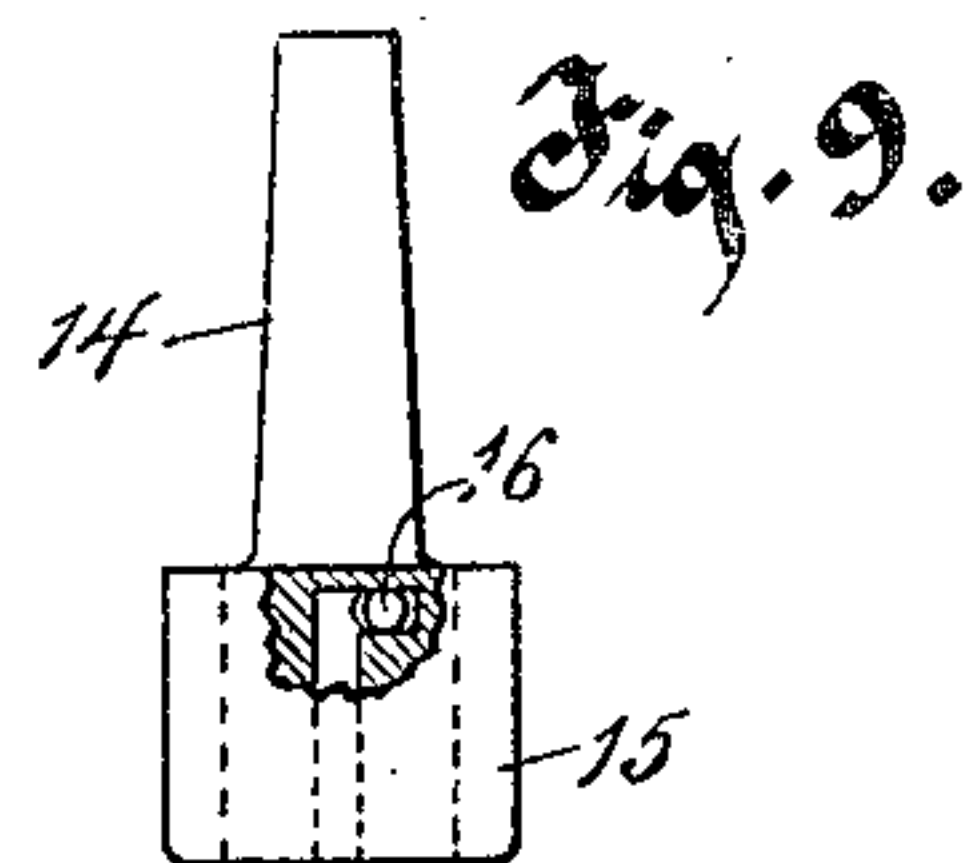
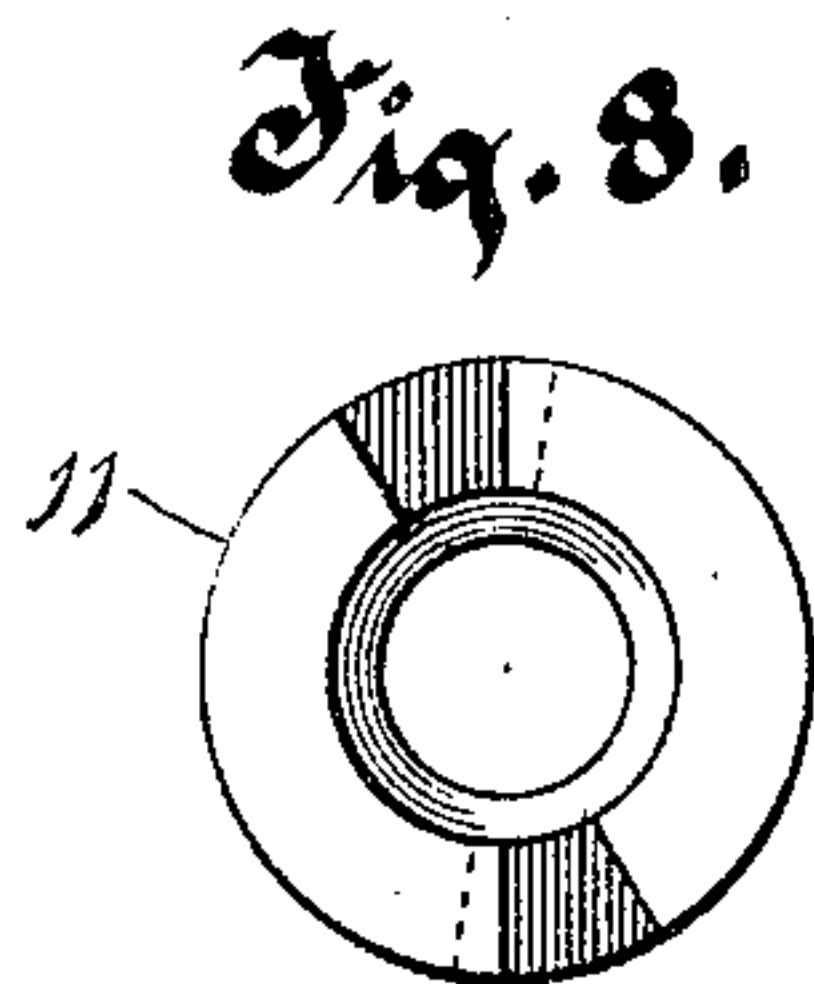
