

(No Model.)

J. DYSON & R. H. WILLIAMSON.  
ARCHIMEDEAN SCREW.

No. 525,194.

Patented Aug. 28, 1894.

FIG. 2.

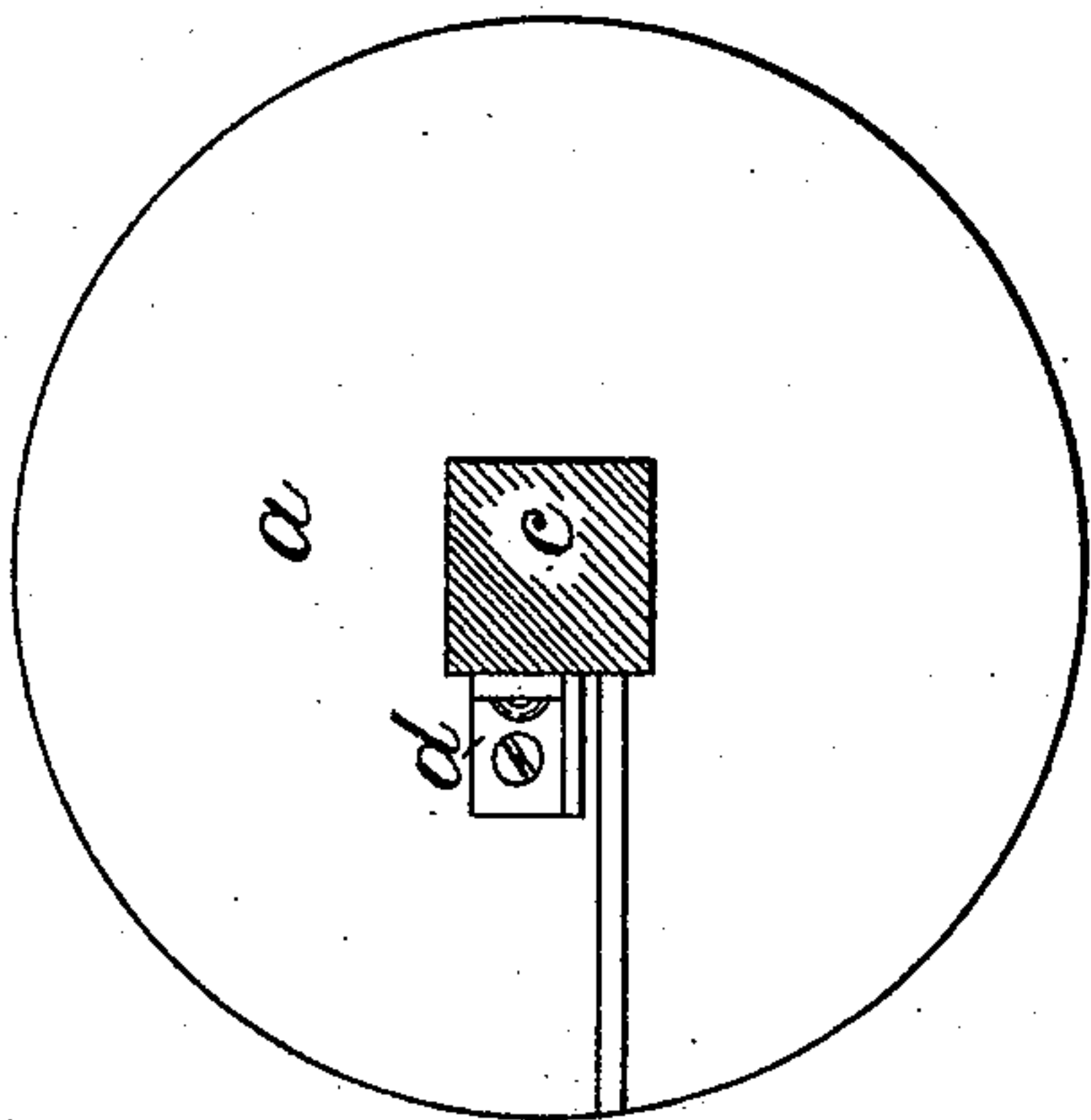
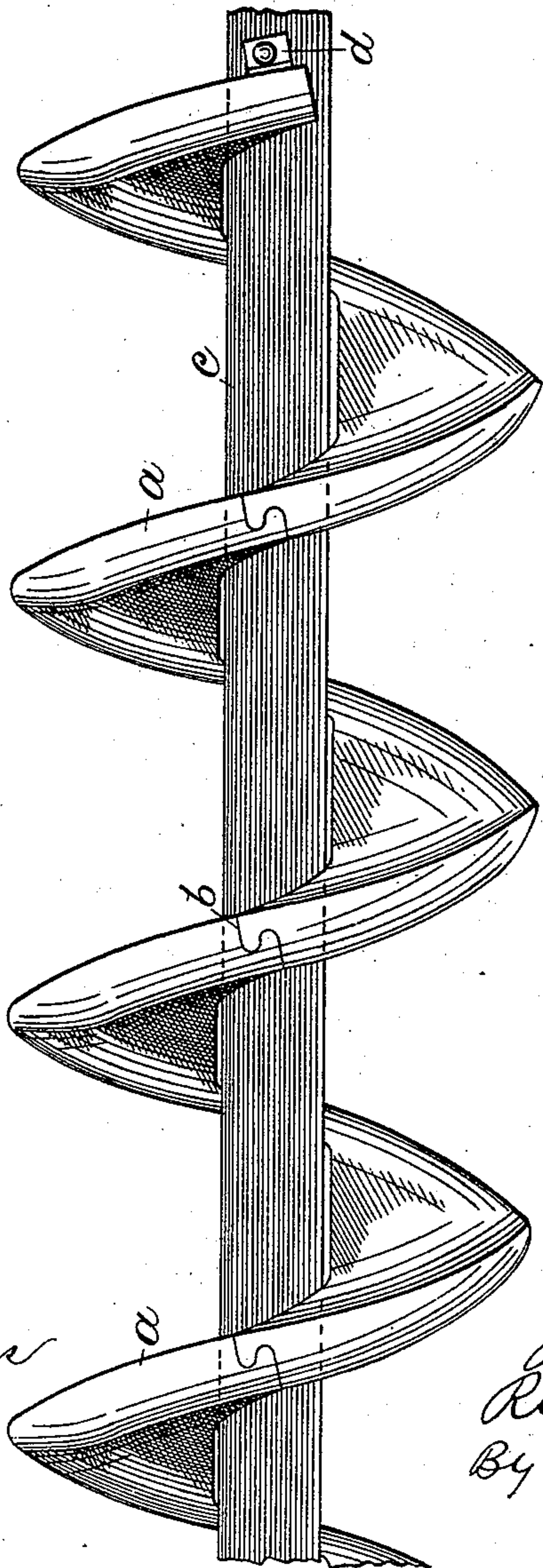


