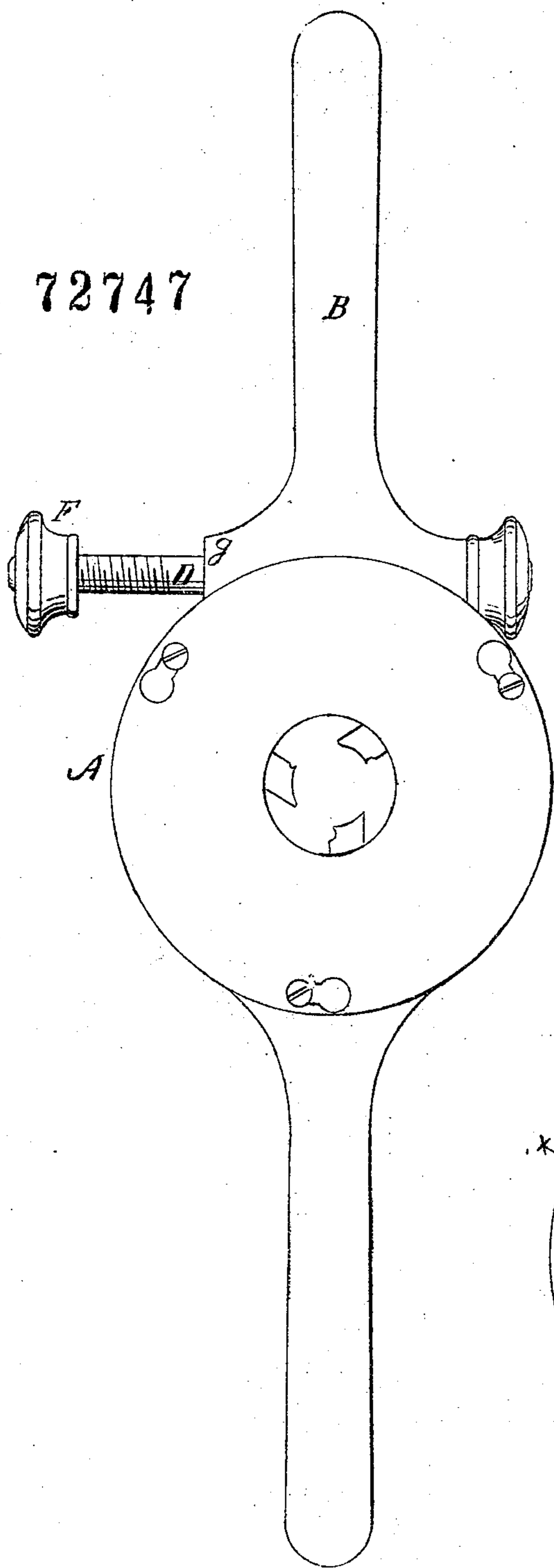


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DUNCAN McARTHUR &
 Fig 1 DIE STOCK for Cutting Screws