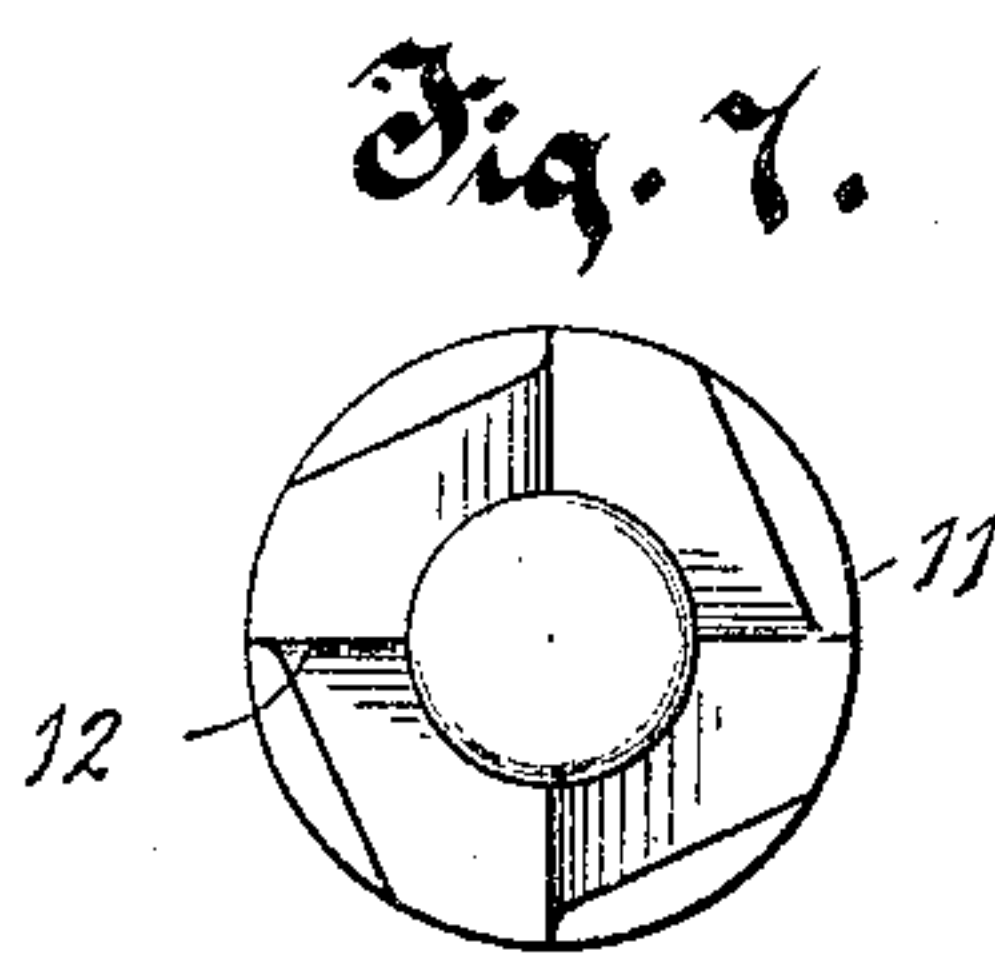
