

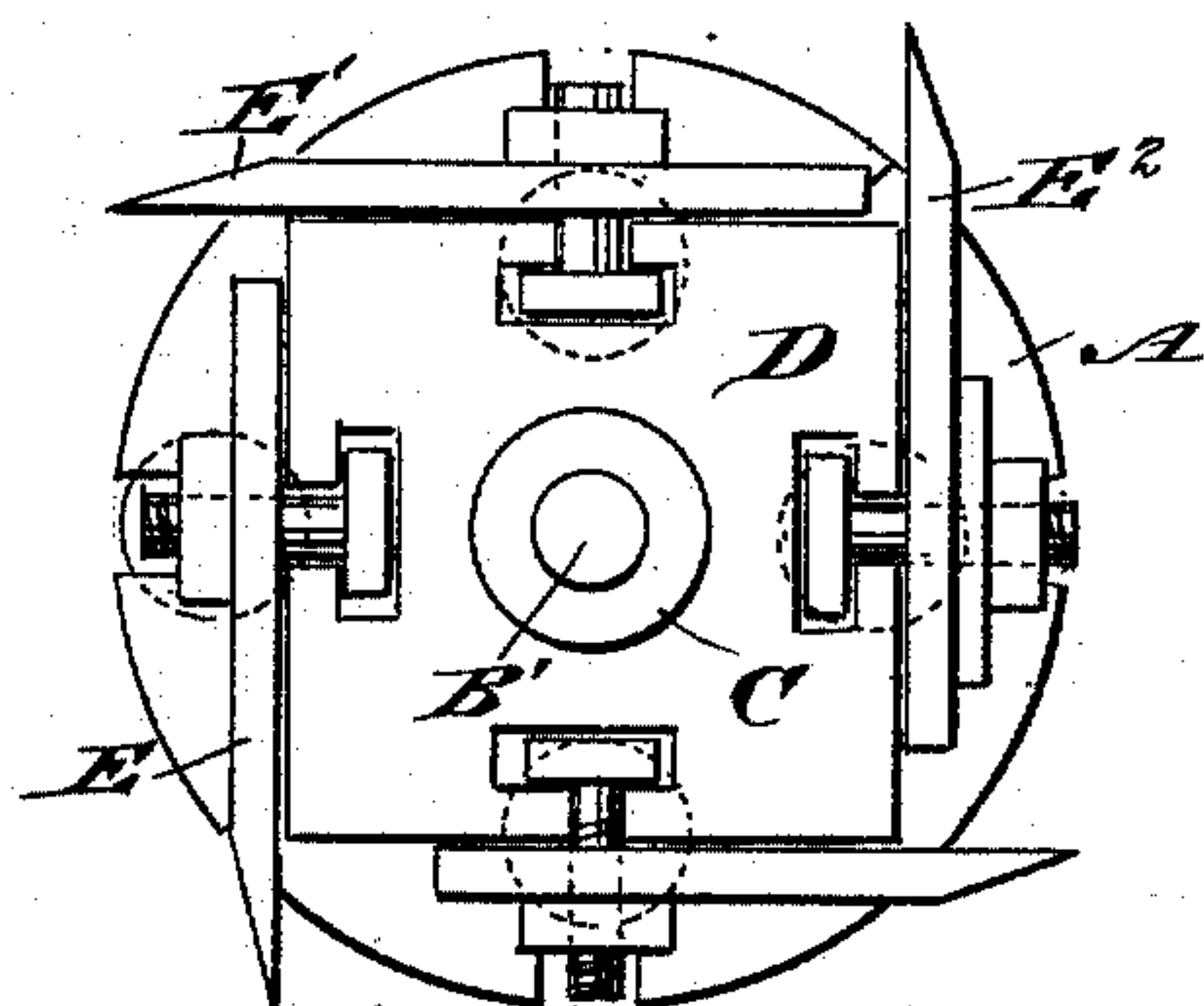
(No Model.)

