

(No Model.)

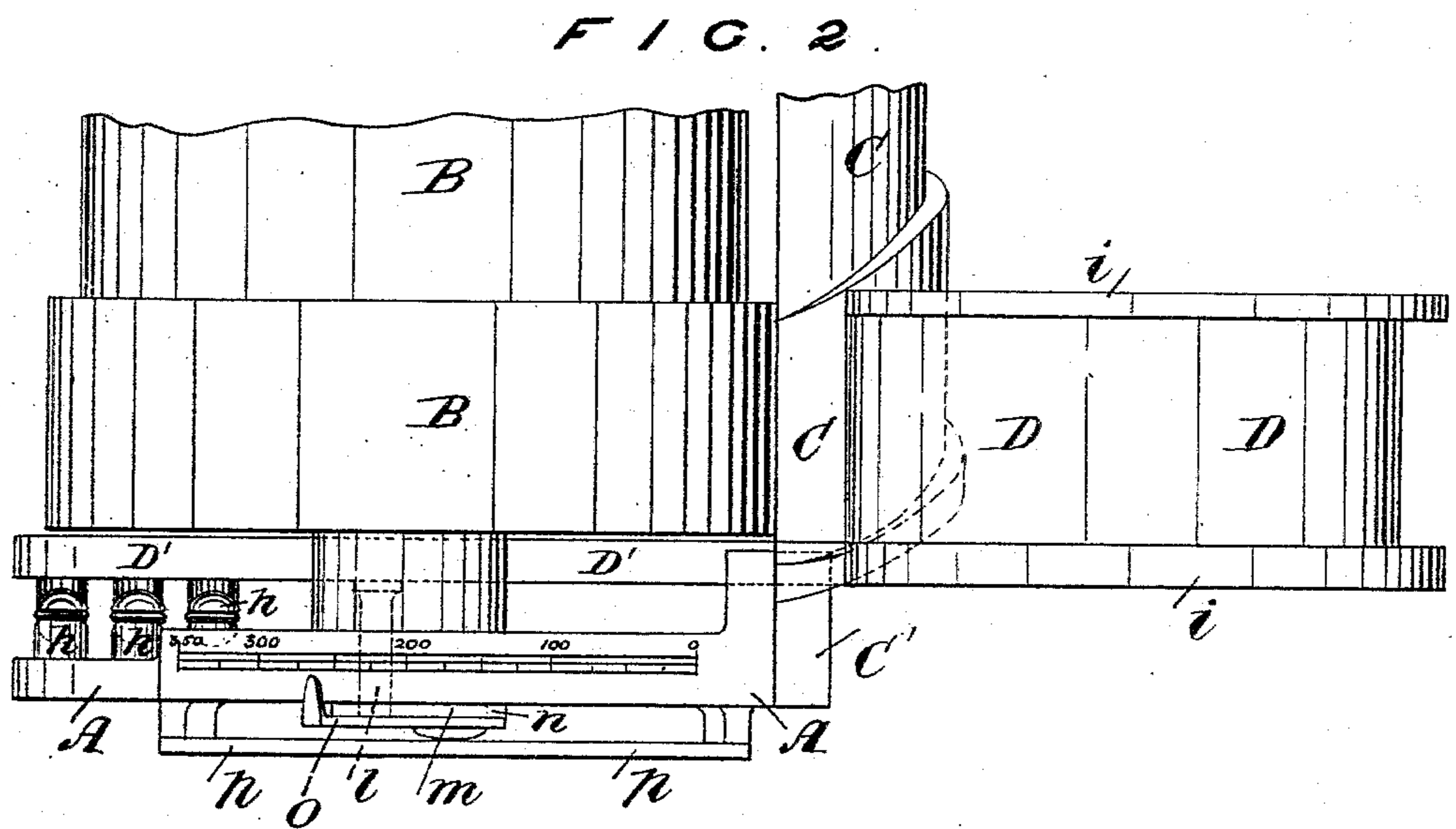