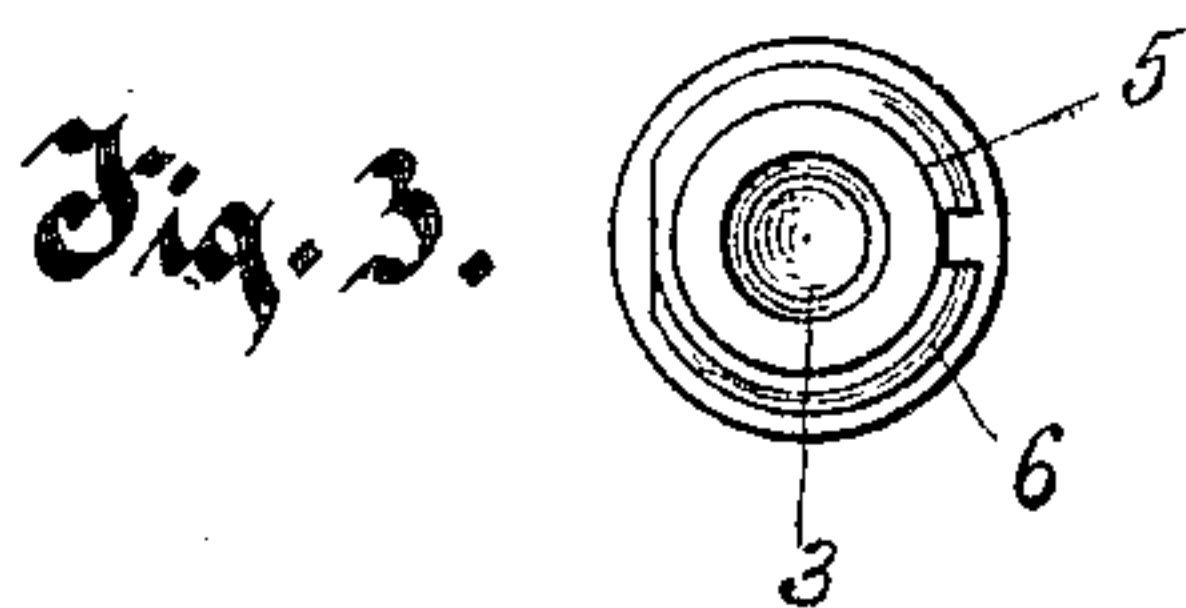
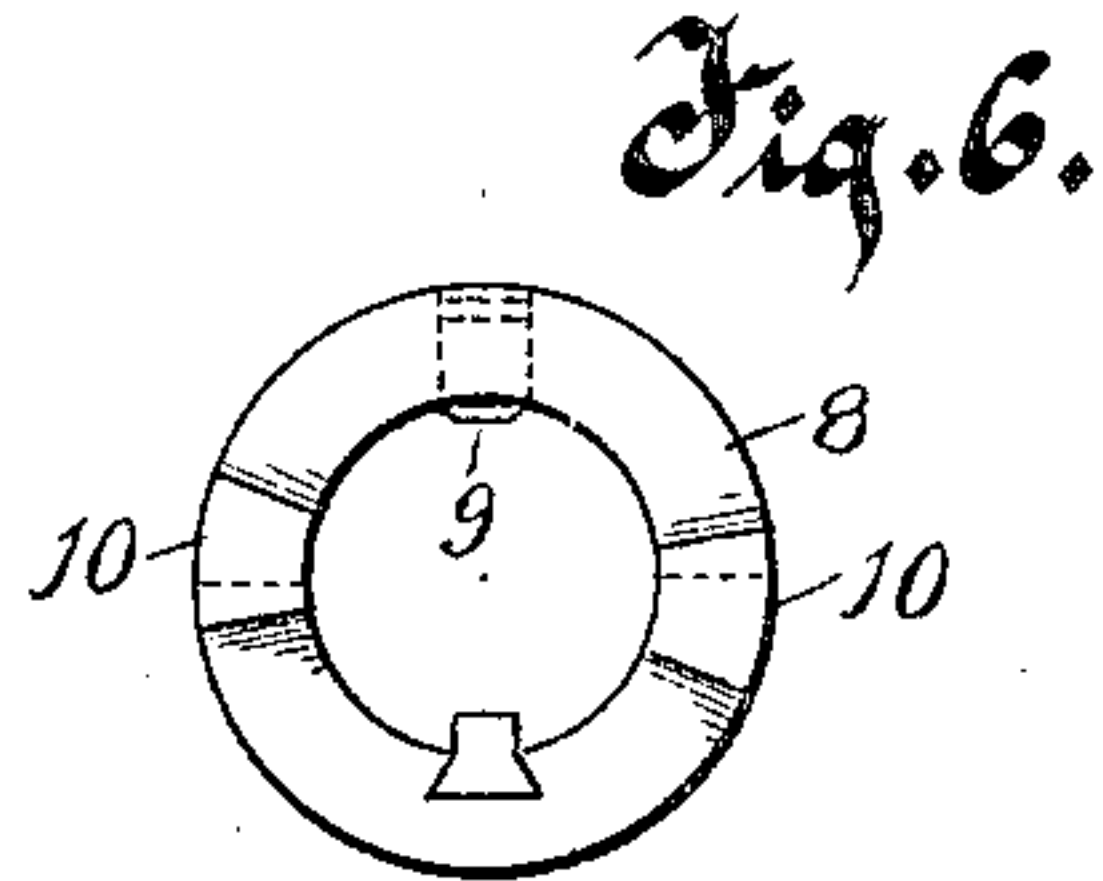