W. T. WEBB.  
COUNTERBALANCING COLLAR.

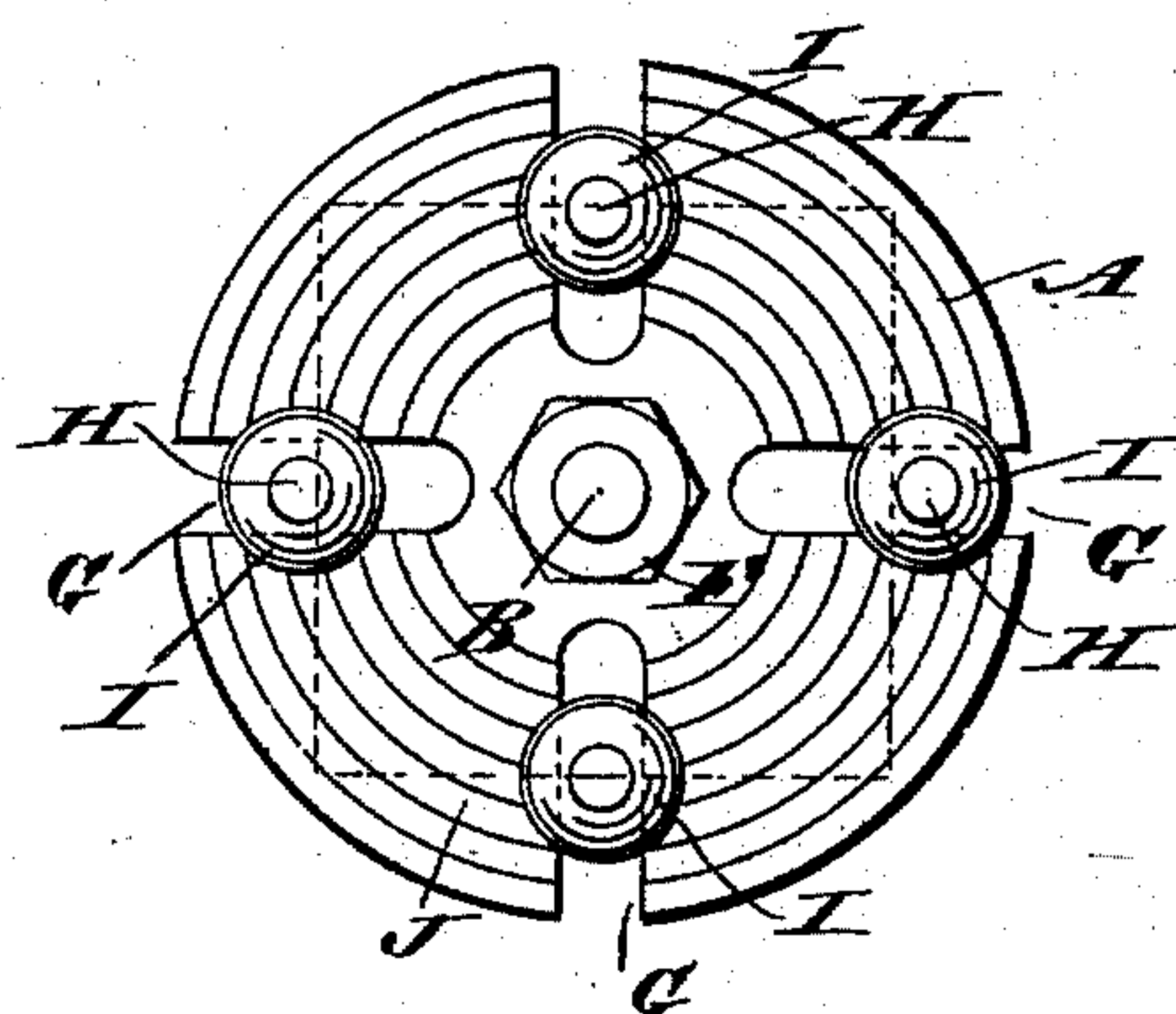
No. 483,411.

Patented Sept. 27, 1892.

