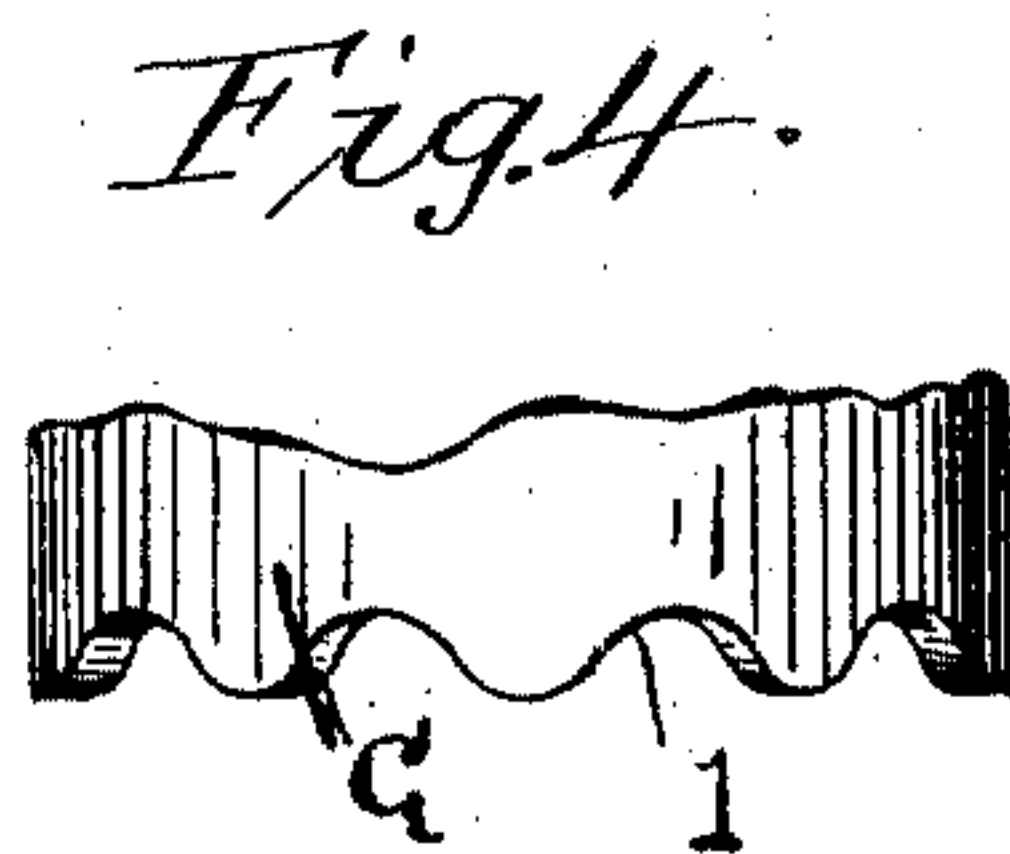