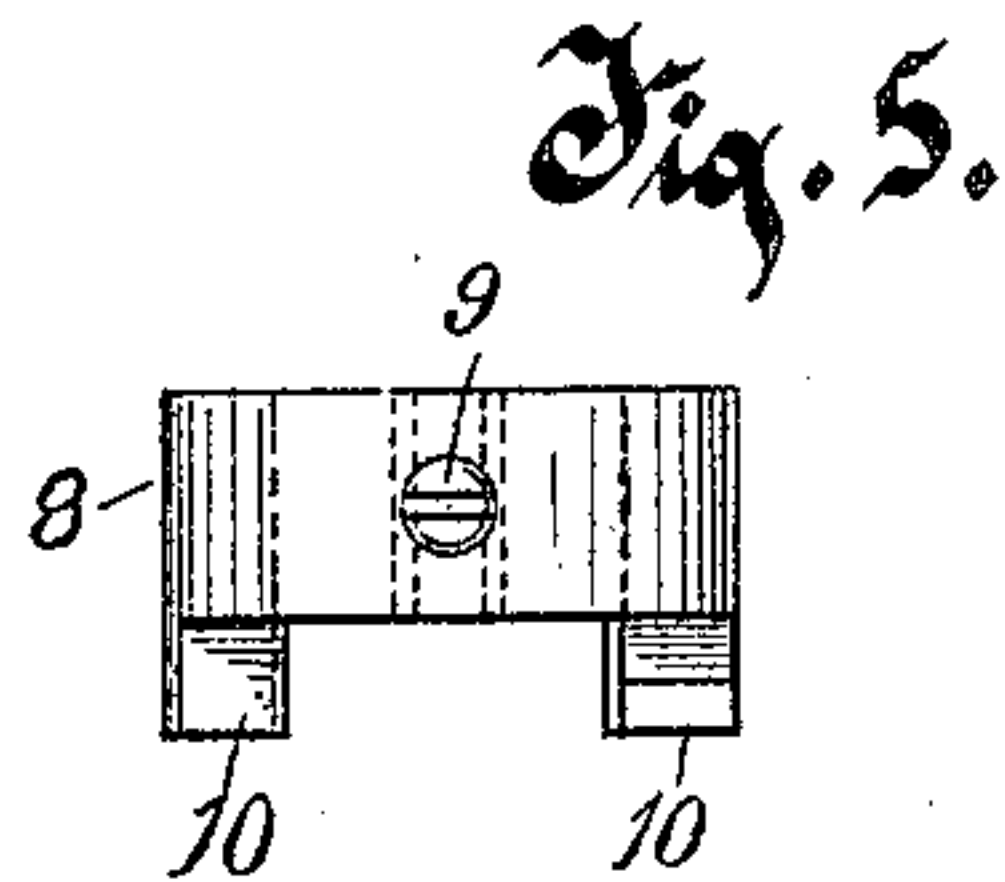
