No. 706,770. Patented Aug. 12, 1902.

W. MILLER.

CIRCULAR SAWING MACHINE.

(Application filed May 6, 1902.)

(No Model.) 4 Sheets—Sheet 1.

FIG. 2.

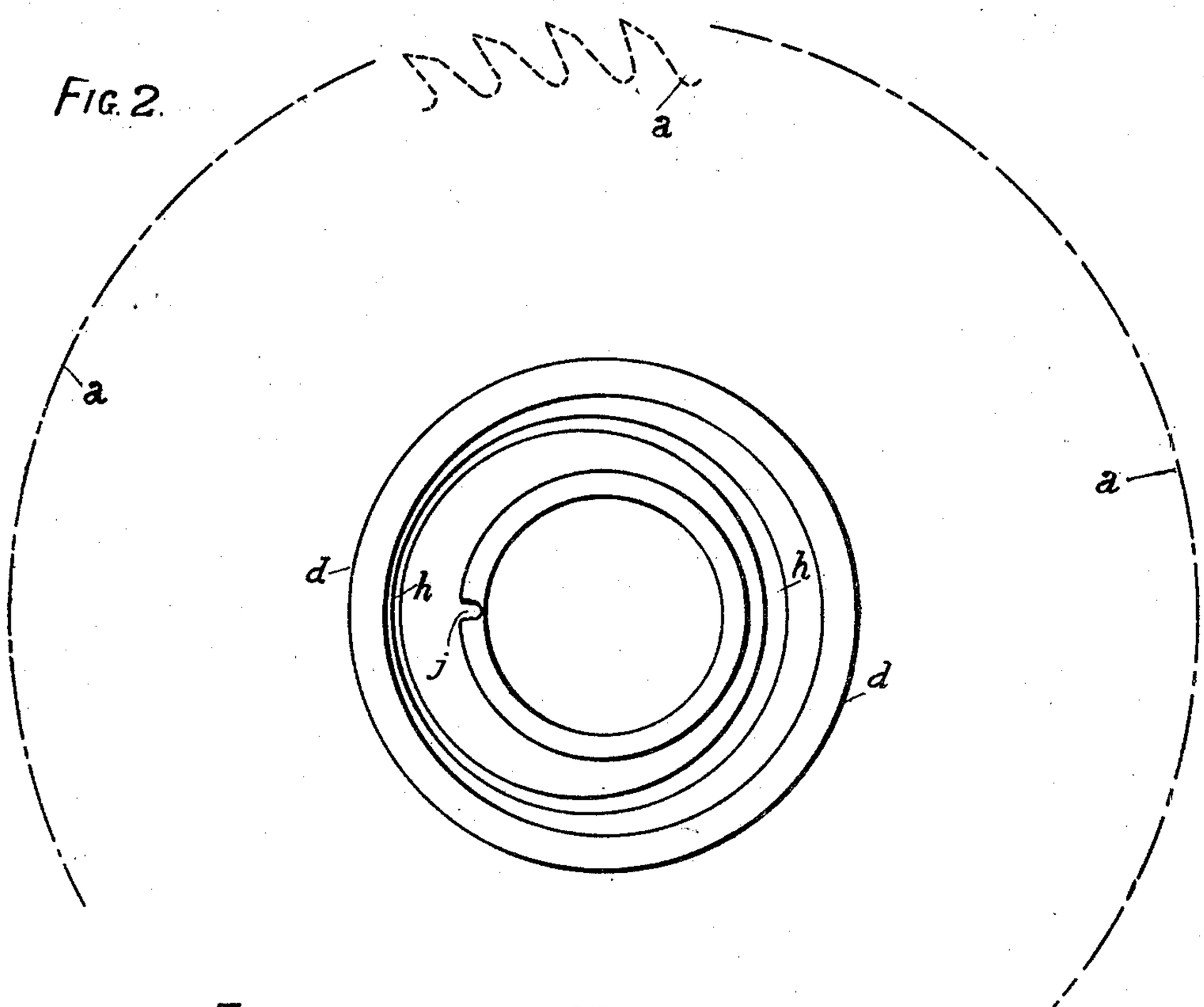
