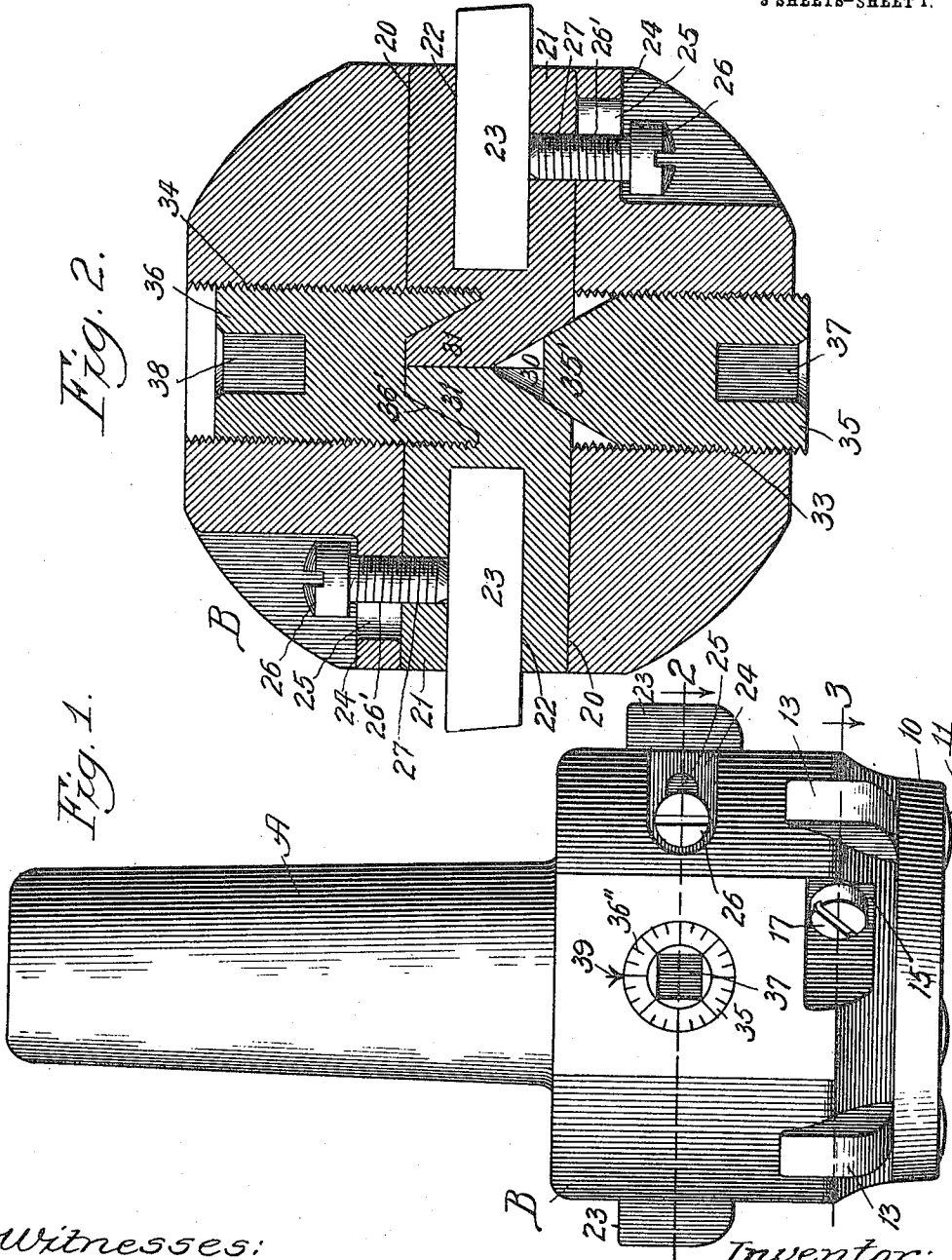


C. J. CROWLEY.
TOOL HOLDER.
APPLICATION FILED MAY 27, 1911.

1,062,225.