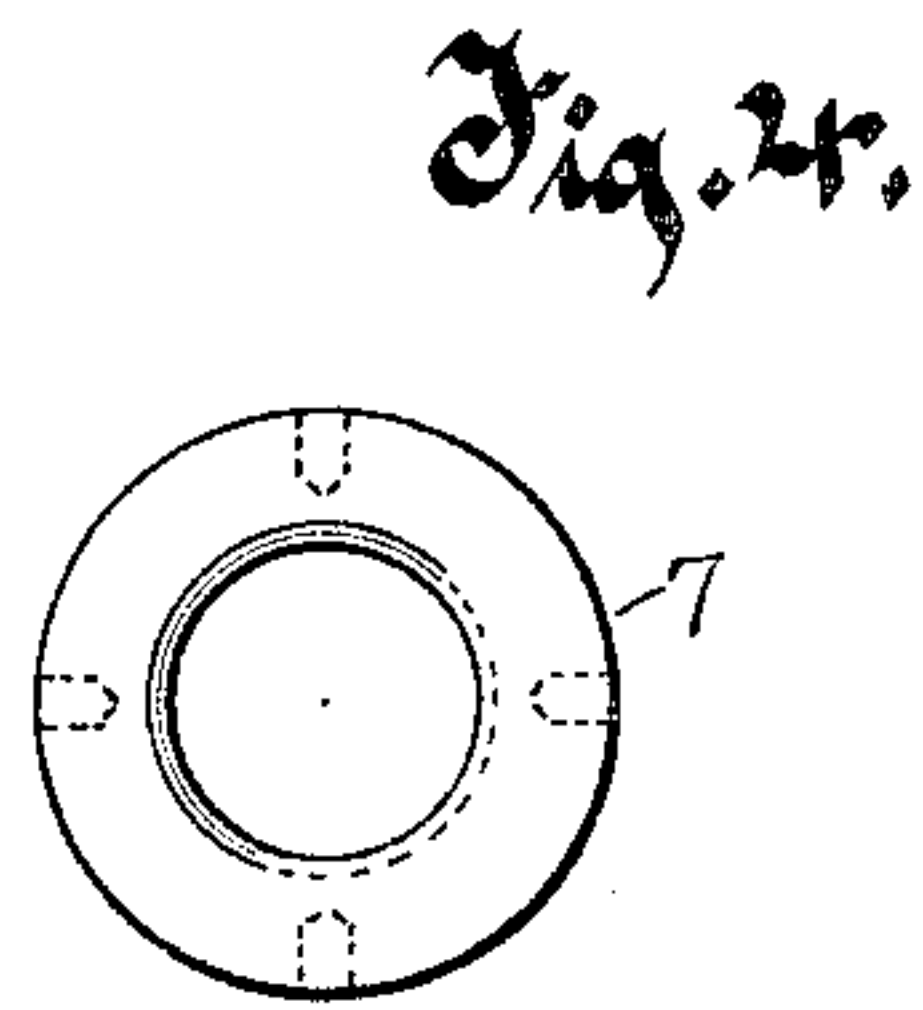
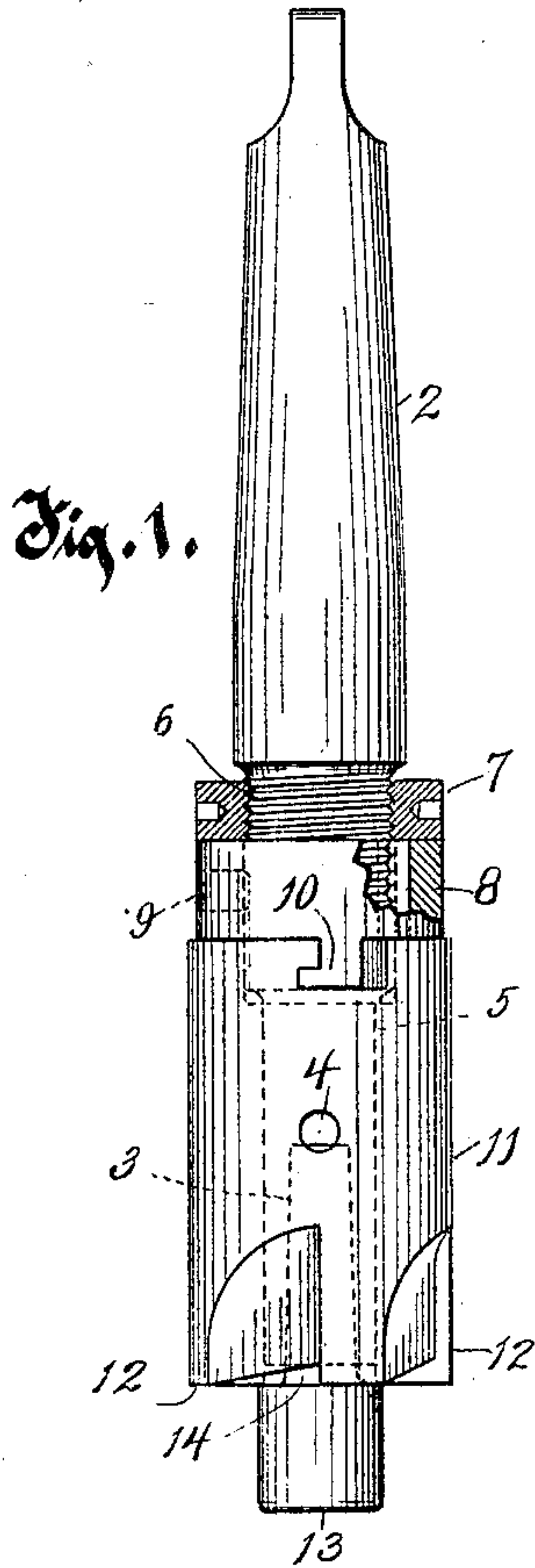