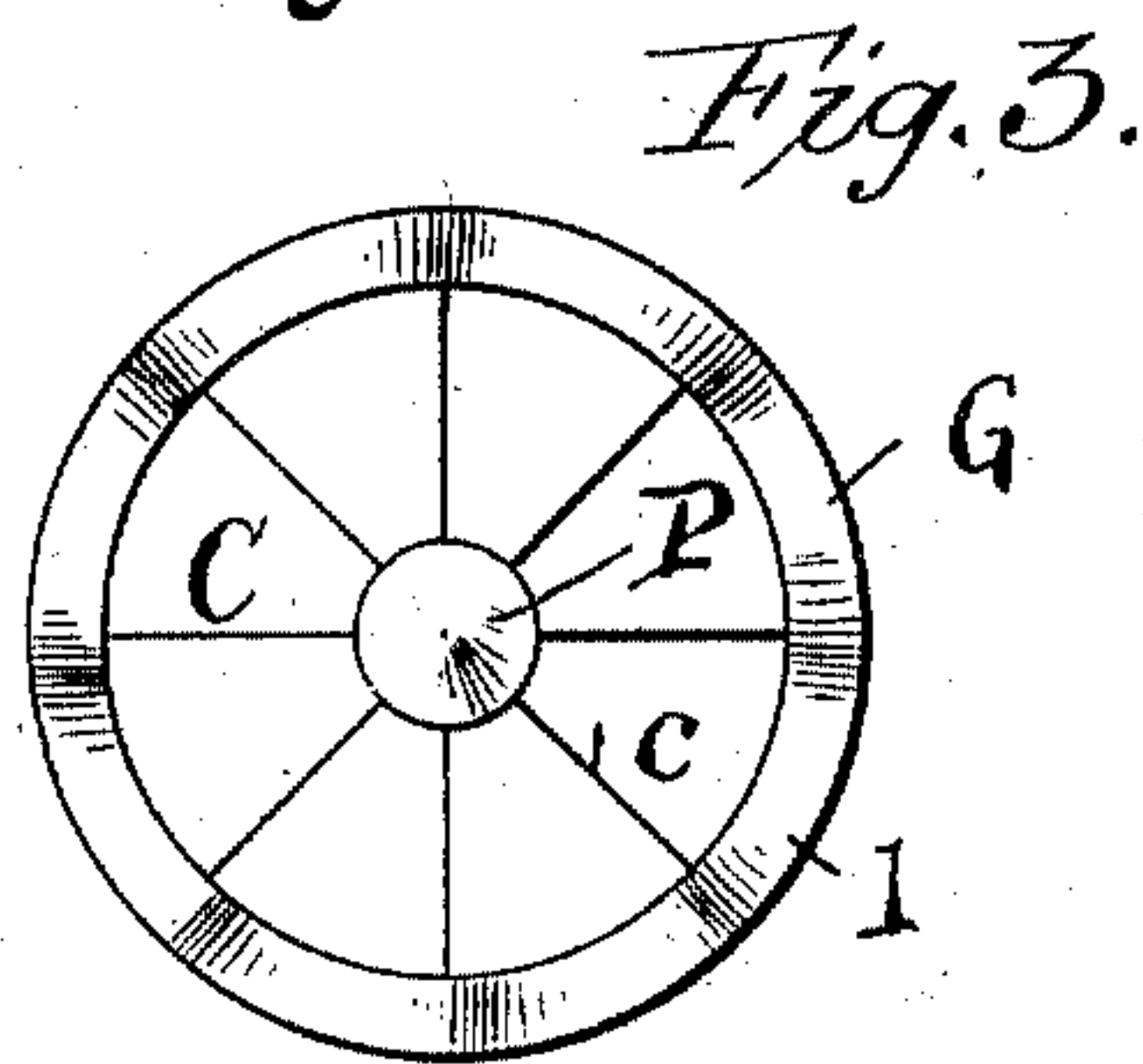
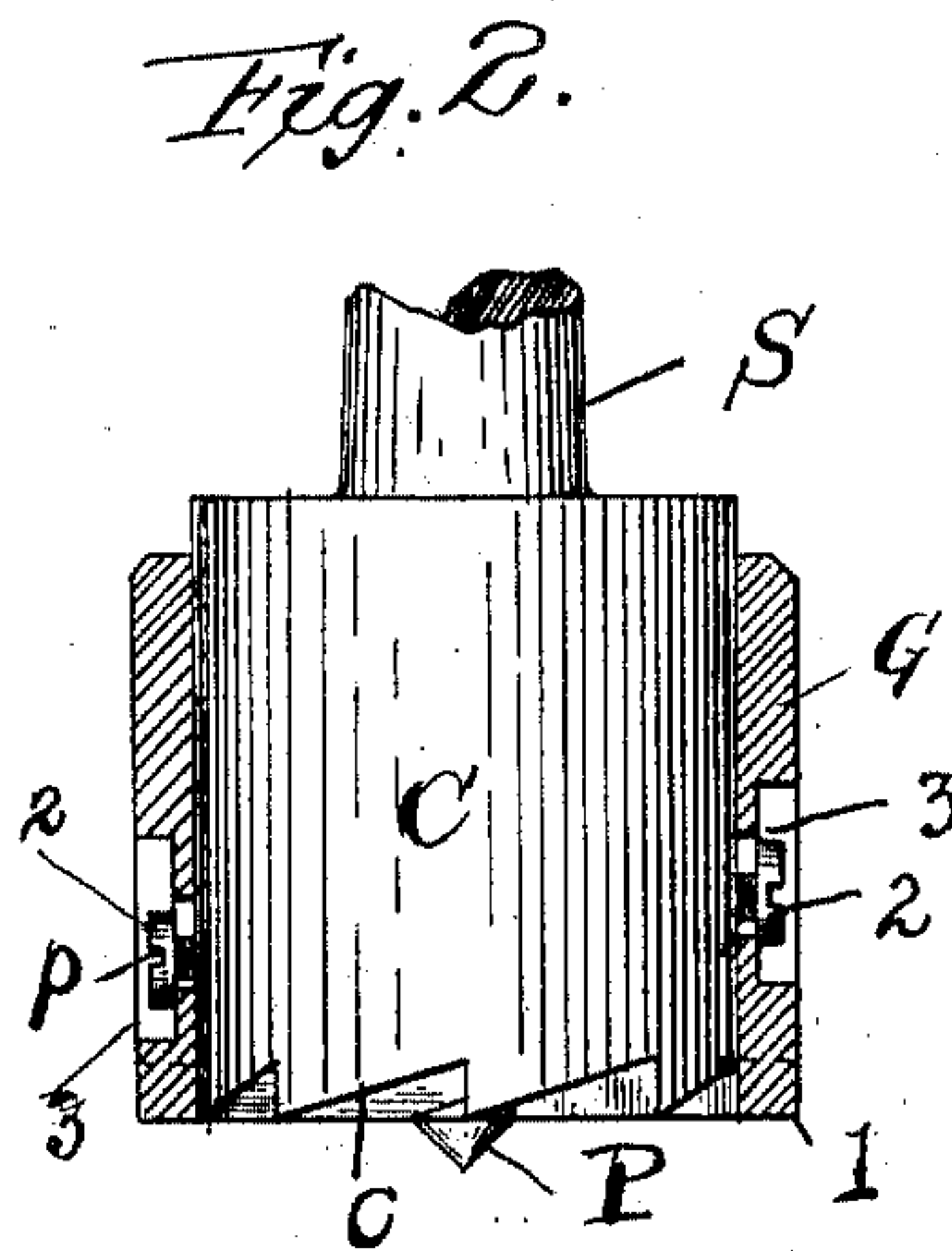