Patented May 20, 1913.

3 SHEETS-SHEET 1.



Witnesses:

John Enders

Edythe M. Anderson.

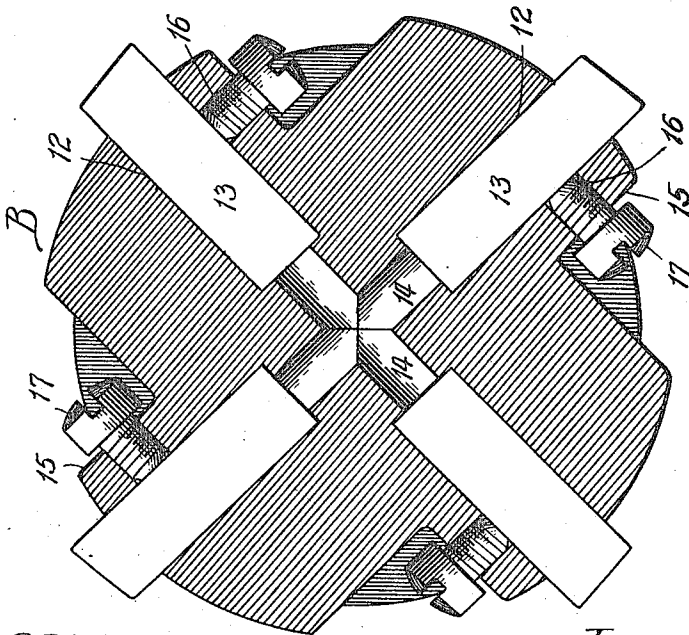
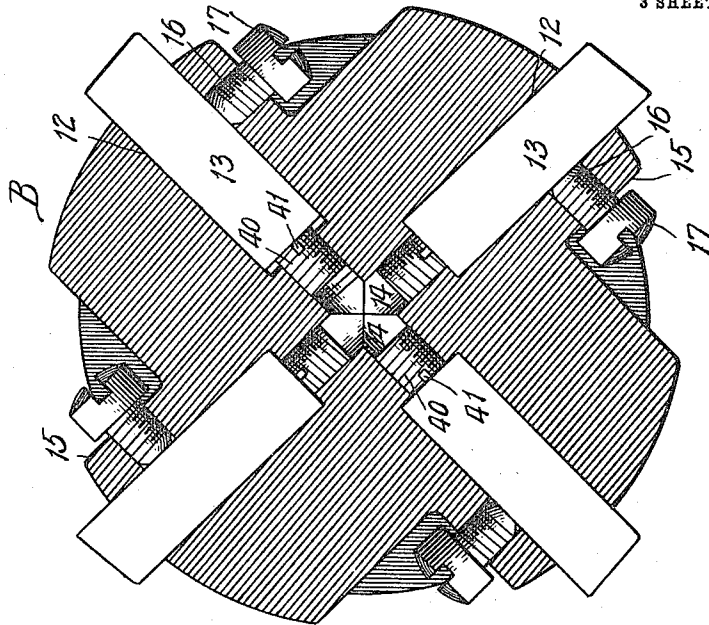
Inventor:

Cornelius J. Crowley,

by Sheridan, Wilkinson, Scott & Richardson
Attys.

1,062,225.