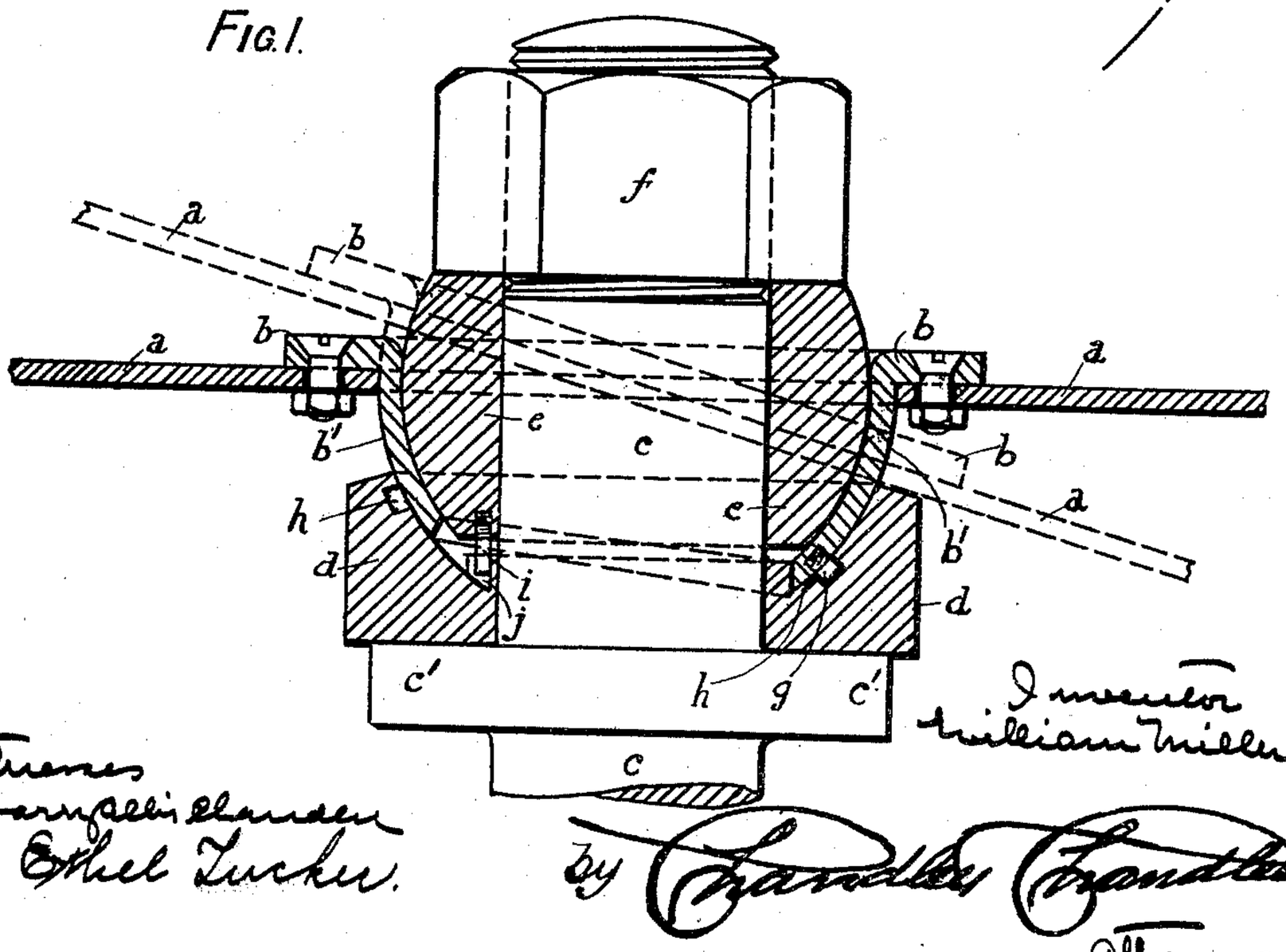


FIG. 1.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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FIG. 4.