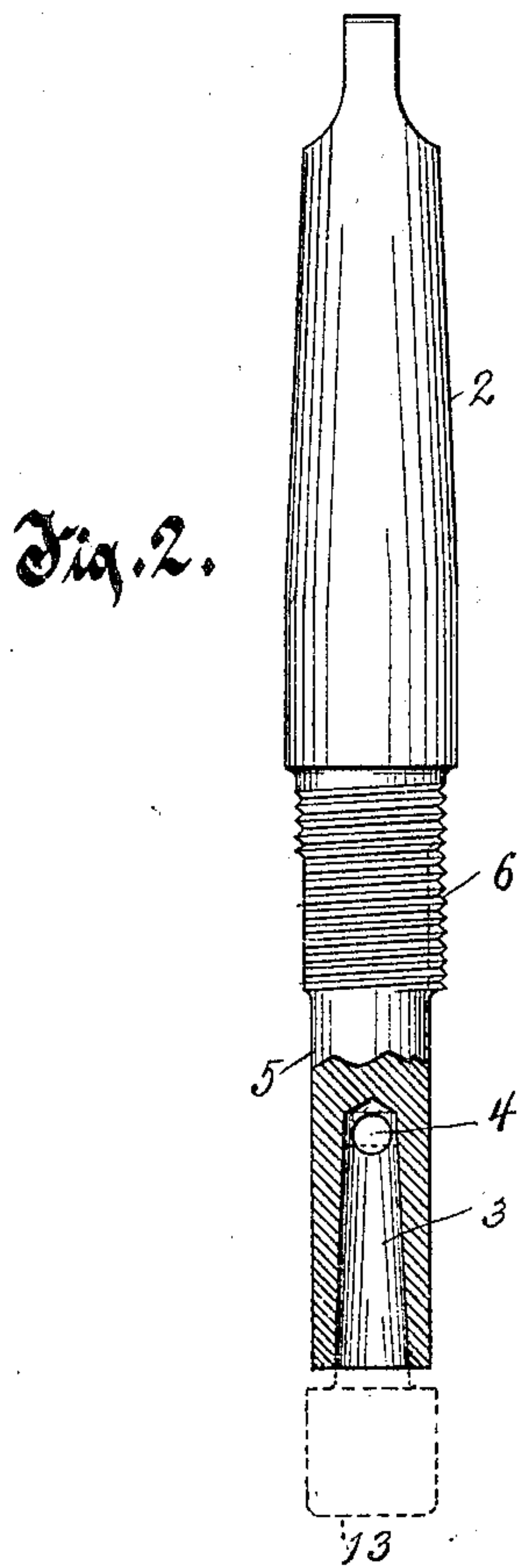


