T. HOPPE.

CHUCKS FOR METAL-DRILLS.

No. 171,383. Patented Dec. 21, 1875.

Fig. 1.

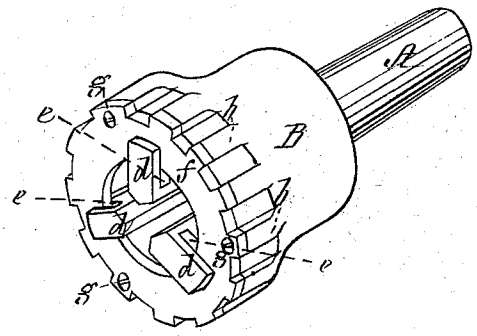


Fig. 2.

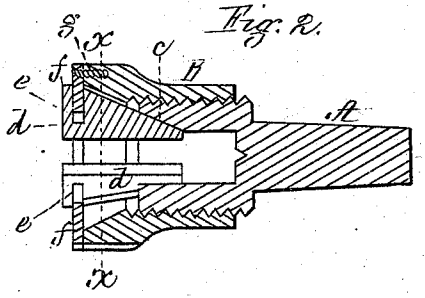


Fig. 3.

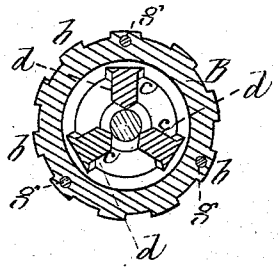


Fig. 4

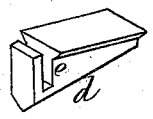
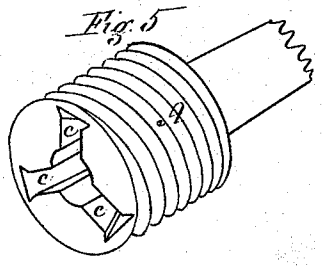


Fig. 5



Witnesses,
W. J. Cambridge
Chas. E. Griffin.

Inventor,
Theodore Hoppe,
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Attys.

UNITED STATES PATENT OFFICE.

THEODORE HOPPE, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN CHUCKS FOR METAL DRILLS.

Specification forming part of Letters Patent No. **171,383**, dated December 21, 1875; application filed November 29, 1875.

To all whom it may concern:

Be it known that I, THEODORE HOPPE, of Lawrence, in the county of Essex and State of Massachusetts, have invented an Improvement in Self-Centering Chucks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a perspective view of a chuck constructed in accordance with my invention. Fig. 2 is a longitudinal vertical section through the center of the same. Fig. 3 is a transverse vertical section through the same on the line *x x* of Fig. 2. Fig. 4 is a perspective view of one of the jaws detached. Fig. 5 is a perspective view of the spindle.

This invention consists in a chuck in which the jaws are each provided near the front end with an open slot, in which fits a flange projecting from the inside of the outer end of the shell or exterior casing, the jaws, which are wedge-shaped and of dovetail form, fitting into correspondingly-shaped inclined grooves in the interior of the stock or spindle, over which is screwed the outer casing, the turning of which upon the spindle causes the jaws to be moved toward or from a common center to grasp or release a drill or other article inserted between them.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the stock or spindle, the front end of which is enlarged and provided with a screw-thread, over which is turned the cylindrical outer shell or casing B, provided on its interior with a corresponding screw-thread, and on its exterior with ribs or projections *b* which afford a firm grasp for the hand. The enlarged portion of the spindle A is hollow, and within this portion are formed three radial grooves, *c*, each of which is inclined, and is of dovetail form at the back or inner side, as seen in Fig. 3. Within these grooves are fitted the sliding jaws *d*, each of which is made in the form of a wedge, as seen in Figs. 2 and 4, and is of dovetail form at its rear, so as to correspond in shape to that of the inner portion of the groove *c* in which it slides, the inner faces of the jaws being made angular in cross-section, and the holding-edges being at all times parallel to each other and to the longitudinal axis of the chuck. Near the front of each of the jaws *d*, and at the back thereof, is an open slot, *e*, and into these slots extends a flange or flat ring, *f*, projecting from the inner side of the outer end of the casing B, to which it is secured by screws *g*. This flange serves to hold the jaws *d*, and prevent them from being moved in the direction of their length independently of the outer casing B, and consequently, as the latter is turned upon the spindle A the wedge-shaped jaws are made to slide in the inclined grooves *c*, which thus cause the jaws to move in a plane at right angles to the axis of the chuck toward or from a common center in order to grasp or release a drill or other article placed between them. By making the jaws *d*, and the grooves in which they slide, of dovetail form, the jaws are prevented from dropping down out of their proper positions, as would otherwise be liable to occur.

The above-described chuck, which I prefer to make of steel, possesses the advantage of extreme simplicity of construction, having but few parts, and no springs or pivots which are objectionable on account of their liability to break or get out of order. Furthermore, it can be manufactured at a small cost, and is durable and effective.

What I claim as my invention, and desire to secure by Letters Patent, is—

The outer casing B, with its flange *f*, in combination with the dovetail jaws *d*, provided with slots *e*, and fitting into inclined dovetail grooves in the spindle A, all constructed and arranged to operate substantially in the manner and for the purpose set forth.

Witness my hand this 26th day of November, A. D. 1875.

THEODORE HOPPE.

In presence of—
JOHN C. SANBORN,
E. W. COLCORD.