3 SHEETS—SHEET 2.



Inventor:

Cornelius J. Crowley,

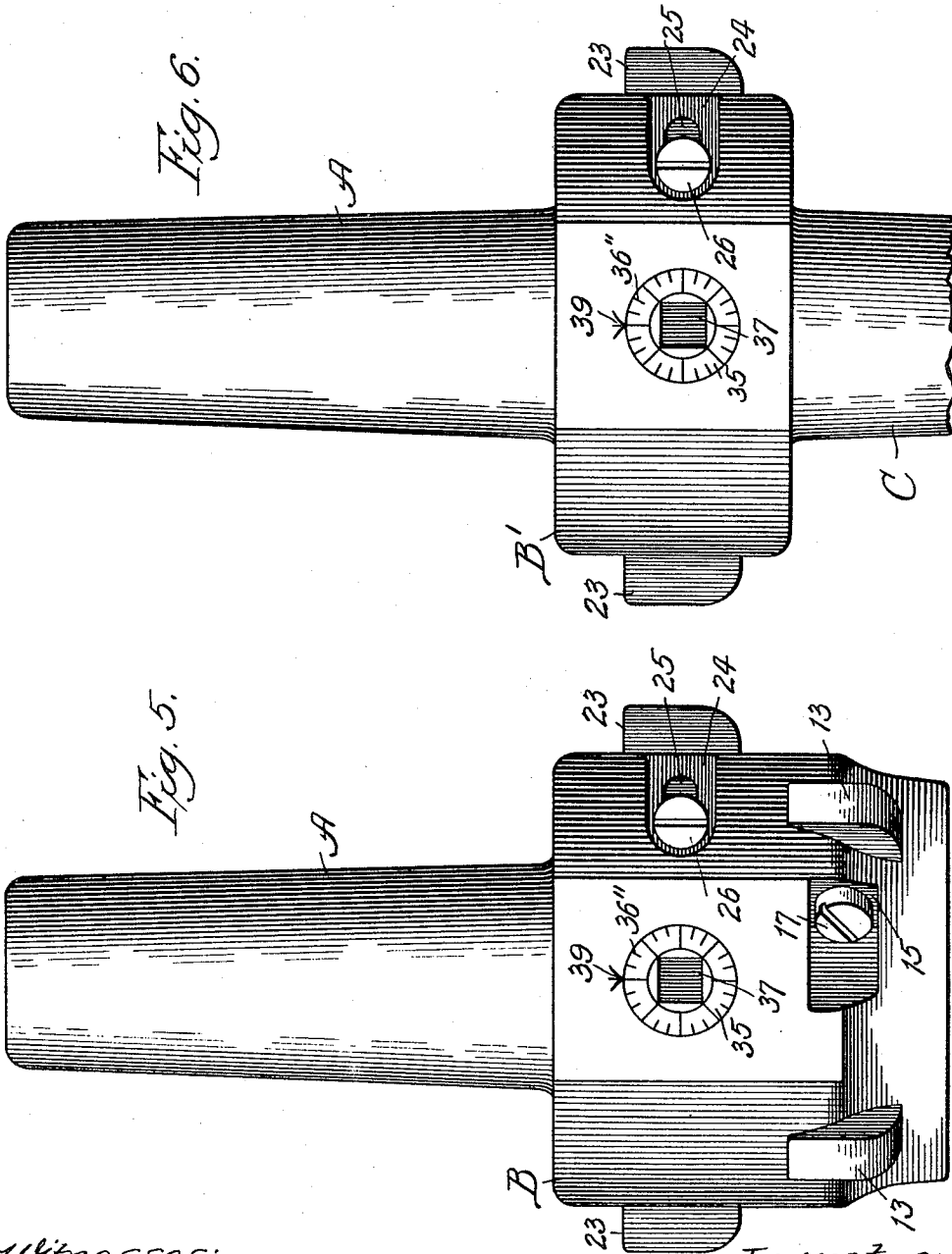
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3 SHEETS—SHEET 3.



Witnesses:

John Anders
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UNITED STATES PATENT OFFICE.

CORNELIUS J. CROWLEY, OF BURLINGTON, IOWA.

TOOL-HOLDER.

1,062,225.

Specification of Letters Patent.

Patented May 20, 1913.

Application filed May 27, 1911. Serial No. 629,811.

To all whom it may concern:

Be it known that I, CORNELIUS J. CROWLEY, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented certain new and useful Improvements in Tool-Holders, of which the following is a specification.