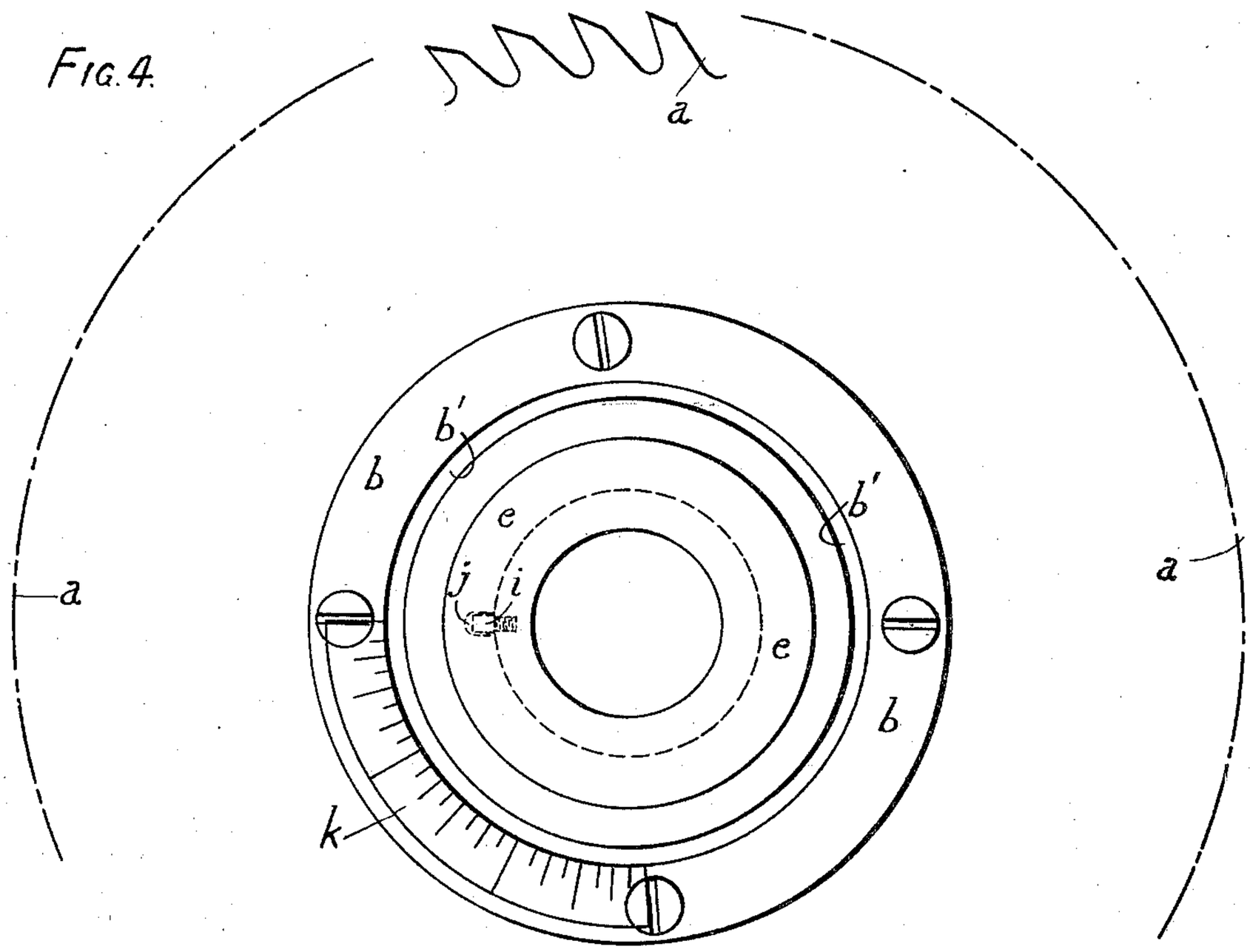

FIG. 3.