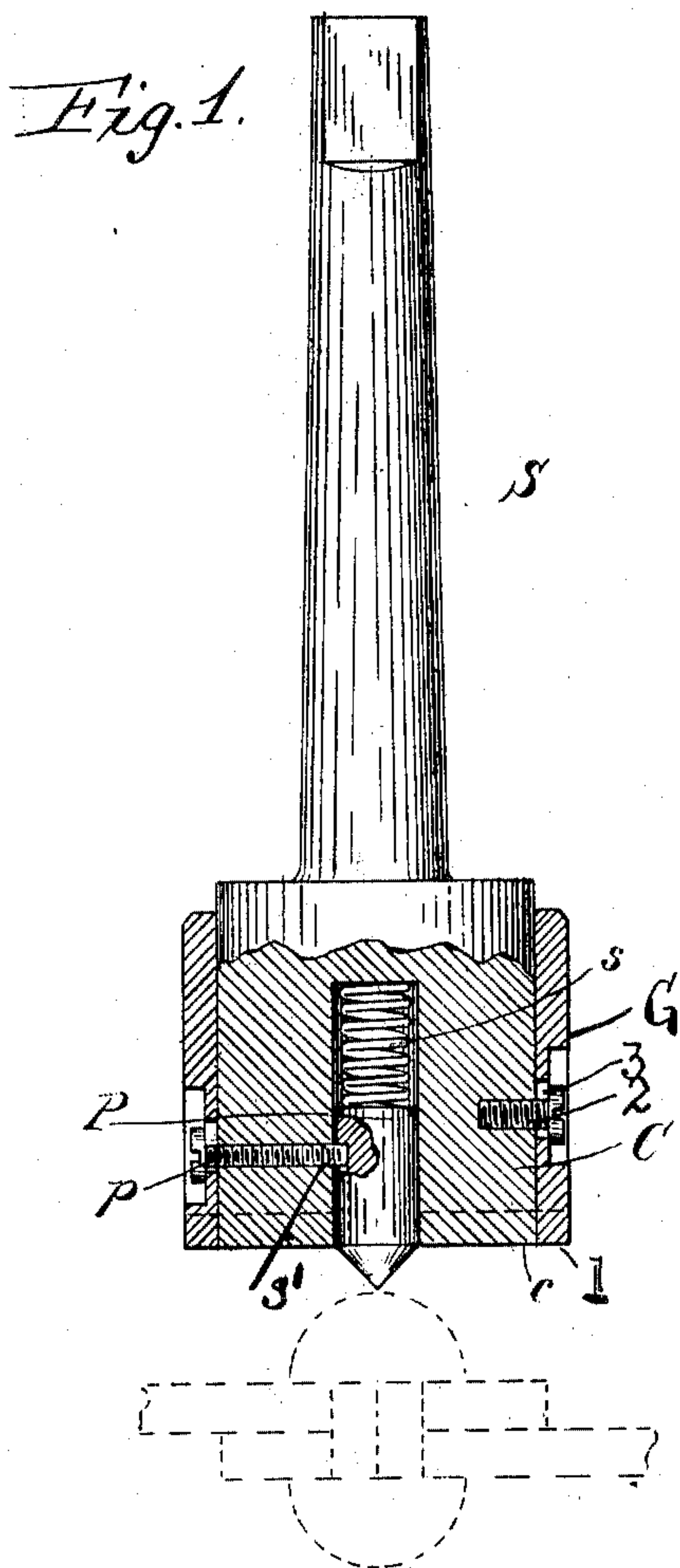