This invention relates to an improvement in tool holders or chucks.

One object of this invention is to provide a holder carrying two sets of cutting tools, one set for making a roughing cut and one adjustable set for making a finishing cut, both cuts being made in one operation.

It is especially adapted for boring car wheels or other appliances where the hole bored is to fit axles or shafts whose diameters may vary one from another.

Other advantages and objects of my invention will appear from reading the specification and claims.

In the drawings—Figure 1 is a side elevation of my device. Fig. 2 is a cross section on the line 2 of Fig. 1. Fig. 3 is a cross section on the line 3 of Fig. 1. Fig. 4 is a section similar to Fig. 3 showing a slight modification. Fig. 5 shows a slight modification of my improved device. Fig. 6 shows my device as constructed where only one set of tools is used.

Like reference characters refer to like elements throughout the drawings, in which—

A designates the shank or tail of a tool holder having a head or body B. The lower face of the body B is provided with a detachable bottom plate 10 normally held in place by set screws 11 or otherwise or may be made solid without the detachable plate. (See Fig. 5.) The holder B proper is provided with radially arranged sockets 12 near the lower extremity thereof adapted to carry cutting tools 13, as shown in Fig. 3. Apertures or holes 14 lead from the ends of the sockets 12. Portions of the body B of the chuck are cut out to form shoulders 15 parallel to the sides of the tool holding sockets 12 and through these shoulders 15 are drill holes 16 threaded to provide engagement for set screws 17 intended to bear

against the sides of the tools 13 when in position and to secure the same in position.

Preferably arranged above the sockets 12 in the body B of the chuck or holder are the larger sockets 20, as shown in Fig. 2 of the drawings. Operating in these sockets are two similar tool holders 21 provided with sockets 22 for the reception of tools 23. The body of the holder B is cut away adjacent these large sockets 20 in a similar manner to the cut away portion adjacent the other sockets 12, and shoulders 24 are thereby formed in which are provided elongated slots or apertures 25 permitting the free movement of the threaded portions 26 of inserted set screws 26 having threaded engagement with the aperture 27 in the tool holders 21. These set screws 26 project through the apertures 27, as explained above, and are intended to abut against the sides of the tools when in position and hold the same securely in position in the tool holders 21. The tool holders 21 are similarly formed at their inner ends, on the one side with semi-conical bosses 31 and on the other side with semi-conical cavities 30. By this construction when the inner ends of the tool holders 21 are in contact a conical or frusto-conical boss will be formed at one side by the portions 31 and a conical socket or cavity will be formed at the other side by the semi-conical depressions or cavities 30.

Threaded holes 33 and 34 are provided in the body B of the chuck at right-angles to the sockets 20. These apertures are in alignment one with the other and have an axis in common with the conical boss and cavity at the inner ends of the tool holders 21. Threaded into engagement with the hole 33 is a male plug 35 having a conical or frusto-conical projection 35' seating in the conical socket formed by the semi-conical depressions 30. Threaded into engagement with the other hole 34 is the female plug 36 provided with a seat 36' at its inner extremity coacting with and forming a socket for the conical boss formed by the portions 31 of the tool holders 21. These plugs 35 and 36 are provided at their outer extremities with non-circular apertures 37 and 38, respec-

tively, into which is adapted to be inserted a wrench for their adjustment. It is obvious that any other means of engaging and rotating these plugs might be substituted.

5 Located preferably on the outer face of the plug 35 is a series of marks or indications furnishing a dial to be used in connection with the indicating mark or point 39 on the body of the chuck furnishing a means of ascertaining the amount of adjustment of the male plug. This means may also be furnished for the other plug if so desired.