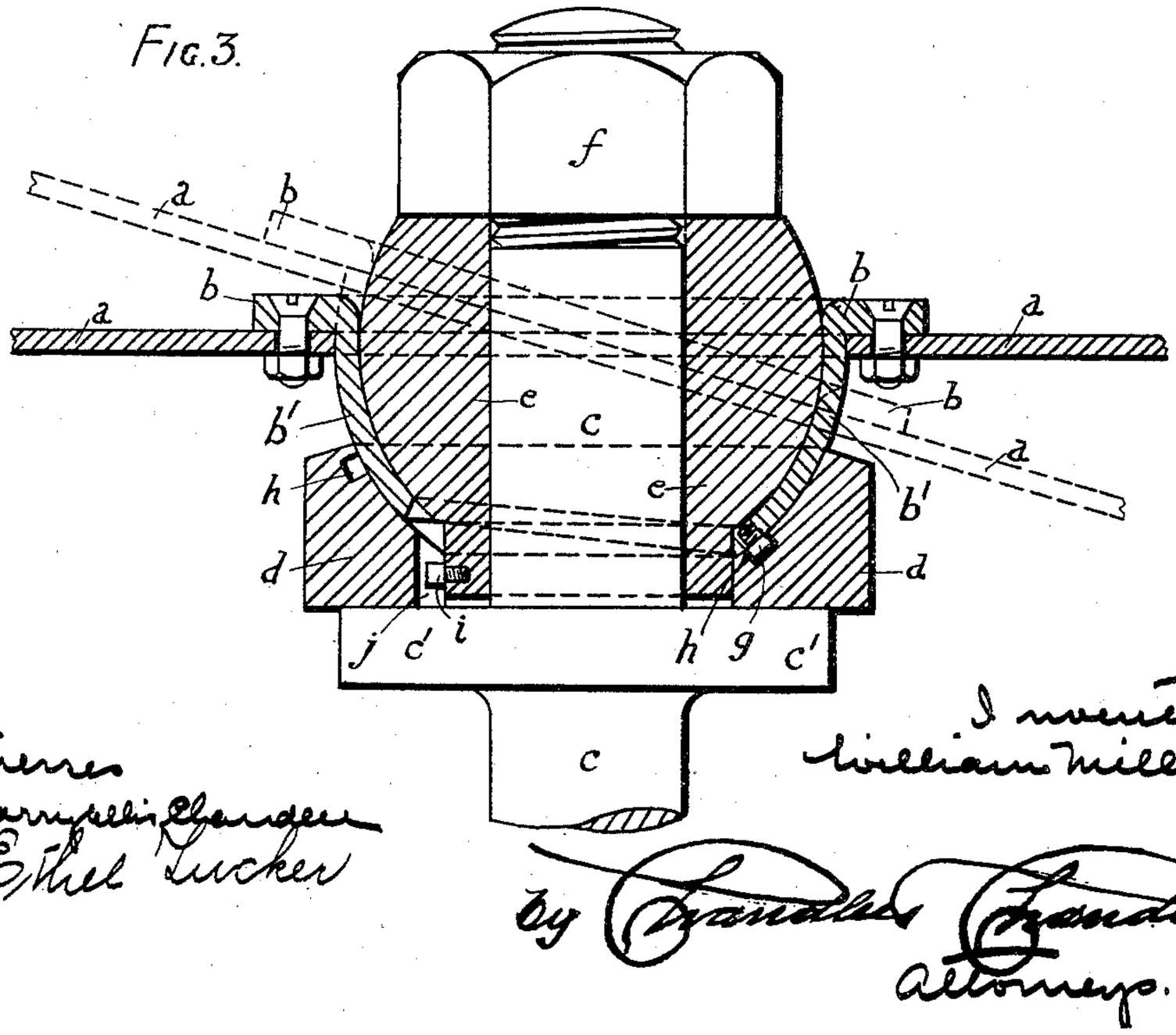

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FIG. 6.