No. 802,968.

PATENTED OCT. 31, 1905.

G. BURKI.  
CENTER BIT.

APPLICATION FILED AUG. 22, 1904.



Witnesses.

Anna F. Schmidbauer  
Ida Lawrie

Inventor.

Gottfried Burki  
By Benedict Morell  
Attorneys.



# UNITED STATES PATENT OFFICE.

GOTTFRIED BURKI, OF MILWAUKEE, WISCONSIN.

## CENTER-BIT.

No. 802,968.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed August 22, 1904. Serial No. 221,684.

*To all whom it may concern:*

Be it known that I, GOTTFRIED BURKI, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Center-Bits, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention relates to a center-bit of the class that is provided with a plug-center or pilot adapted to guide the bit by means of a previously-bored hole which the bit is adapted to counterbore or enlarge.

The invention consists of the improved bit, its parts and combinations of parts, as herein described and claimed or the equivalents thereof.

Figure 1 illustrates my improved bit, a part being broken away and other parts being shown in section to conveniently illustrate interior construction. Fig. 2 shows the shank of the bit, partly in section, the adjustable and detachable members of the bit being left off. Fig. 3 is a front end view of the shank of the bit shown in Fig. 2. Fig. 4 is an end view of an adjustable nut which is a member of the completed bit. Fig. 5 is a side view of a collar, also a member of the completed bit. Fig. 6 is a front end view of the collar shown in Fig. 5. Fig. 7 is a front end view of the shell or cutting-head of the bit. Fig. 8 is a rear end view of the same shell or cutting-head, and Fig. 9 illustrates the plug-center or pilot with an annular sleeve thereon by means of which the pilot is enlarged.

