C. ELTERICH.
Drill-Chucks.

No. 195,997. Patented Oct. 9, 1877.

Fig. 1.

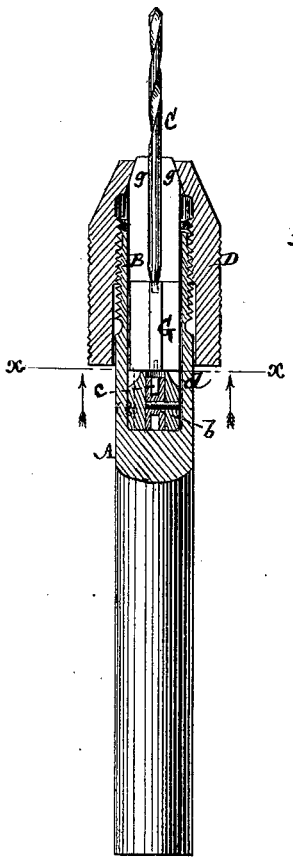


Fig. 4.

Fig. 3.

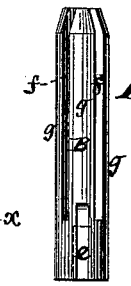


Fig. 5.

Fig. 7.

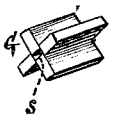


Fig. 8.

Fig. 6.

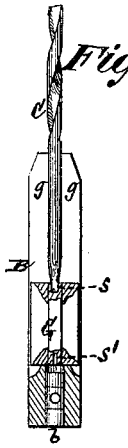
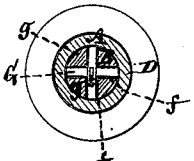


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES ELTERICH, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO ANDREW H. BRIGGS, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN DRILL-CHUCKS.

Specification forming part of Letters Patent No. **195,997**, dated October 9, 1877; application filed August 20, 1877.

To all whom it may concern:

Be it known that I, CHARLES ELTERICH, of the city and State of New York, have invented certain new and useful Improvements in Drill-Chucks, of which the following is a description, reference being had to the accompanying drawing, forming part of this specification.

This invention consists in a combination, with the slotted spring-jaw ferrule or tube of the chuck, of a detachable winged extension-piece or cross, constructed to fit between the jaws of the tube, and provided with an opening or recess in either end of it for the reception of the rear end of the drill, whereby said extension-piece not only serves to advance the position of the drill in the chuck, as wear of the drill may require, but also forms an indirect but positive driver of the drill, and assists in holding the drill in position.

The invention also consists in a reversible winged extension-piece or cross, constructed to fit between the jaws of the ferrule or tube of the chuck, and provided at its opposite ends with openings or recesses of different sizes, to receive the rear ends of different-sized drills, whereby said extension-piece may be used to hold and drive either one of two or more different-sized drills.

Figure 1 represents a partly-sectional longitudinal view of a drill-chuck, and mandrel of the same, with my invention applied; and Fig. 2, a transverse section thereof on the line *x x*. Fig. 3 is a longitudinal exterior view of the slotted spring-jaw ferrule or tube of the chuck; Fig. 4, a front-end view of the same; and Fig. 5 a rear-end view thereof. Fig. 6 is a longitudinal section of said ferrule or tube detached, with a reversible winged extension-piece fitted therein, and drill in driving connection with said piece. Fig. 7 is a view, in perspective, of the reversible extension-piece detached, and as seen from its one end; and Fig. 8, an opposite end view of the same.

A is the mandrel of the chuck, and B the slotted spring-jaw ferrule or tube thereof. This tube may have its rear end closed by a plug, *b*, the inner end of which has a cross cut or slot, *c*, in it to receive within it a flattened rear end of the drill C; but this construction, which makes the tube B the direct driver of the drill, is made the subject of a separate application for patent filed by me simultaneously with this. Said tube B is fitted within the socket *d* in the forward end of the mandrel, and is prevented from turning therein by the engagement of a stud or pin in the mandrel with a groove, *e*, in the tube. D is the nut which screws on the mandrel, and closes the spring-jaws of the tube B on the drill.

G is the winged extension-piece or cross, which may be of desired length, or there may be any number of them of different lengths. This extension-piece, which is separate from the drill, and fits freely within the tube B along its slots between the jaws *g*, has a double function or use. Thus it not only serves to advance the position of the drill in the chuck, as wear or other circumstances may require, but it also forms an indirect but positive means of holding and driving the drill at its rear end by or through the tube B and mandrel A. To this end said detachable extension-piece G is provided with an opening or recess, *s* or *s'*, in either of its ends, to receive within it the flattened rear end of the drill, so that while the extension-piece G is driven by the jaws of the tube B, it in its turn steadies and drives the drill, in addition to the hold upon the latter of the spring-jaws by the nut D.

By constructing the extension-piece G with a recess, *s* or *s'*, in both ends of it, and making these recesses of different sizes, said extension-piece may, by simply reversing it end for end within the tube B, be made to adapt itself to a variety of sizes of drills, or different thicknesses and sizes of the rear flattened ends thereof.

I claim—

1. The combination, with the slotted spring-jaw ferrule or tube B, of the detachable winged extension-piece G, having a recess, *s* or *s'*, in either end of it for reception of a flattened or angular rear extremity of the drill, substantially as specified.

2. The reversible winged extension-piece G, constructed with recesses *s s'*, of different sizes, in opposite ends of it, for use in combination with the slotted spring-jaw ferrule or tube B, to assist in holding and indirectly, but positively, driving the drill, essentially as described.

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