No. 760,154.

PATENTED MAY 17, 1904.

J. W. ROBINSON.
TOOL FOR ROUTING RIVETS.
APPLICATION FILED MAY 5, 1903.

NO MODEL.



WITNESSES:
Frank W. Karsley-
Raena H. Yudizky.

INVENTOR:
James W. Robinson,

BY
A. Faber du Roy,
ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES W. ROBINSON, OF NEW YORK, N. Y., ASSIGNOR TO ADOLPH FABER DU FAUR, JR., AND JAMES A. BROWN, OF NEWARK, NEW JERSEY.

TOOL FOR ROUTING RIVETS.

SPECIFICATION forming part of Letters Patent No. 760,154, dated May 17, 1904.

Application filed May 5, 1903. Serial No. 155,703. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. ROBINSON, a subject of the King of England, residing at New York city, in the county of Kings and State of New York, have invented certain new and useful Improvements in Tools for Routing Rivets, of which the following is a specification.

My invention has reference to a routing tool or implement adapted for cutting or grinding off an annular portion of rivet or bolt heads for the purpose of permitting the removal of said rivets or bolts, and has for its object to provide means for readily effecting the removal of the rivet or bolt by grinding or cutting off the outer portion of the rivet-head to leave a projecting shank adapted to be struck with the hammer.

To this end my invention consists, essentially, in a rivet or bolt routing tool comprising a cutter-head having means for its attachment and a longitudinal cavity, the annular cutting or abrading surface being substantially at right angles to the axis of the cutter-head and extending sufficiently outward from said cavity to substantially cover the rivet-head, a yielding center-pin in said cavity movable in the direction of the axis of the cutter-head, and means for retaining the center-pin in the latter.

The nature of my invention will best be understood when described in connection with the accompanying drawings, in which—

Figure 1 represents a sectional elevation of a tool embodying my invention, showing the same in a position ready to act upon a rivet. Fig. 2 is a sectional elevation with part broken away. Fig. 3 is a bottom view of Fig. 2. Fig. 4 is an elevation of the guard-sleeve, part being broken away.