Fig 2



PATENTED
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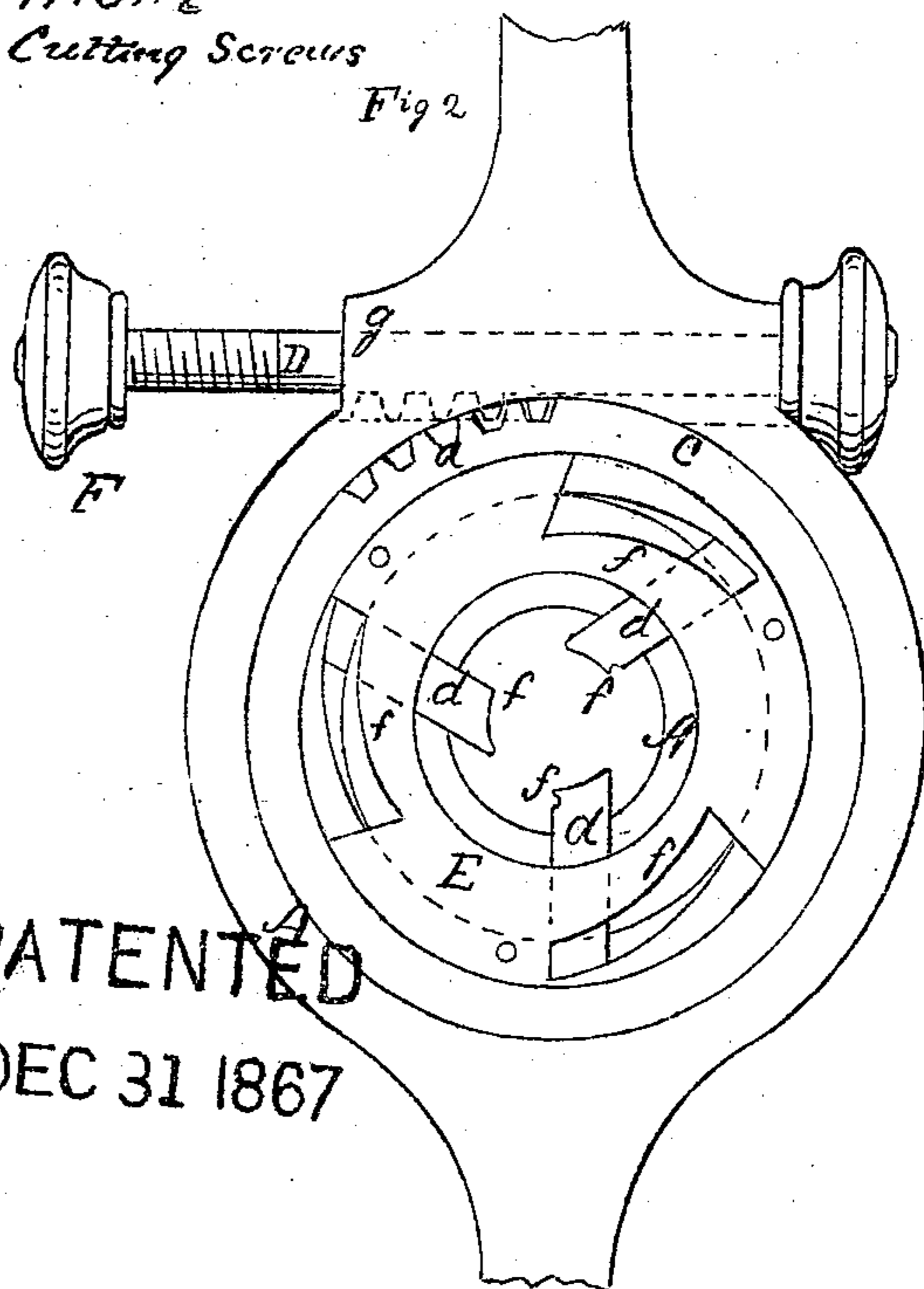
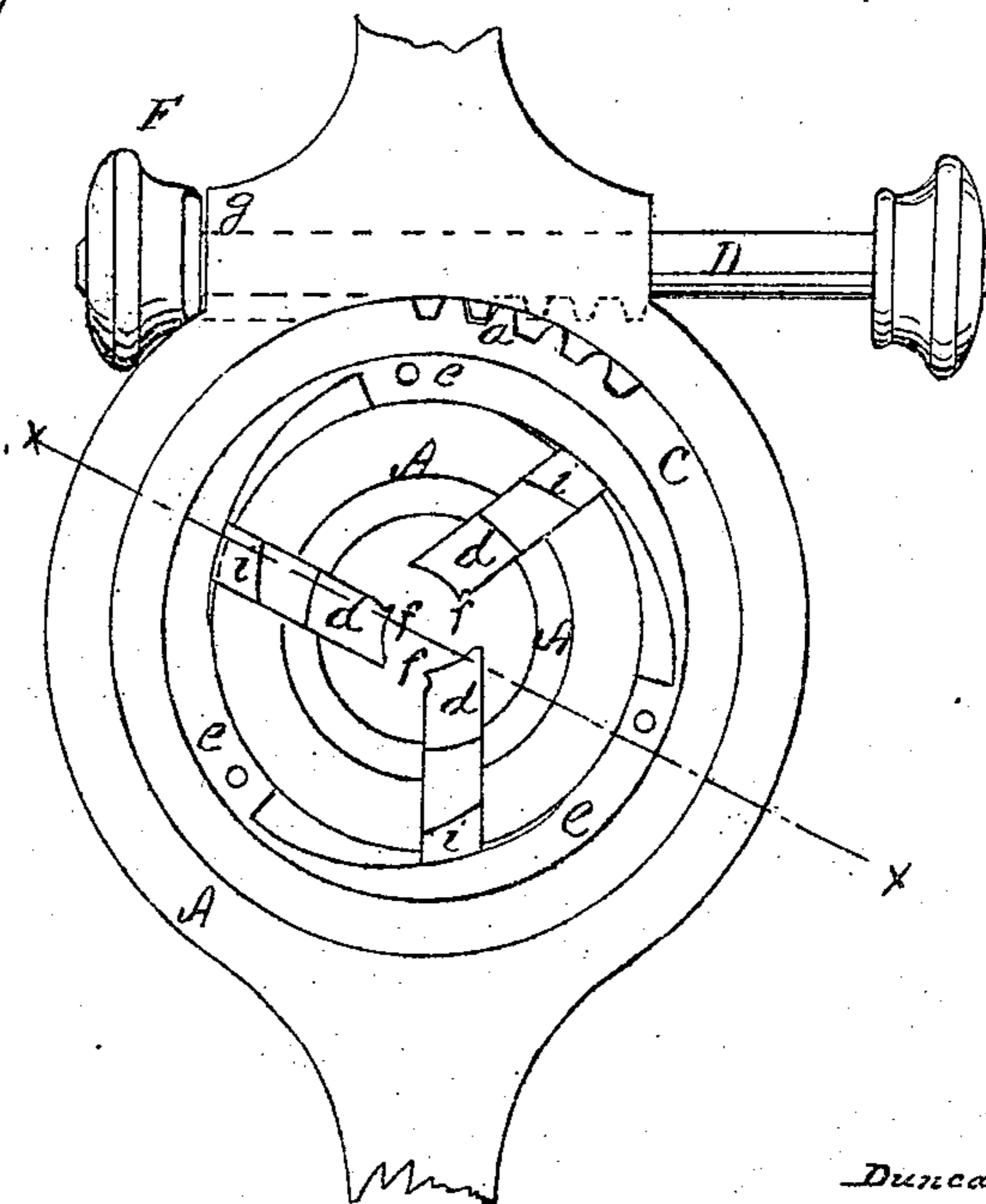


