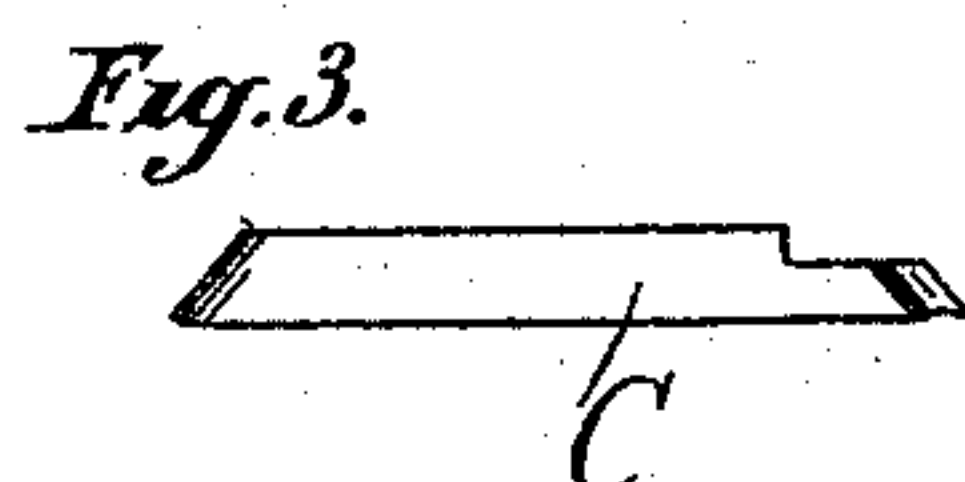
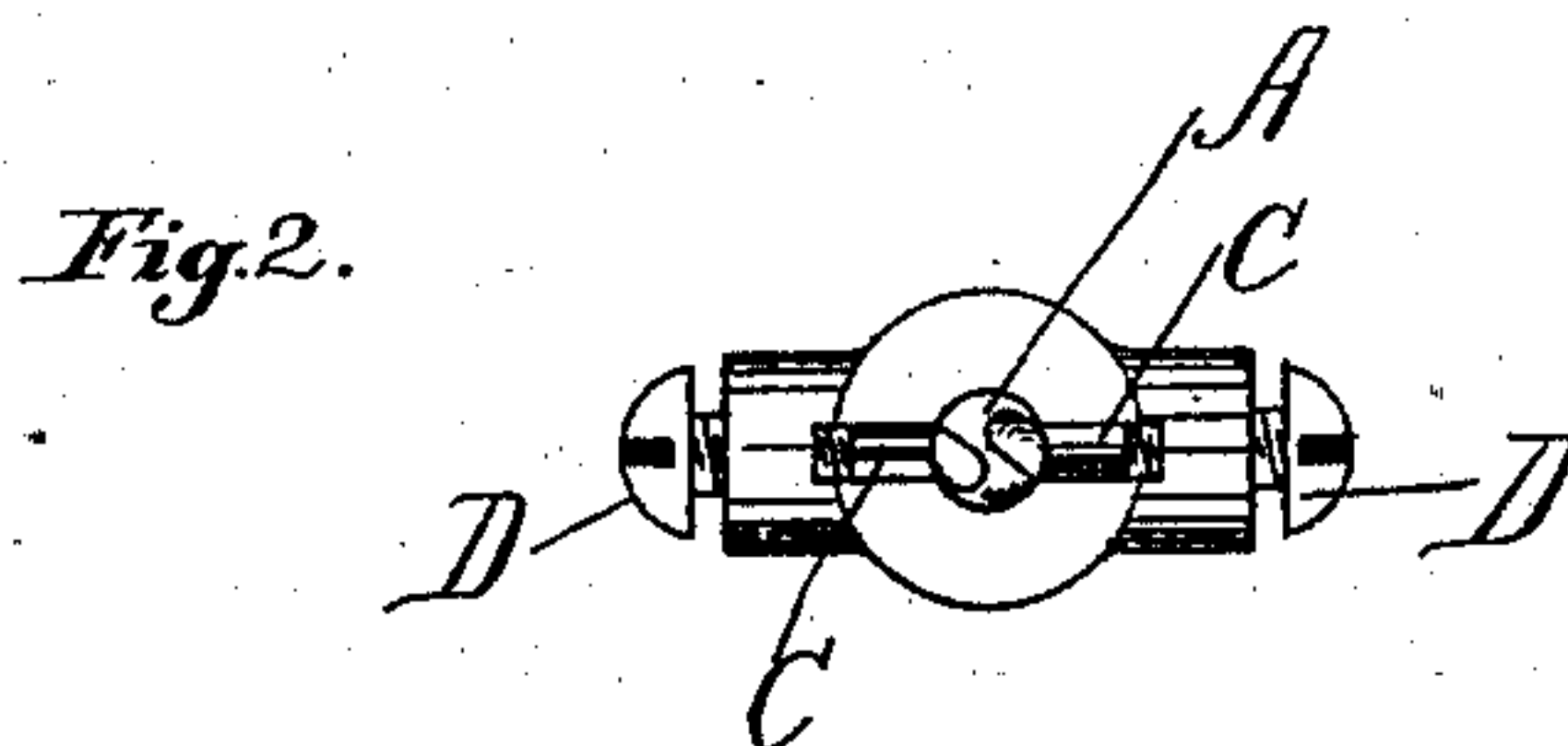
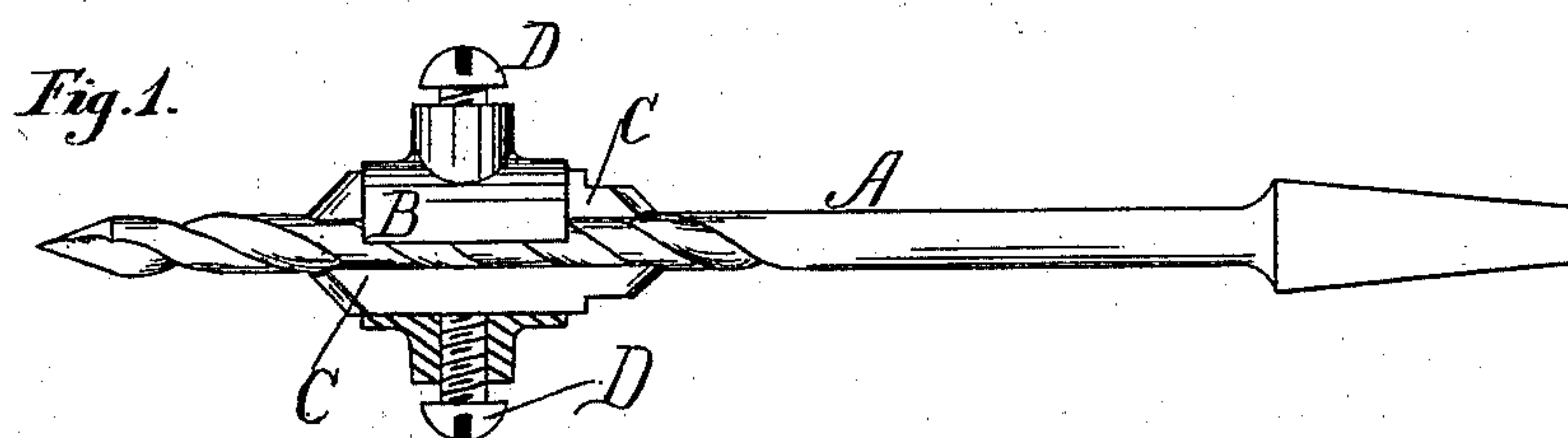