Similar letters and numerals of reference designate corresponding parts throughout the several views of the drawings.

Referring now to the drawings, the letter S designates a shank forming part of the tool and adapted to be inserted into any of the usual forms of rotary mechanism used for the

purpose of drilling and for other purposes as well known in ordinary practice. At the outer end of the shank is located a cutter-head C, which may be made separate from the shank and secured thereto either by welding or in any other well-known manner or made integral with said shank. Centrally with respect to this cutter-head is located a pin P, which is guided within said cutter-head, the same being formed substantially the same as a lathe-center, but is mounted or supported to be capable of yielding under pressure. This method of mounting may be accomplished by supporting the center-pin by a spring s, located in a central bore of the cutter-head C and preferably prevented from turning by a stud p, extending through said head and entering a longitudinal slot s' in said pin. The purpose of this stud is to hold the center-pin within the cutter-head and at the same time to permit it to yield inwardly as the tool advances against the rivet. The cutter-head is provided at its outer end with cutting or abrading surfaces c, adapted to grind or cut away material of the rivet or bolt head, so as to permit the removal of the rivet or bolt after the removal of the head by driving or punching out in the usual manner. The abrading-surface extends directly and continuously from the cavity to the outer periphery of the cutter-head and is at substantially right angles to the longitudinal axis of said cutter-head. In the present instance I have shown the cutter-head in the form of a mill with radial teeth extending outwardly from the central cavity sufficiently to cover the rivet-head.

While the tool as hereinbefore described would be effective for the removal of rivets, there is nothing at present to determine just when the rivet-head is completely removed. Injury to the sheet metal of the boiler or other apparatus might result by continued action of the cutting-tube. Therefore I provide a guard G, made in the form of a sleeve and surrounding the cutter-head, the outer edge of said guard being preferably scalloped

or rounded, as at 1, and said outer edge being arranged substantially in the same plane with the outer plane of the cutting-blades of the cutter-head C. This guard is secured to the
5 cutter-head by means of a screw 2 and slot 3, connected so that it can be adjusted relatively to the cutter-head. Consequently this guard can be adjusted to prevent any damage to the boiler-sheet after the rivet-head is removed,
10 which would not be the case if no such provisions were made.

I do not wish to restrict myself to any particular means for adjusting the guard or to any particular means for grinding the rivet
15 or bolt head or to any particular means for actuating the device, as my invention consists, essentially, in a tool for removing the heads of rivets or bolts by the action of a rotary head.

20 It will be readily understood when the tool is applied to a rivet the head of which has previously been center-punched the action of the cutters on the cutter-head while under rotation will rapidly shave or grind off the head
25 of the rivet, leaving the remainder of the rivet to be punched out in the usual manner.

In practice I prefer to make the diameter of the centering-stud less than the shank of the usual rivet—say less than one-half inch—so
30 that when the tool has operated on the head of the rivet the part of the head left standing is of smaller diameter than the shank of the rivet, (respectively the rivet-hole), so that the rivet can be readily driven out.

What I claim as new is—

1. A rivet or bolt routing tool comprising a cutter-head having means for its attachment and a longitudinal cavity, the annular cutting or abrading surface being substantially at right angles to the axis of the cutter-head and extending sufficiently outward
40 from said cavity to substantially cover the rivet-head, a yielding center-pin in said cavity movable in the direction of the axis of the cutter-head, and means for retaining the center-pin in the latter, substantially as described. 45

2. A rivet or bolt routing tool comprising a cutter-head having means for its attachment and a longitudinal cavity, and said cutter-head provided with radial teeth having
50 cutting edges lying in a plane substantially at right angles to the longitudinal axis of the cutter-head and extending sufficiently outward from the cavity to substantially cover the rivet-head, a yielding center-pin in said cavity
55 movable in the direction of the axis of the cutter-head, means for retaining the center-pin in the latter, and an adjustable guard surrounding the cutter-head for limiting the ultimate depth of the cut, substantially as described. 60

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

J. W. ROBINSON.

Witnesses:

RAENA H. YUDIZKY,
FRANK W. KEARSLEY.