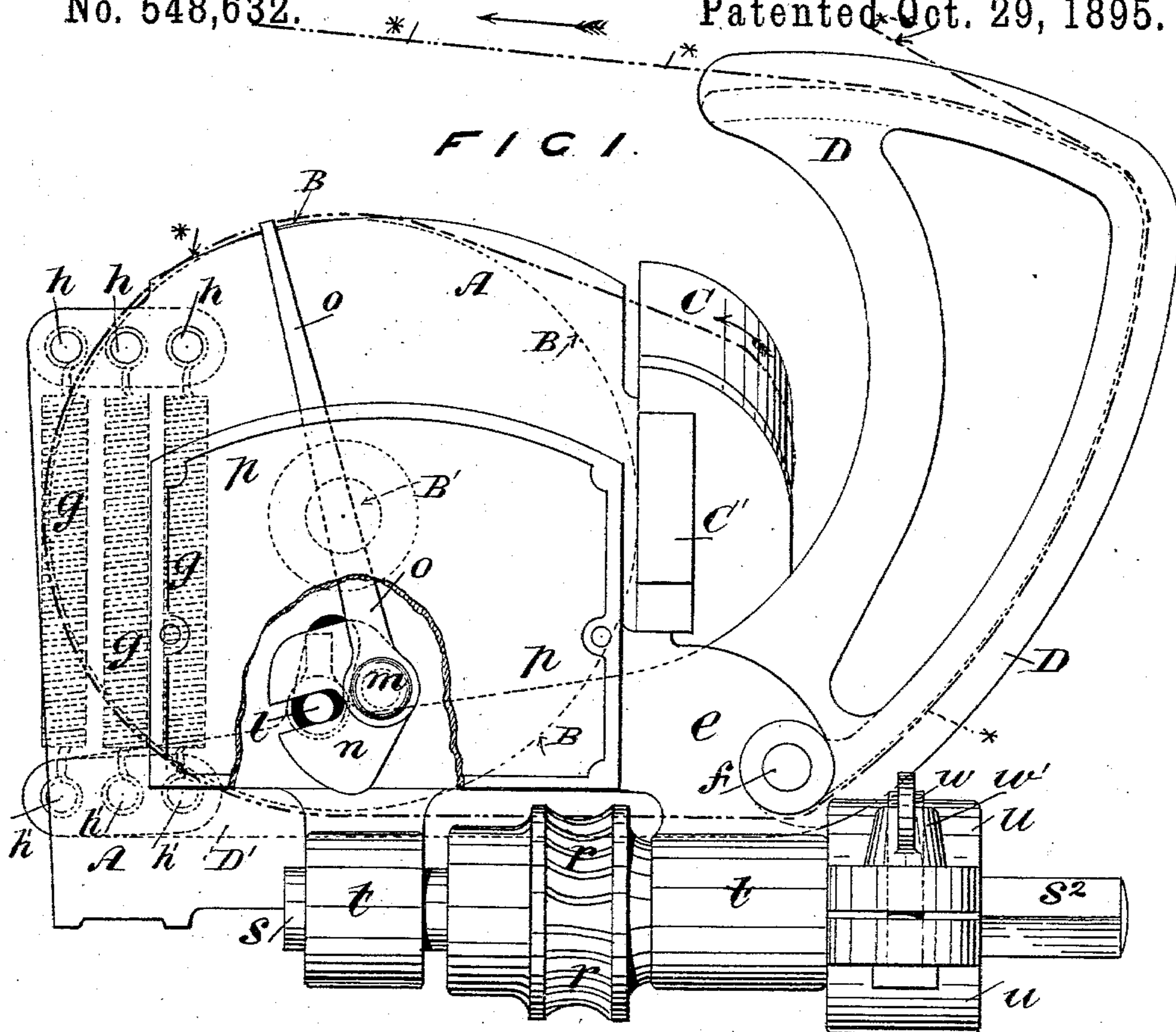
2 Sheets—Sheet 1.

