

G. D. BELCHER.  
Drill-Chucks.

No. 150,672.

Patented May 12, 1874.

Fig. 2.

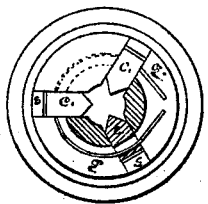


Fig. 3.

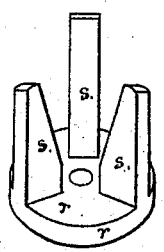


Fig. 1.

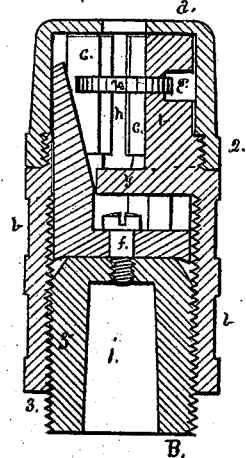


Fig. 5.

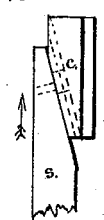


Fig. 4.

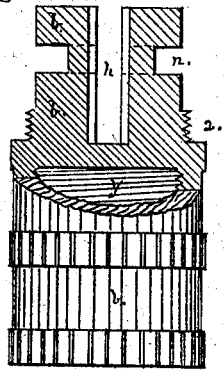


Fig. 6.



Fig. 7.

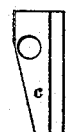
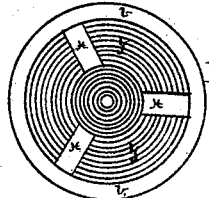


Fig. 8.



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GEORGE D. BELCHER, OF SPRINGFIELD, MASSACHUSETTS.

## IMPROVEMENT IN DRILL-CHUCKS.

Specification forming part of Letters Patent No. **150,672**, dated May 12, 1874; application filed April 21, 1874.

*To all whom it may concern:*

Be it known that I, GEORGE D. BELCHER, of Springfield, Massachusetts, have invented a Drill-Chuck, of which the following is a specification:

The object of my invention is to make what is commonly known as a drill-chuck in a more simple and effective manner than has been heretofore known.

Figure 1 is a transverse section when the parts are all together. *b b* is the main sleeve, to which all other parts are connected.

Fig. 4 shows the outer end in section more fully. *a* is a cap slipping over the end of the sleeve *b*, and is screwed fast to it at 2. *B* is the stock to which the sleeve *b* is screwed, and the sleeve *b* is made to traverse out and back by engaging with the screw-thread on *B* at 3, the stock *B* being attached to the lathe-spindle in the usual way, *i* representing the socket-hole.

Fig. 2 is a cross-section or end view with the cap *a* left off, giving an end view of the jaws *s s* when ready for use. *g* is an expanding spring, by preference passing through holes in the jaws shown in Fig. 7. The duty of this spring is to press the jaws outward. The annular groove *n* is to hold the spring *g* in its proper place.

Fig. 3 shows in perspective the wedge device, consisting of three wedge-shaped arms, *s s s*, rising up from the same base *r*. This base and arms, by preference, are made solid, though the arms may be pivoted or hinged to the base *r*, and any required number of the

wedge-shaped arms may rest on the base *r*. This base is pivoted to the inner end of the stock *B*, as shown by the pivot or tap-screw *f*.

Fig. 5 shows the sliding contact of the jaws *c* and the wedge-shaped arms *s*, the latter moving longitudinally outward, as shown by the arrow, driving the jaws *c* toward the center simultaneously.

Fig. 6 is an end view, and Fig. 7 a side view, of one of the jaws.

Fig. 8 is the partition or diaphragm *y y* in the sleeve *b*, through the openings *x x* of which the wedge-shaped arms pass, the openings forming guides for the arms *s*.

To adjust the opening or closing of the jaws *c* it will be seen that it is only necessary to screw the sleeve *b* to the right or left over the stock *B*.

I claim as my invention—

1. The combination, as shown and described, of the stock *B*, swiveled wedge-piece *r s*, and jaws *c*, for the purposes set forth.

2. The combination, as shown and described, of the stock *B*, swiveled wedge-piece *r s*, jaws *c*, and annular spring *g*, for the purpose set forth.

3. The combination, as shown and described, of the stock *B*, sleeve *b*, cap *a*, swiveled wedge-piece *r s*, jaws *c*, and spring *g*, for the purpose set forth.

GEORGE D. BELCHER.

Witnesses:

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