In the drawings, 2 indicates the shank of the bit, which shank at its front end is provided with a bore 3, advisedly beveled inwardly to receive therein the stem of the detachable pilot, and with a transverse knock-out hole 4, this bore 3 and the knock-out hole 4 being in the front contracted neck 5 of the shank, and at the rear of the neck the shank is screw-threaded, as shown at 6. An adjusting-nut 7, provided with spanner-holes, turns on the screw-thread 6 of the shank. A collar 8 is splined on the shank in front of the nut 7 and is adjustable thereon, being held in place against movement endwise by its own weight and the weight of the shell by a set-screw 9 turning through the collar against a face on the screw-threaded portion of the neck 5. The collar has on its front end one or more shell-engaging devices, advisedly in the form of bayonet-clutches 10. The shell or cutter-head 11 is bored axially to fit adjust-

ably and removably on the neck of the shank and is provided in its rear end with recesses adapted to receive therein and by their walls to engage the bayonet-clutches 10 on the collar 8. The shell may be provided with cutting edges or knives 12, both on its periphery and on its face or front end. These knives or cutting edges may be straight or spiral or of any desired pattern adapting them for the special work for which the bit is to be employed.

The center-plug or pilot 13 is of cylindrical form and of less diameter than the diameter of the shell and is provided with a stem 14, adapted to fit tightly in the bore 3 therefor in the neck of the shank 2, being readily detachable therefrom by a tool therefor inserted in the knock-out hole 4, which extends through the shell as well as through the neck of the shank. In the form of pilot shown in Fig. 9 the pilot is provided with a longitudinal recess in its outer surface, the recess at the inner end having a laterally-extending terminal portion. A pilot-sleeve 15, fitting on the pilot, is provided with an inwardly-projecting pin 16, that enters the recess in the pilot and is adapted to secure the sleeve detachably on the pilot. By this device, made in different sizes or thicknesses, the diameter of the pilot may be increased to any desired extent to cause it to fit into the previously-bored hole into which the pilot is to enter as a guide for the bit.

The construction is such that when the knives of the shell have become dulled by use the shell can be readily removed for sharpening the knives or cutting edges by grinding or any other suitable means, and this is readily accomplished by inserting a tool therefor in the knock-out hole and removing the pilot, and then by slightly turning the shell to release it from the clutches 10 it can be removed endwise from the shank of the bit, and when by use or by sharpening the end cutters or knives on the shell shall have become so worn away as to thereby shorten the shell the collar 8 can be moved toward the front end of the shank by loosening the set-screw 9 and by turning the nut 7 against the collar, forcing it forward toward the front end of the shank to such extent as is necessary to bring the shell up to the pilot, when the shell is in engagement with the collar in the manner illustrated in Fig. 1.

What I claim as my invention is—

1. A center-bit, comprising a shank, a central pilot, an adjusting-nut turning by screw-



thread on the shank, a collar splined on the shank in front of the nut, and a cutting-head encircling the shank in front of and secured detachably to the collar and adjustable end-  
5 wise with reference to the shank and the pilot by the nut.

2. In a center-bit, a shank provided with a screw-thread, a nut turning on the screw-thread about the shank, a collar splined on the  
10 shank abutting against the nut, and a cutting-head on and encircling the shank in front of the collar and secured detachably thereto and adjustable endwise thereon by said nut.

3. In a center-bit, a shank provided with a  
15 screw-thread, a nut turning on the screw-

thread, a collar splined on the shank and abutting against the nut and provided with a bayonet-clutch on its front end, a cutting-head fitting detachably on the front portion of the shank and having means to engage the  
20 bayonet-clutch on the collar, and a pilot on and preceding the shank and within the circle described by the cutters.

In testimony whereof I affix my signature in presence of two witnesses.

GOTTFRIED BURKI.

Witnesses:

C. T. BENEDICT,

ANNA F. SCHMIDTBAUER.