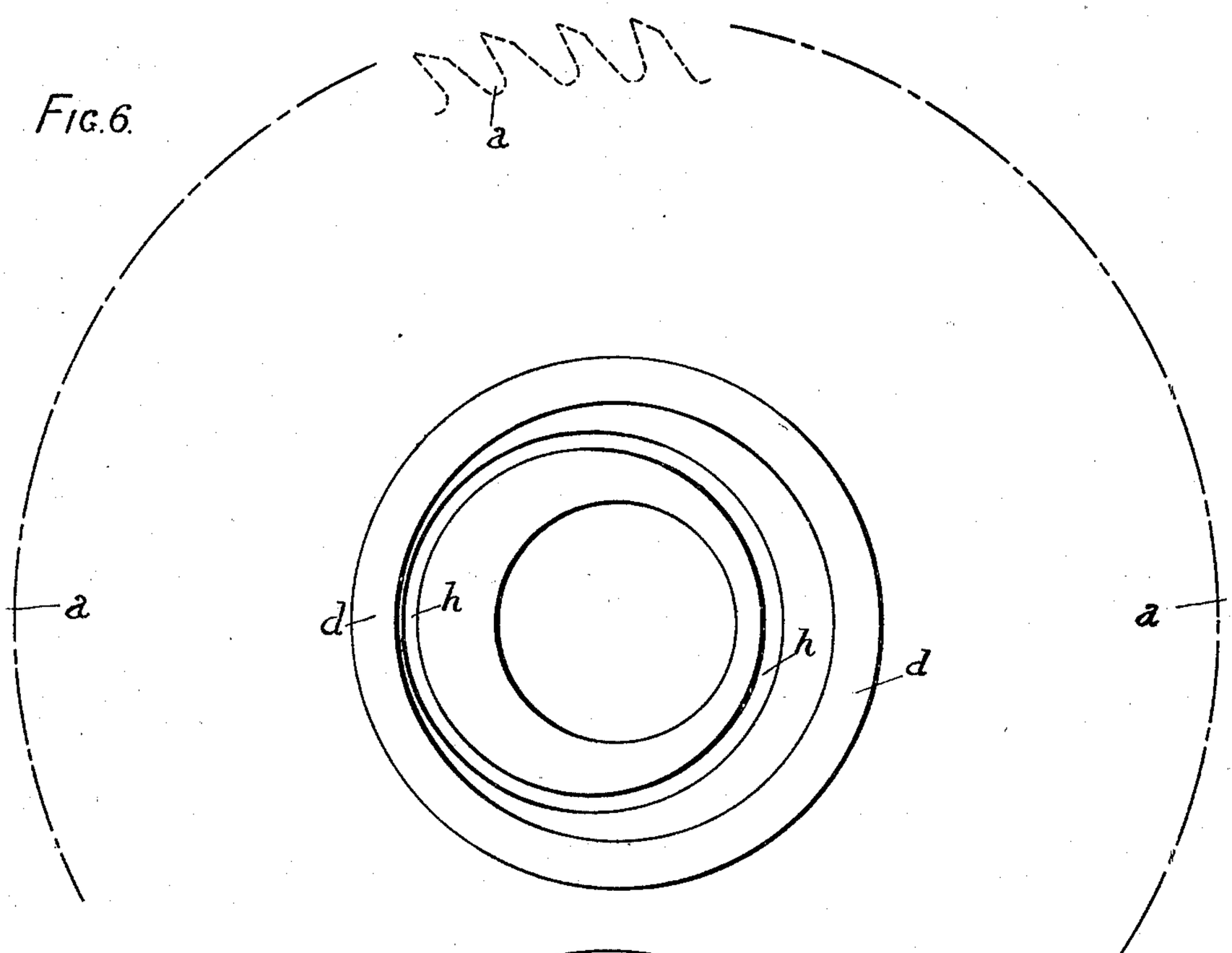