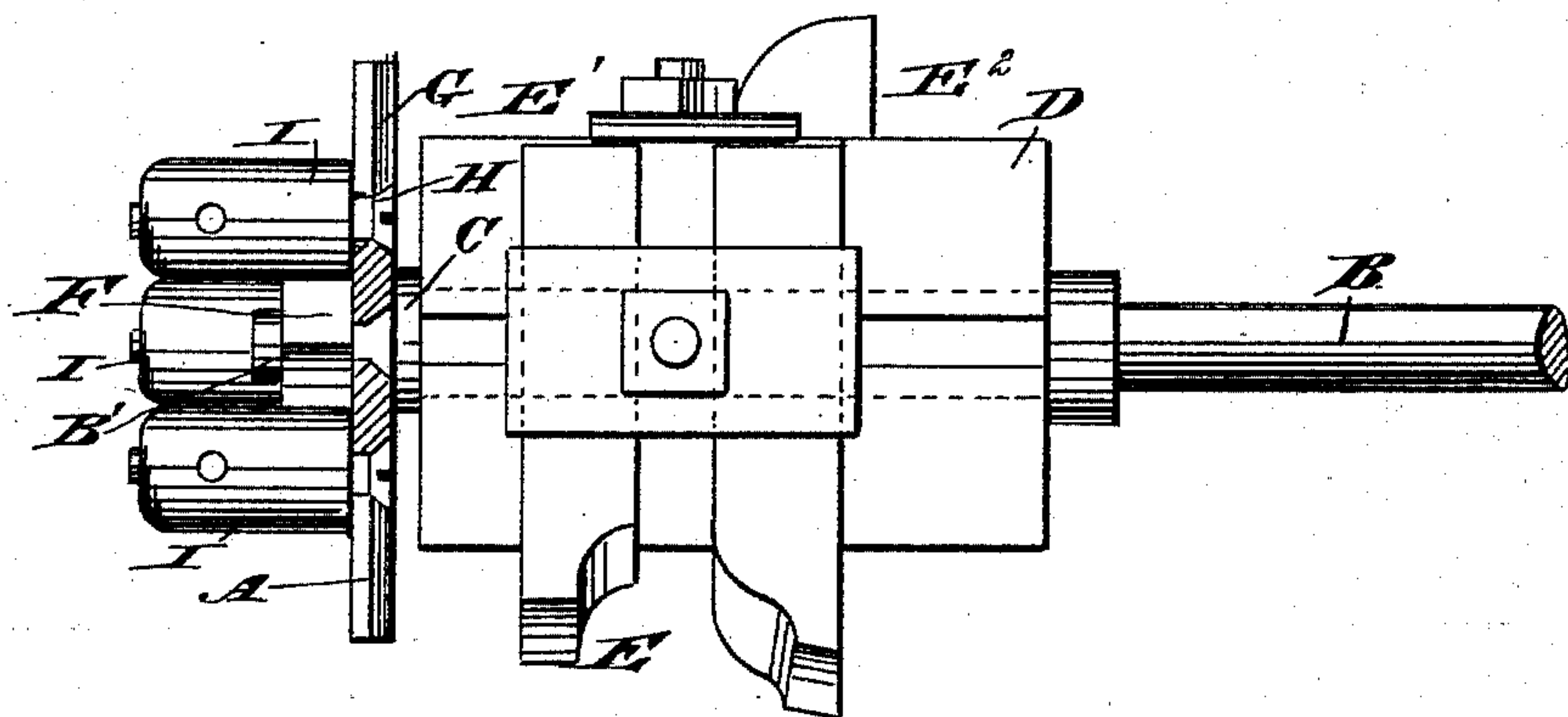
*Fig: 1.*



*Fig: 2.*



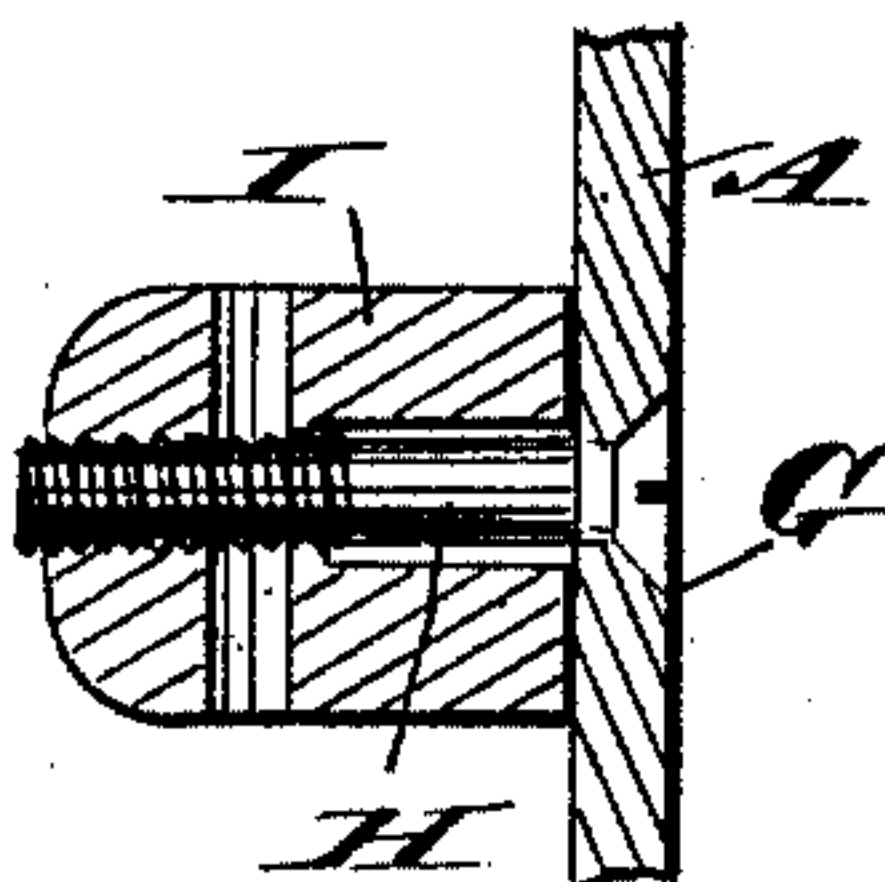
*Fig: 3.*



*Fig: 4.*

WITNESSES:

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INVENTOR

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# UNITED STATES PATENT OFFICE.

