLSTROM, OF BROOKLYN, NEW YORK, ASSIGNOR TO WAHLSTROM TOOL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

EXPANDING REAMER.

1,127,121.

Specification of Letters Patent.

Patented Feb. 2, 1915.

Application filed May 11, 1914. Serial No. 837,693.

To all whom it may concern:

Be it known that I, VERNER J. WAHLSTROM, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Expanding Reamers, of which the following is a specification.

This invention relates to an expanding reamer and it has for its main object the production of a device of this character, of simple and inexpensive construction which shall be durable and easily adjusted.

With these and other objects not specifically mentioned in view, the invention consists in certain combinations, constructions and parts which will be hereinafter fully described and then specifically set forth in the claims hereunto appended.

In the accompanying drawings which form a part of this specification and in which like characters of reference indicate the same or like parts, Figure 1 is a view partly in section and partly broken away of a device constructed in accordance with the invention. Fig. 2 is an end view of the structure shown in Fig. 1. And Fig. 3 is a sectional view taken on the line 3—3 in Fig. 1.

In carrying the invention into effect there is provided a body portion having a series of longitudinal radial slots cut in its periphery, a plurality of cutting blades one located in each slot each blade being provided at a point near its rear end with a recess, a screw threaded into the body portion on the axis of the same said screw having a conical head engaging the outer end of each of the cutting blades, and means carried by the body portion and engaging the recess of the blades to prevent relative longitudinal movement of said blades and body portion, but adapted to permit the conical head of the screw to force the outer end of the blades radially outward. These elements may be varied in construction within the limits of the claims and the invention therefore is not to be restricted to the precise details of the construction shown and described.

In the device selected to illustrate the invention there is provided a shank 1 having at one end an enlarged body portion 2. This body portion is provided with a series of longitudinal radial slots 3 and in these slots are located a series of cutting blades 4.

Each of the cutting blades is provided at a point near its rear end with a recess 5, the recesses 5 of the blades being coincident with an annular groove 6 cut in the body portion of the device and interrupted by the slots 3. Located within the annular groove 6 is a series of spring plates 7, each spring plate overlying two of the cutting blades and engaging the recesses in said blades. The spring plates are held to the body portion 2 by means of screws 8 threaded into said body portion between adjacent slots. The action of these spring plates is to normally hold the plates in contact with the bottom of the slot 3 as shown in Fig. 1.

There is further provided a screw 9 threaded into the body portion of the device, said screw having an enlarged conical head 10 provided with a slot 11. The conical head of the screw engages an incline surface 12 at the outer end of each cutting blade, and by an inspection of Fig. 1 it will be readily understood that when the screw 9 is rotated in one direction by means of a screw-driver inserted in the slot 11, the outer ends of the cutting blades will be forced radially outward by the conical head 10 of the screw and against the action of the spring plates 7. It will also be readily understood that when the screw 9 is rotated in the opposite direction, the spring plates 7 will return the cutting blades to their normal position, or that shown in Fig. 1.

In view of the foregoing, a detailed description of the operation of the device is deemed unnecessary and is therefore omitted in the interest of brevity.

What is claimed is:

1. In an expanding reamer, the combination with a body portion having a series of longitudinal radial slots cut in its periphery, of a plurality of cutting blades one located in each slot each blade being provided at a point near its rear end with a recess, a screw threaded into the body portion on the axis of the same said screw having a conical head engaging the outer end of each of the cutting blades, and a series of spring plates carried by the body portion and engaging the recesses of the blades to prevent relative longitudinal movement of said blades and body portion but adapted to permit the conical head of the screw to force the outer end of the blades radially outward.

2. In an expanding reamer, the combination with a body portion having a series of longitudinal radial slots cut in its periphery, of a plurality of cutting blades one located
 5 in each slot each blade being provided at a point near its rear end with a recess, a screw threaded into the body portion on the axis of the same said screw having a conical head engaging the outer end of each of the
 10 cutting blades, and a series of segmental spring plates each plate overlying two of said blades and engaging the recesses of the same to prevent relative longitudinal movement of said blades and body portion but
 15 adapted to permit the conical head of the screw to force the outer end of the blades radially outward each of said plates being held to the body portion by means of a screw threaded into said body portion between adjacent
 20 slots.

3. In an expanding reamer, the combination with a body portion having a series of longitudinal radial slots cut in its periphery and also having an annular groove crossing
 25 said slots, of a plurality of cutting blades one located in each slot each blade being provided at a point near its rear end with a recess co-incident with the annular groove of the body portion, a screw threaded into
 30 the body portion on the axis of the same said screw having a conical head engaging the outer end of each of the cutting blades, and a series of spring plates each lying within the annular groove of the body portion
 35 and each engaging the recesses of two of the cutting blades to prevent relative longitudinal movement of said blades and body portion but adapted to permit the

conical head of the screw to force the outer end of the blades radially outward each of
 40 said spring plates being held to the body portion and within the annular groove of the same by means of a screw threaded into the body portion between adjacent slots.

4. In an expanding reamer, the combination with a body portion having a series
 45 of longitudinal radial slots cut in its periphery and also having an annular groove crossing said slots, of a plurality of cutting blades one located in each slot each blade
 50 being provided at a point near its rear end with a recess and at its front end with an inclined surface, a screw threaded into the body portion on the axis of the same said screw having a conical head engaging the
 55 outer end of each of the cutting blades, and a series of spring plates each lying within the annular groove of the body portion and each engaging the recesses of two of the cutting blades to prevent relative longitudinal
 60 movement of said blades and body portion but adapted to permit the conical head of the screw to force the outer end of the blades radially outward each of said spring plates
 65 being held to the body portion and within the annular groove of the same by means of a screw threaded into the body portion between adjacent slots.

In testimony whereof, I have signed my name to this specification in the presence
 70 of two subscribing witnesses.

VERNER J. WAHLSTROM.

Witnesses:

SYDNEY J. PRESCOTT,
 ELIZABETH LOUISE RUSSELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."