J. S. DRONSFIELD.

APPARATUS FOR WINDING CARD FILLETING UPON CYLINDERS.

No. 548,632.

Patented Oct. 29, 1895.



Witnesses

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H. van Oldenburgh

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his Attorneys

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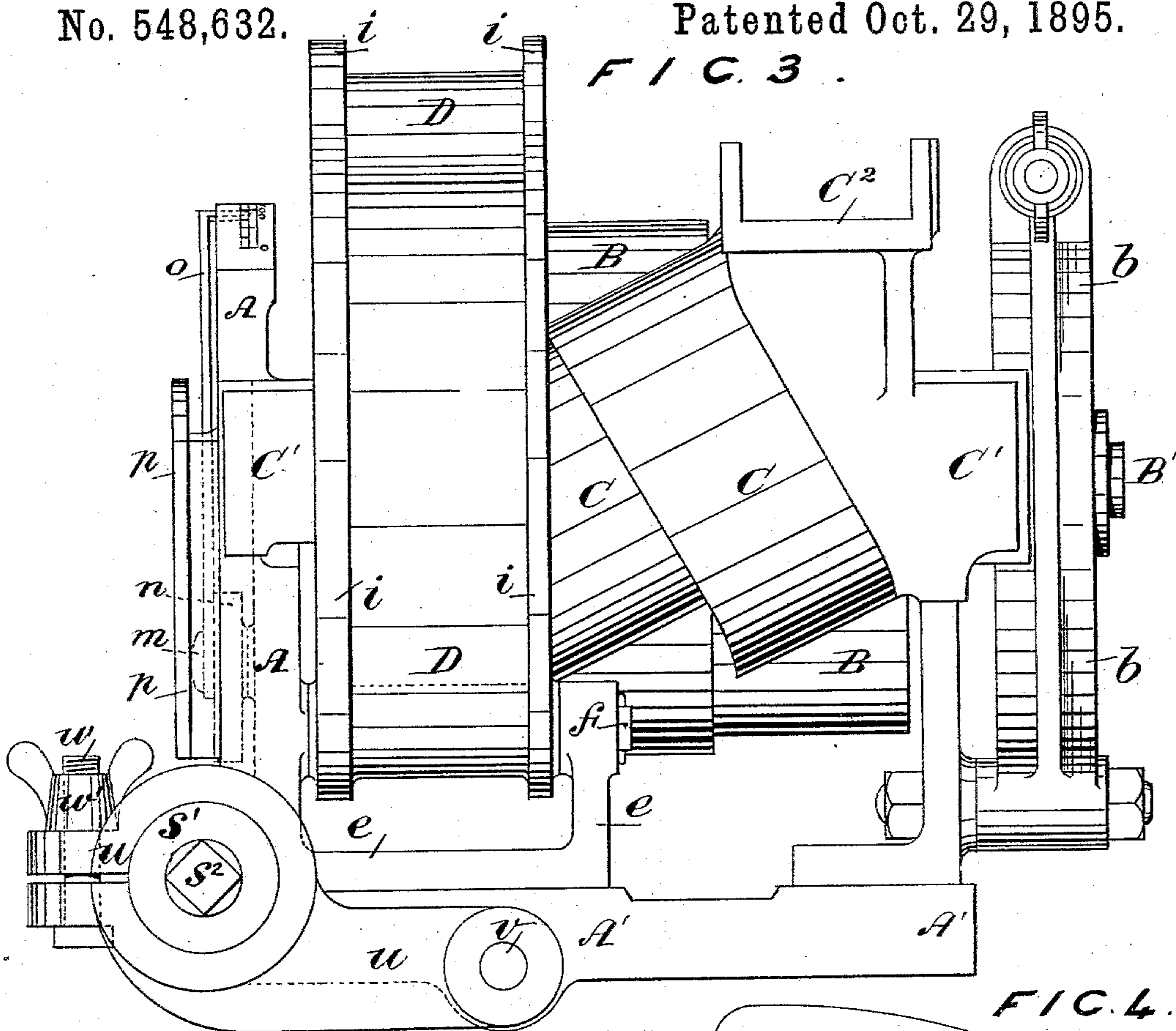
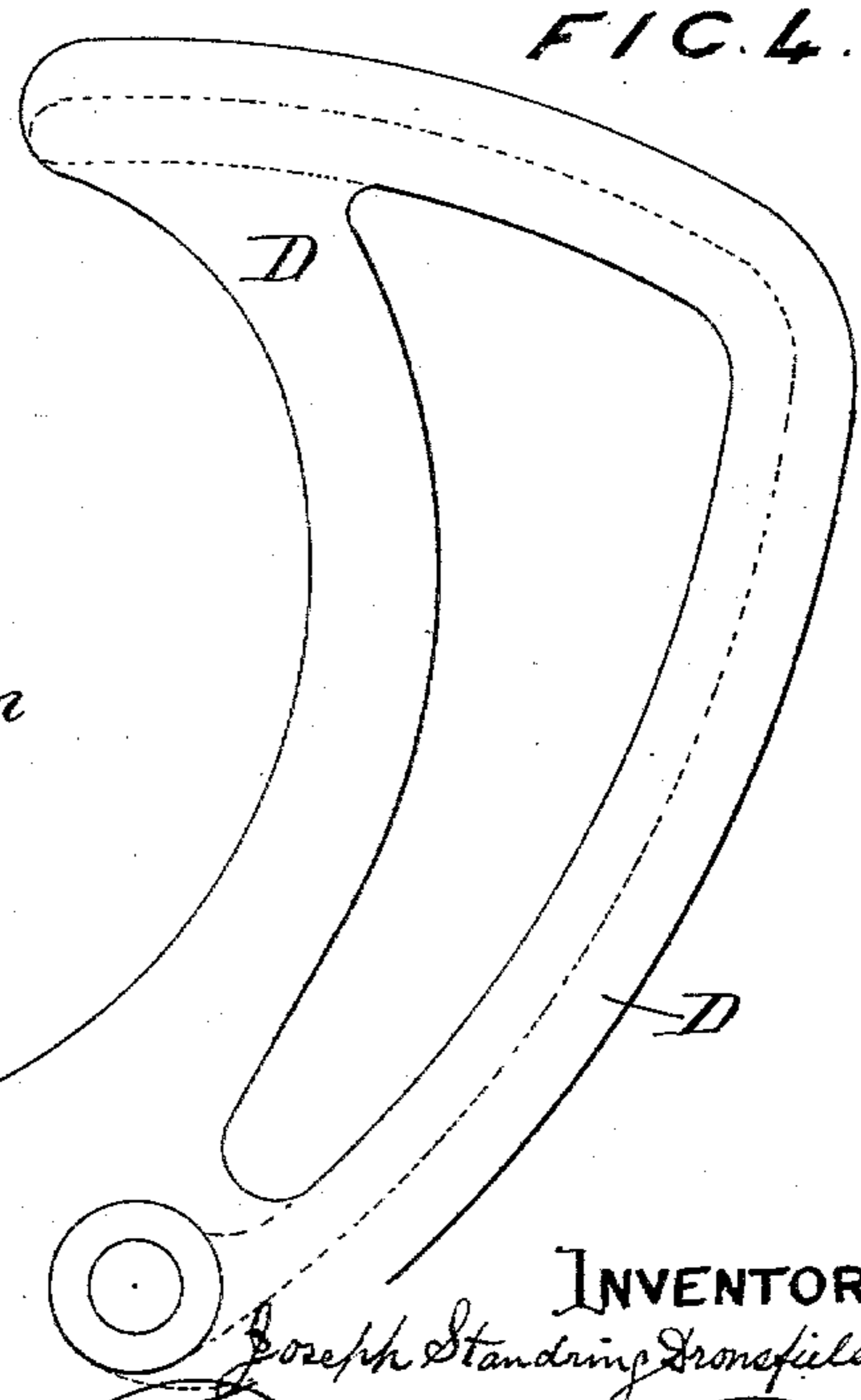