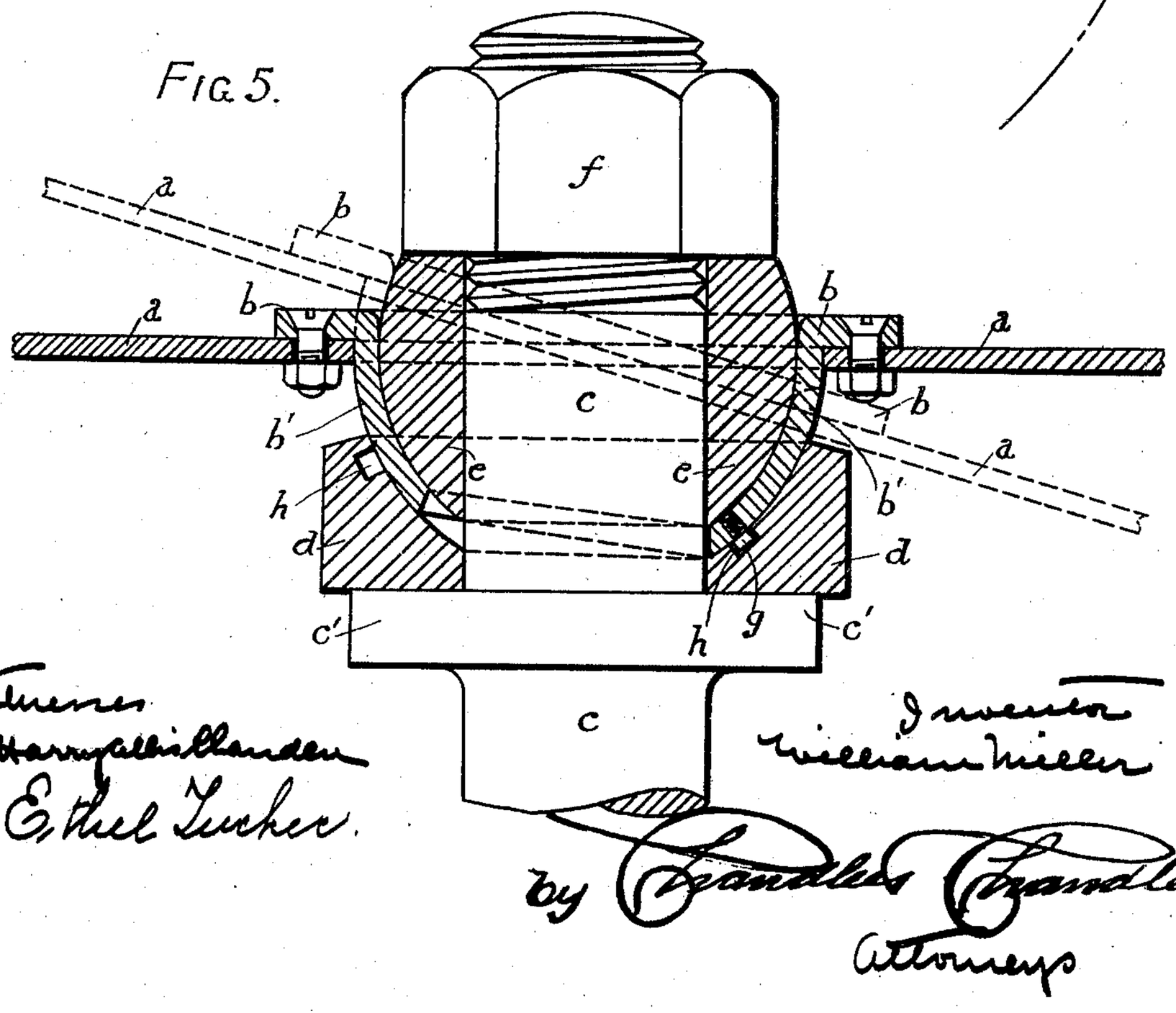