FIG. 1.



Witnesses:  
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*Richard H. Williamson.*  
By their Attorneys  
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# UNITED STATES PATENT OFFICE.

JAMES DYSON AND RICHARD HARLEY WILLIAMSON, OF ASHTON-UNDER-LYNE, ENGLAND.

## ARCHIMEDEAN SCREW.

SPECIFICATION forming part of Letters Patent No. 525,194, dated August 28, 1894.

Application filed January 10, 1894. Serial No. 496,420. (No model.) Patented in England November 22, 1892, No. 21,236, and in France August 16, 1893, No. 232,192,

*To all whom it may concern:*

Be it known that we, JAMES DYSON, a resident of Good Hope Mill, Ashton-under-Lyne, and RICHARD HARLEY WILLIAMSON, a resident of 21 Victoria Street, Ashton-under-Lyne, county of Lancaster, England, subjects of the Queen of Great Britain and Ireland, have invented an Improved Archimedean Screw, (for which we have obtained a British patent, No. 21,236, dated November 22, 1892, and a French patent, No. 232,192, dated August 16, 1893,) of which the following is a specification.

This invention relates to an improved construction of Archimedean screws such for example as are used as conveyers for grain, fuel or other solid plastic, semi-plastic, or liquid bodies.

A screw made in accordance with our said invention is shown in the accompanying drawings, of which—

Figure 1 is a side view and Fig. 2 an end view.

The blade or vane of the screw is formed in sections *a* having at their ends dovetails or projections *b* and recesses engaging with each other so that when sections each of which forms a complete convolution are threaded on the central shaft the said sections form a continuous screw blade. The end sections are fixed to the central shaft in any convenient manner as by an angle iron *d*. By removing one of the end sections the intervening sections can be easily withdrawn from the shaft and be replaced when worn or broken. Besides engaging with each other the inner edge of the blade of each section where it comes in contact with the shaft is formed so as to present a straight surface parallel to and taking against a flat surface

on the central shaft. The flat on the central shaft thus prevents any rotary motion of any section and a stronger screw is produced than if the sections were simply threaded on a cylindrical shaft and the end sections only secured since in the latter case the end sections have to bear the torsion of the entire screw. The central shaft may be square or of other prismatic shape or may be a cylindrical shaft if one or more flats are formed thereon against which the inner straight edge may bear.

We are aware that it has been proposed to construct Archimedean screws by threading on a central shaft a number of short sections each of which forms part of the blade and the body of the screw and which engage longitudinally with each other and we would have it understood that we make no general claim to such a combination.

What we claim as our invention, and desire to secure by Letters Patent, is—

An Archimedean screw consisting of a ribbon-shaped spiral blade or vane in sections, each forming a complete convolution, the ends of which are provided with transverse overlapped interlocked projections and recesses whereby they may be engaged with each other or disengaged only longitudinally, and each having a straight inner edge engaging with one or more flats on a central shaft on which the said sections are slid, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JAMES DYSON.

RICHARD HARLEY WILLIAMSON.

Witnesses:

JOSEPH BENTON,

JOHN S. HALL.