J. A. ANDERSON.

PUNCH.

APPLICATION FILED SEPT. 14, 1915.

1,200,450. Patented Oct. 10, 1916.

Fig. 1.

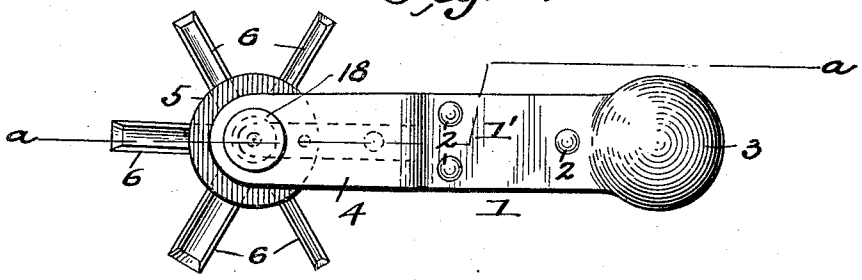


Fig. 2.

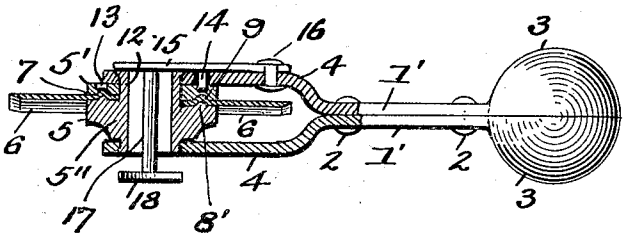


Fig. 3.

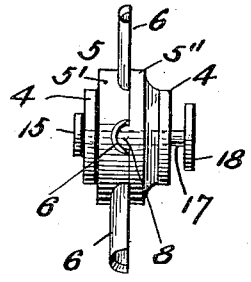


Fig. 4

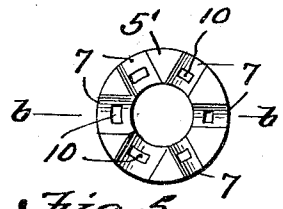


Fig. 6.

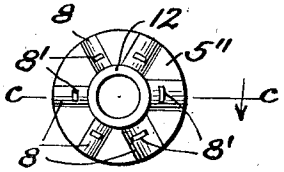


Fig. 5.

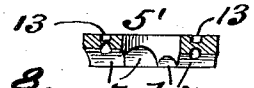


Fig. 7.

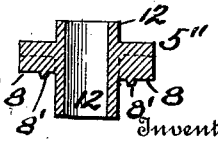


Fig. 8.

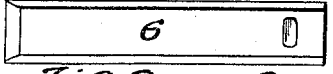
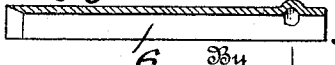


Fig. 10.



Fig. 9.



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UNITED STATES PATENT OFFICE.

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PUNCH.

1,200,450. Specification of Letters Patent. Patented Oct. 10, 1916.

Application filed September 14, 1915. Serial No. 50,620.

To all whom it may concern:

Be it known that I, JOHN A. ANDERSON, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Punches, of which the following is a specification.

The invention relates to improvements in punches, and particularly to the type shown in Letters Patent No. 1,114,666, granted to me October 20, 1914.

The object of the invention is to provide a hand punch or drill particularly adapted for producing holes in leather belts, relatively thin pieces of wood, and the like, without striking the end of the tool as is necessary with the construction shown in my aforesaid Letters Patent, the construction being such that the punch or drill may be used in the same manner as with a gimlet, or by simply reciprocating the tool so as to force the cutter through the material being operated upon.

The invention comprises a sectional handle member preferably stamped from sheet metal, and bent so as to provide a substantially spherical knob at one end to fit within the palm of the hand, and to provide forks or arms at its opposite end in which are journaled spindles of a sectional hub carrying a plurality of cutters of different diameters or gage, means being employed for rigidly holding the members of the punch in position, and for locking the hub against accidental rotation.

The invention further comprises certain peculiar details of construction and novel combinations and arrangements of parts as will be hereinafter fully described and then claimed.

In the drawings, illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation of my improved punch. Fig. 2 is a horizontal sectional plan view of the same drawn on the line *a*—*a* of Fig. 1. Fig. 3 is an end view of the punch. Fig. 4 is a face view of one section of the hub. Fig. 5 is a horizontal section of the same drawn on the line *b*—*b* of Fig. 4. Fig. 6 is a face view of the opposite section of the hub, the view illustrating the inner face thereof. Fig. 7 is a horizontal section drawn on the line *c*—*c* of Fig. 6. Fig. 8 is a face view of one of the cutters drawn on a larger scale. Fig. 9 is a horizontal section of the cutter. Fig. 10 is a transverse section drawn on the line *d*—*d* of Figs. 8 and 9.

1 designates the handle member of the punch or drill, preferably constructed of sheet metal and comprising two parts 1′, which are riveted together as shown at 2, each member being formed at one end with an outwardly bent portion providing an arm 4, so as to provide a fork in which is journaled a hub 5 carrying a plurality of cutters 6.