FIG. 5.



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No. 706,770. Patented Aug. 12, 1902.

W. MILLER.

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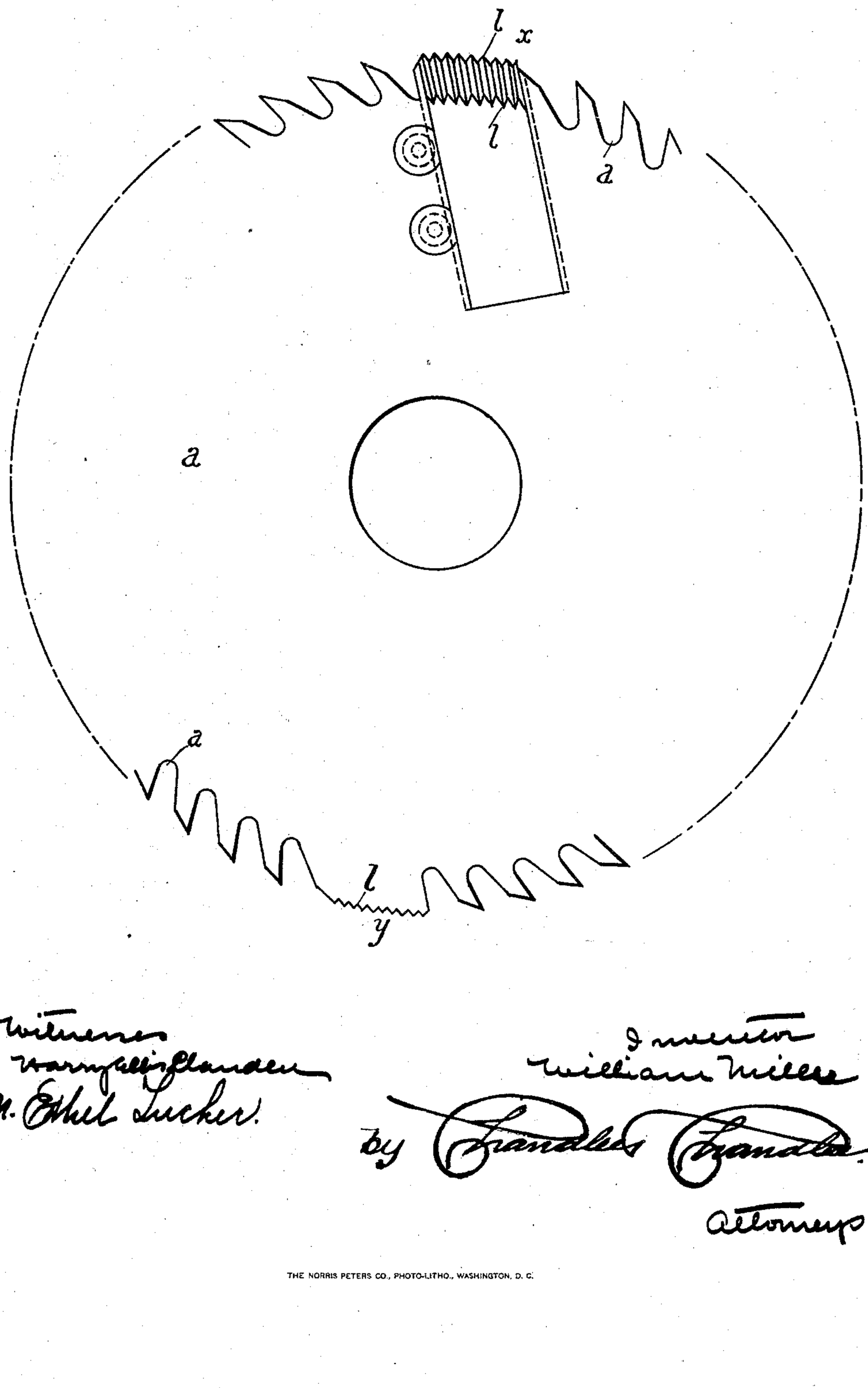
FIG. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM MILLER, OF FALKIRK, SCOTLAND.

CIRCULAR SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 706,770, dated August 12, 1902.