(No Model.)

R. J. WELLES.
COUNTERSINK FOR BITS.

No. 277,859.

Patented May 15, 1883.



WITNESSES—

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H. M. Munday.

INVENTOR—

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UNITED STATES PATENT OFFICE.

RICHARD J. WELLES, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHARLES C. CHAMPLIN AND FRANK T. SPENCER, OF SAME PLACE.

COUNTERSINK FOR BITS.

SPECIFICATION forming part of Letters Patent No. 277,859, dated May 15, 1883.

Application filed August 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, RICHARD J. WELLES, of Chicago, Cook county, and State of Illinois, have invented certain new and useful Improvements in Countersinks for Chamfering Bits and Drills, of which the following is a specification.

The object of my invention is to provide a cheap and durable countersink, which may be readily attached to any ordinary bit or drill, and set and adjusted to any desired gage, so that the hole may be bored and countersunk at the same operation; and it consists in the novel construction and combination of the devices hereinafter described.

My invention will be readily understood by reference to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is an exterior view of an ordinary twist-drill having my improved countersink attachment mounted thereon, and shown partly in section. Fig. 2 is an end view of the same, and Fig. 3 is a detail view of one of the knives.

In said drawings similar letters of reference indicate like parts.

In the drawings, A represents an ordinary bit or drill. Upon this bit or drill I place a collar, B, made in one piece, of malleable or wrought metal, having a face, b, adapted to gage the depth of the boring operation. The countersink-knives C C may be made from bar metal, and merely sharpened at the ends, or given the necessary conformation for the function they are to perform. They are long enough to span the spiral grooves in the bit, giving them a long firm bearing upon the outermost or exterior surface of the bit. The surfaces which come in contact with the bit are concaved, so as to conform thereto. The collar has longitudinal grooves upon either side of its central bore, into which these knives fit. The knives are securely held in the collar and the collar itself is retained in place upon the bit by the set-screws D D passing through the collar and bearing upon the knives or cutters. This construction permits the ready putting on, removal, and adjustment of the collar, the

equally ready putting in, removal, or change in the adjustment of the knives, and changes in the relative position of the knives and collar. The knives are very cheaply made of steel, while the collar itself may be formed of inferior metal. By interposing the knives between the set-screws and the bit all danger of injury to the latter is avoided, and the provision of interposing bearing-pieces specially for that purpose is rendered unnecessary.

The knives may be given different shapes at each end, so that by reversing them they will be adapted to different-sized bores. When worn out they are readily and cheaply replaced. However, but one of them may be used, (with one set-screw,) and they may be tooled at one end only. I prefer, however, to use two, as that enables the operator to do a variety of work, and in many cases he will need only these for ordinary work. So, too, one end of one knife may be made to perform the entire countersinking operation, or the ends of two knives may co-operate.

It will be noticed that the countersink-knives lie parallel with the bit, with their narrow edges in contact therewith, thereby enabling changes in the depth of their cut by simply sliding them up or down in the collar, and cheapening their cost by dispensing with part of the forging, which would be requisite if they were laid flatwise.

I claim—

1. The combination, with a bit or drill, of a collar having a gage-surface, a countersink knife or knives, adjustably inserted in the collar, and pressed against the bit or drill by a set screw or screws bearing upon the knives, and said set screw or screws, substantially as specified.

2. The combination of the bit, the collar having the interior longitudinal groove or grooves for the knives, the adjustable knife or knives, and the set screw or screws bearing upon the knives and pressing them against the bit, substantially as specified.

RICHARD J. WELLES.

Witnesses:

L. E. HASTINGS,
H. M. MUNDAY.