10 In Fig. 4 I have indicated a modification for use in connection with the use of the lower series of cutters 13. The apertures 14 are threaded, and threaded plugs 40 are in engagement therewith. These plugs 40 are provided with a flat outer surface and a slot 41 or other means of operation. The purpose of these plugs is to furnish a seat for the inner extremity of the cutting tool 13 when it is found that of the series of cutters one or more is of slightly different length than the remainder. It is obvious that by screwing these plugs in or out the difference in the length of the cutting tools may be compensated for before securing them in place.

Fig. 5 shows a slight modification of the device shown in Fig. 1. In this modification I show the device constructed with a solid base without the detachable plate 10 shown in Fig. 1.

15 In Fig. 6 I have shown a further modification, in that I have constructed the device with a holder B' formed with sockets for only the tool holders 21 for use where a plurality of sets of cutters is not needed or desired to be used. In this modification I have shown an integrally formed guide bar C projecting from the base of the holder B'. It is obvious that this guide bar may be omitted if it be found that it is not desired.

20 Before the insertion of my chuck in the machine the roughing cut tools 13, if such are desired to be used, are secured in their fixed position and the finishing cutters 23 are inserted and the holders drawn entirely in, as shown in Fig. 2 of the drawings. Obviously the cutters 23 are of such a dimension that in the drawn-in position shown in Fig. 2 they will not cut the bore desired so that they may be adjusted to that desired position. In performing such an adjustment the female plug 36 is withdrawn by unscrewing the same and the male plug 35 is then advanced a sufficient amount, as indicated by the dial face 36'' and the indicator 39, to spread the ends of the holders 21 and advance the cutters 23 to their proper cutting positions. The female plug is then screwed down to its final position when it will tightly engage by its seat 36' the ends 31 of the holders 21, thus forming a secure adjusting

and holding means for the finishing cutter 65 tool. It is obvious that this furnishes a very expedient means of carefully adjusting the finishing tools or other tools carried by the holders 21 to any desired position, and at the same time furnishes a combined adjusting and locking means for the holders 21.

What I desire to cover by United States Patent, and claim is:

1. In a device of the class described, a head, said head being provided with sockets, a pair of tool holders carried in said sockets, each of said tool holders having its inner end formed with a projection on one side and with a depression on the opposite side whereby when said ends of said holders are in contact a boss will be formed on one side by said projections and a cavity on the other side by said depressions, and means coacting with said boss and said cavity to adjust said holders and said head.

2. In a device of the class described, a head, said head being provided with sockets, a pair of tool holders carried in said sockets, each of said tool holders having its inner end formed with a projection on one side and with a depression on the opposite side whereby when said ends of said holders are in contact a boss will be formed on one side by said projections and a cavity on the other side by said depressions, and means coacting with said boss and said cavity to adjust said holders and said head, said means being adapted to lock said holders in adjusted position.

3. In a device of the class described, a shank and a head, said head being provided with sockets, a pair of tool holders carried in said sockets, said tool holders having their inner ends formed of semi-conical bosses on one side and with semi-conical cavities on their opposite sides whereby when said ends of said holders are in contact a conical boss will be formed on one side and a conical socket on the other side, and means coacting with said holders to adjust the same in relation to said head, said means comprising a pair of plugs adjustably engaging apertures in said head, one being provided with a seat for said conical boss and one with a conical extremity seating on said conical seat at the ends of said tool holders whereby when said first named plug is withdrawn, said second named plug may be advanced to separate the said ends of said holders to advance the holders and tools carried thereby and vice versa.

4. In a device of the class described, a shank and a head carried thereby, said head being provided with sockets and slots leading from said sockets at right angles thereto, a pair of tool holders carried in said sockets, a combined adjusting and locking

means coacting with said tool holders to
adjust and hold the same in adjusted posi-
tion, and means to hold the tools firmly in
said tool holders, said means being adapted
5 to slide in the slots in said heads when said
tools are adjusted.

In testimony whereof, I have subscribed
my name.

CORNELIUS J. CROWLEY.

Witnesses:

GEO. L. WILKINSON,
EDYTHE M. ANDERSON.