Application filed May 6, 1902. Serial No. 106,220. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MILLER, a subject of the King of the United Kingdom of Great Britain and Ireland, residing at 134 Elmbank Terrace, Falkirk, Stirlingshire, Scotland, have invented certain new and useful Improvements in Circular Sawing Machines, (for which application for patent has been made in Great Britain, No. 20,054, dated October 8, 1901,) of which the following is a specification.

This invention, which relates to circular sawing machines, has for its object to provide simple and inexpensive means whereby the saw-disk may be set and held at any desired inclination on its rotating spindle as a "drunken" saw (and which are employed for cutting grooves or notches) without having to introduce paper or other packing between the disk and central boss.

The invention has further for its object the provision of means whereby the sides of grooves cut by the saw are cleaned simultaneously with the sawing operation.

In the accompanying drawings, which illustrate the invention, Figure 1 is a section taken diametrically of the saw-disk; and Fig. 2 is a plan of the socket-block with the saw-disk removed for clearness, but shown in dotted lines. Figs. 3, 4, and 5 and 6 are views corresponding to Figs. 1 and 2 of modified forms of the boss. Fig. 7 is an elevation of a saw-disk formed in accordance with my invention.

Under my invention the saw-disk *a* is either formed with a central cup or, as is preferred and as shown, is secured to a flange *b* on a hemispherical cup *b'*, fitted over the saw-spindle *c* and held as in a ball-and-socket joint between a concave socket-block *d*, fitted against a shoulder *c'* on the spindle *c* and a convex washer *e*, so that it may be secured either at right angles to the spindle *c*, as shown in full lines, for ordinary work, or at any desired inclination, as shown in dotted lines, for cutting grooves or notches or for any use to which a drunken saw may be put. The cup *b*, to which the saw-disk *a* is bolted or otherwise secured, is held between the concave socket-block *d* and the convex washer *e* by pressure upon the latter of a screw-nut *f* on the end of the saw-spindle *c*, and in setting the cup with the saw at an inclination it may be guided by a pin *g* in the cup entering an eccentric groove *h* in the socket *d*. The socket-block *d* may, as shown at Figs. 1 and 3, be locked to the convex washer *e* by a pin *i* in the latter entering an orifice or recess *j* in the former, or these may, as shown at Fig. 5, be merely clamped together by means of the nut *f*. A graduated scale *k* may be provided upon the saw-disk or its boss *b*, as shown at Fig. 3, and a suitable pointer on the convex washer *e*, or vice versa, so that the angle at which the saw-disk is set in relation to its spindle may be readily ascertained.

Referring to Fig. 7, two series of teeth *l* are formed upon the saw-disk *a*, as shown at *x*, or fitted to the same, as shown at *y*, on the same figure, each series of teeth being set diametrically opposite each other and beveled away from opposite sides of the vertical surfaces of the disk, so that cutting edges each formed similarly to a plane-iron are provided, which in the rotation of the saw clean or plane the vertical sides of the groove or notch being cut.

Having now described the invention, what I claim, and desire to secure by Letters Patent, is—

1. In a circular sawing machine, means for setting the saw-disk at any desired inclination to, and retaining it upon its rotating spindle, said means consisting of a cup-shaped boss on the saw-disk, a socket-block adapted to receive said cup-shaped boss, a convex-shaped washer surrounding the rotating spindle and a nut threaded upon said spindle for clamping together the saw-disk boss, socket-block, and rotating spindle, substantially as described.

2. In a circular sawing machine means for setting the saw-disk at any desired inclination to, and retaining it upon its rotating spindle, said means consisting of a cup-shaped boss formed on or fitted to the saw-disk and having a pin projecting from its surface, a concave socket-block adapted to receive said cup-shaped boss, a groove in said socket-block eccentric to the spindle orifice and adapted to receive the pin upon the cup-shaped boss

of the saw-disk, a convex washer surrounding the spindle and adapted to enter the cup-shaped boss, and a nut threaded upon the outer end of the saw-disk spindle for clamping together the saw-disk boss, socket-block, and rotating spindle, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

WILLIAM MILLER.

Witnesses:
WALLACE FAIRWEATHER,
JNO. ARMSTRONG, Junr.