Fig 3

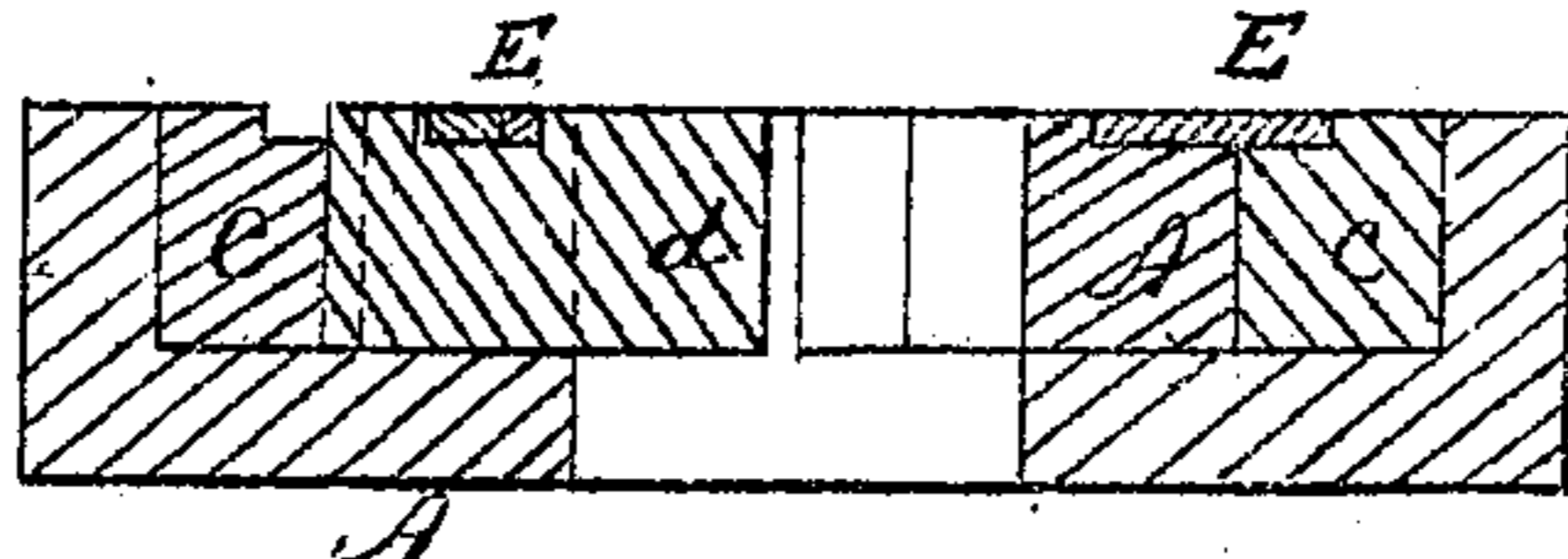


Duncan McArthur
 Inventor

By his Attorney

J. E. Eas

Fig 4



Witnesses

A. J. Libbey
John N. Murray

United States Patent Office.

DUNCAN McARTHUR, OF NEW HAVEN, CONNECTICUT.

Letters Patent No. 72,747, dated December 31, 1867.

IMPROVED DIE-STOCK FOR CUTTING SCREWS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, DUNCAN McARTHUR, of New Haven, in the county of New Haven, and State of Connecticut, have invented a new Improvement in Die-Stock for Cutting Screws; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, an upper face view.

Figure 2 the same, with the covering plate removed.

Figure 3, a similar view, with the parts removed to more clearly illustrate the operation; and in

Figure 4, a section on line *x x*.

This invention is designed for the adjustment of the die in the die-plate for screw-cutting, the object being to adjust the cutting-dies to any desired diameter of the screw, and at the same time to release them from the screw when cut, and so that a continued forward movement of the plate may be had, the dies constantly cutting a full thread.

To enable others to construct this improvement, I will proceed to describe the same as illustrated in the accompanying drawings.

A is the die-plate proper, provided with handles B B, in the usual manner. Within the die-plate is arranged a ring, C, having upon one side teeth *a*, and through the handle B a rack, D, so that when moved from right to left, the teeth upon the rack will cause the ring C to be turned accordingly, as from fig. 2 to fig. 3, and *vice versa*. The plate A extends within the ring C, as denoted in fig. 3, and in that portion of the plate are arranged three dies or cutters *d*, more or less in number, the cutting-edge being upon the forward point, as at *f*, and the portion of the die back of the said cutting-point formed so as to fill, or nearly so, the thread cut by the advancing cutting-edge, and thus form a perfect guide for the die, and to this end the side of the die upon which the cutting-edge is formed, is in a direct radial line from the centre of the plate, as in fig. 3. On the inner surface of the ring C are formed cams *e*, corresponding to the several dies, so that by turning the ring C, as from the position in fig. 2 to that in fig. 3, the dies are forced forward to reduce the diameter; and in order that by returning the ring C the dies *d* may be returned, I arrange in connection with the ring C a plate, E, denoted in color, figs. 2 and 4, with reversed cams *f* operating against a shoulder, *z*, upon the dies, causes the positive return of the dies when the ring C is returned to the position in fig. 2.

To cut a thread, place the dies upon the blank, turn the blank in the usual manner, and the dies will cut a full thread, and without any necessary reversing of the movement of the plate, and when the thread has been so cut, turn the ring C to open the dies to permit their removal from the screw without the necessity of turning the plate therefrom. To thus open the dies, press the bar D back to the position in fig. 2, which opens the dies to their full extent. Upon the opposite end of the rack D, I cut a thread and fix a nut, F, so that by adjusting the nut on the said bar, and returning the bar until the nut strikes the handle or shoulder *g*, the diameter of the thread is adjusted, as by turning the nut F further on or off the said bar, the movement of the plate C must be less or more, as the case may be, and consequently the diameter of the thread greater or less, and by this arrangement of the nut F, the dies may be opened and returned to positively the same point, so that many threads may be cut by the dies of exactly the same diameter. Thus one set of dies, thus arranged in the die-plate, serves to cut many screws of the same or different diameters without change, but if a different thread is required, simply remove the dies and place others therein.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

The arrangement described of the ring C, with its cams *e* and plate E, combined with the dies *d* and the adjusting-rack D, the whole constructed so as to operate in the manner herein set forth.

DUNCAN McARTHUR.

Witnesses:

A. J. TIBBITS,

JOHN H. SHUMWAY.