WATSON T. WEBB, OF SALT LAKE CITY, UTAH TERRITORY.

## COUNTERBALANCING-COLLAR.

SPECIFICATION forming part of Letters Patent No. 483,411, dated September 27, 1892.

Application filed April 27, 1892. Serial No. 430,875. (No model.)

*To all whom it may concern:*

Be it known that I, WATSON T. WEBB, of Salt Lake City, in the county of Salt Lake and Territory of Utah, have invented a new and Improved Counterbalancing-Collar, of which the following is a full, clear, and exact description.

The invention relates to combined eccentric counterbalancing-collars and shaper-guards, such as shown and described in the application for Letters Patent of the United States, Serial No. 410,043, filed by me on October 27, 1891, and patented May 3, 1892, No. 474,274.

The object of the present invention is to provide a new and improved collar for accurately counterbalancing the cutters on the spindle of wood working and other machines.

The invention consists of a collar adapted to be secured on the cutter-spindle and a series of weights held adjustably on the said collar.

The invention also consists of certain parts and details and combinations of the same, as will be hereinafter described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of the specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an end elevation of a cutter provided with my improvement. Fig. 2 is a face view of the improvement. Fig. 3 is a side elevation, with parts in section, of the improvement as applied; and Fig. 4 is an enlarged sectional side elevation of one of the adjustable weights.

The improved counterbalancing-collar is provided with a disk or plate A, having a central aperture adapted to be engaged by the threaded end B' of the spindle B, the rear face of the disk A abutting against a shoulder or collar C, formed on the said spindle next to one end of the head D, carrying the several cutters E E' E<sup>2</sup>, &c.

In order to hold the disk or plate A in place on the threaded end of the spindle B, a nut F screws on the said threaded end B' against the outer face of the disk or plate A, so as to secure the same in place when adjusted to the proper position, as hereinafter more fully described.

On the disk or plate A is arranged a series of radially-extending slots G, preferably of a like number corresponding to the number of faces or sets of knives on the head D. Each of the slots G is engaged by the head of a bolt H, fitted to slide in the said respective slot G and on which screws a weight I, adapted to abut against the front face of the disk or plate A, so as to lock its respective bolt H in position on the plate A.

As indicated in Fig. 2, the front face of the disk or plate A is provided with concentric circles J, serving as a graduation for readily finding the desired position for the bolts H in adjusting the same. The several cutters E, E', and E<sup>2</sup> on the head D are sometimes one heavier than the other, and as they are secured on the faces of the head D the latter is unbalanced, and the same is the case if only one knife or cutter is arranged on the head. Now in order to compensate for this discrepancy the bolts H, with their weights I, are shifted inward or outward in the respective slots G, so as to increase the weight on that side of the head D carrying the lightest or thinnest cutters. It is understood that the weights are readily adjusted inward and outward on the face of the disk or plate A by partly unscrewing the weight I on its bolt H and then adjusting the same inward or outward on the plate A until the bolt, with the weight I, is in the proper position, according to the weight of the cutters on that side of the head B.

It will be seen that sets of lighter or heavier weights I may be used on the same bolts H, so as to compensate for the increased or decreased weight of the cutters on the head D. Furthermore, different-sized weights may be used on the several bolts of one disk or plate A, so as to counterbalance the head D in the manner above described.

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

1. A counterbalancing-collar for the purpose described, consisting of a plate or disk adapted to be secured to the cutter-spindle and weights held adjustably on the said disk or plate, substantially as shown and described.
2. A counterbalancing-collar consisting of a disk or plate adapted to be secured to the

- cutter-spindle and formed with slots, bolts held adjustably in the said slots, and weights held on the said bolts, substantially as shown and described.
- 5 3. A counterbalancing-collar consisting of a disk or plate adapted to be secured to the cutter-spindle and formed with slots, bolts held adjustably in the said slots, and weights held on the said bolts, the said weights serving  
10 as nuts for the said bolts to secure the latter in place on the disk or plate, substantially as shown and described.
4. A counterbalancing-collar comprising a

disk or plate adapted to be secured to the cutter-spindle and provided with radially-extend- 15  
ing slots and with indicating-circles on its face, bolts held adjustably in the said slots, and weights forming nuts screwing on the said bolts to lock the latter in place on the said disk or plate, substantially as shown and 20  
described.

WATSON T. WEBB.

Witnesses:

S. J. LYNN,

E. T. STEVENSON.