The hub 5 is formed of two sections, Figs. 2, 4, 5, 6 and 7, one section 5′ having a plurality of semi-circular radial grooves 7 in which are seated the inner ends of the cutters 6, while the opposite member 5″ of the hub is formed with semi-circular radial ribs 8 to fit within the inner ends of the cutters. The cutters 6 are struck up to provide lugs 9 upon one face thereof and a socket in its opposite face, the lugs 9, Figs. 2, 9 and 10, being designed to fit within recesses 10, Fig. 4, formed in the grooves 7 of the member 5′ of the hub, and the ribs 8 of the member 5″ of the hub are formed with lugs 8′ to fit within the recesses produced in the cutters 6. The hub member 5″ is formed with a hollow spindle 12, Figs. 2 and 7, which is journaled in openings formed in the outer ends of the arms 4, the ends of the spindle being riveted over the outer ends of the journals in the arms 4, whereby to hold the hub in position, and to prevent the arms from spreading and the consequent displacement of the hub.

In order to prevent the hub from rotating when any one of the cutters 6 is arranged in longitudinal alinement with the handle of the punch or drill, I provide the outer face of the member 5 with a plurality of sockets 13, Fig. 5, arranged in radial alinement with the grooves formed in the section 5′, the said sockets being designed to receive a locking pin 14, Fig. 2, carried by a flat spring 15 having its inner end riveted as at 16 to one of the arms 4 of the handle, and having its outer end provided with a shank 17, Fig. 2, which extends through the spindle 12 and terminates at its outer end in a thumb disk 18, the said locking pin operating in an opening formed in the arm 4 of the handle to which the spring is connected. By this arrangement when it is desired to rotate the hub so as to adjust any one of the cutters 6 into longitudinal alinement with the handle, one simply presses down upon the thumb

piece 18 to thus force the pin 14 out of the engaging socket 13, then by rotating the hub, a cutter of the desired gage may be readily adjusted into longitudinal alinement with the handle so that when pressure upon the thumb piece 18 is released, the spring 15 will force the locking pin 14 into engagement with the registering socket 13, thereby holding the hub rigidly in position and preventing its accidental rotation when pressure is exerted upon the cutting tool to force it against the work being drilled or punched.

In operation, the handle of the punch is grasped so that the knob 3 will rest in the palm of the hand, then by pressing the cutter against the work and rotating the punch as with the use of a screw driver or gimlet, or by rotating the punch in a reciprocal manner and pressing upon the handle, a hole may be quickly drilled or punched in the work being operated upon.

As stated, my invention relates particularly to improvements shown in Letters Patent No. 1,114,666, granted to me October 20, 1914. In my former punch it is necessary to strike the inner end of the handle in order to force the cutting end of the punch through the material to be perforated. I have found from experience that it is not always available to have a solid foundation for the punch, which is absolutely necessary in order to perforate the material. However, with my present construction, it is only necessary to hold the material in one hand and to press the cutter against the work and reciprocate the tool in order to force or punch the cutter through the work.

I have found from actual experience that the construction shown in my present application is not only simpler to manufacture and consequently cheaper to manufacture but by the provision of the semi-cylindrical cutting members of the tool, I am able to perforate a piece of leather, or a piece of wood as quickly and as efficiently as with the tubular cutters shown in my aforesaid patent, or with punches of the lever type heretofore in use. Furthermore, by my construction, I am able to drill or "punch" a hole through a veneer of wood without danger of splitting the wood as would happen with circular cutters, especially in cases where a hole is to be produced near the edge or end of the wood.

What I claim is:—

1. A tool of the kind described, comprising a handle, a sectional hub rotatably mounted in one end thereof, a plurality of semi-cylindrical cutters having projections struck up therefrom to provide lugs upon one face and sockets in the opposite face thereof, one section of the hub having sockets to receive the lugs of the cutters and the opposite section of the hub having lugs to fit the sockets in said cutters, means for locking the hub to the handle of the tool, and means for locking the said hub against accidental rotation.

2. A tool of the kind described, comprising a handle, a sectional hub rotatably mounted in one end thereof, one section of the hub having a plurality of semi-circular radial grooves and the opposite member having a plurality of semi-circular radial ribs, a plurality of semi-cylindrical cutters adapted to rest in the said semi-circular grooves and to receive said semi-circular ribs, and means for locking the hub against accidental rotation, as specified.

3. A tool of the kind described, comprising a handle, a sectional hub rotatably mounted in one end thereof, one section of the hub having a plurality of semi-circular radial grooves and the opposite member having a plurality of semi-circular radial ribs, a plurality of semi-cylindrical cutters adapted to rest in the said semi-circular grooves and to receive said semi-circular ribs, as specified, and means for locking said cutters in position and against accidental rotation.

4. A tool of the kind described, comprising a sectional handle member constructed of sheet metal, said sections having outwardly extending portions at one end providing parallel arms, the body portions of the sections being riveted together, a sectional hub journaled in the outer ends of said arms, one section of the hub having a plurality of semi-circular radial grooves and the opposite member having a plurality of semi-circular radial ribs, said grooves having recesses therein, and said ribs having lugs, a plurality of semi-cylindrical cutters adapted to rest in said semi-circular grooves and to receive said semi-circular ribs, said cutters having sockets struck up therein to provide lugs to fit said recesses and to receive the lugs formed upon said ribs, as specified, one section of said hub having spindles which are journaled in said arms, and means carried by the handle for locking the hub against rotation.

In testimony whereof I have hereunto set my hand this 2nd day of September, A. D. 1915.

JOHN A. ANDERSON.

Witnesses:
J. ARTHUR PEASE,
M. E. HITCHCOCK.

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