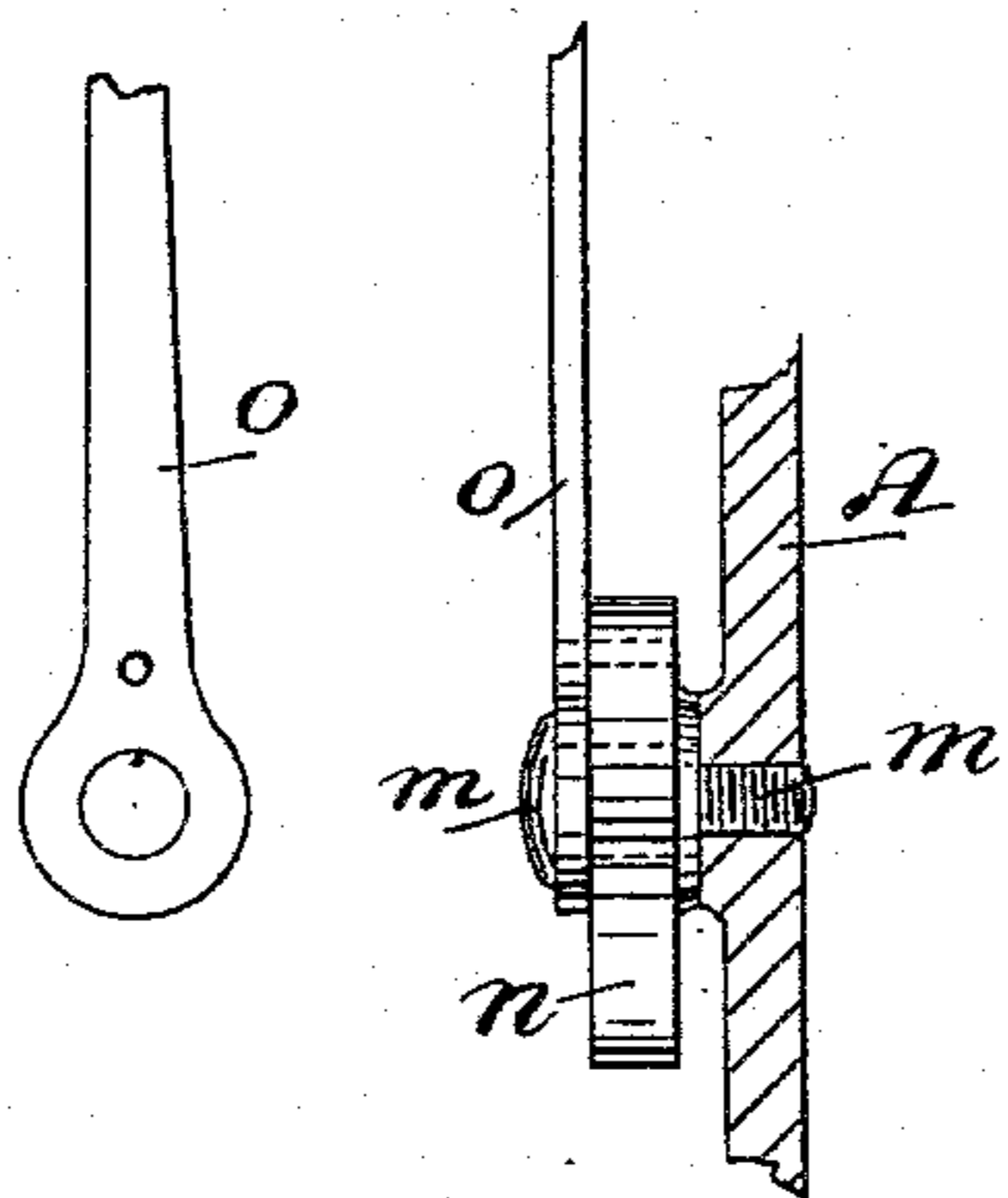


FIG. 6. FIG. 7.



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UNITED STATES PATENT OFFICE.

JOSEPH STANDRING DRONSFIELD, OF OLDHAM, ENGLAND.

APPARATUS FOR WINDING CARD-FILLETING UPON CYLINDERS.

SPECIFICATION forming part of Letters Patent No. 548,632, dated October 29, 1895.

Application filed July 8, 1895. Serial No. 555,284. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH STANDRING DRONSFIELD, a subject of the Queen of Great Britain and Ireland, of the firm of Dronsfield Brothers, Limited, card-grinding-machine makers, of the Atlas Works, Oldham, in the county of Lancaster, England, have invented certain new and useful Improvements in Apparatus for Winding Card-Filleting upon Cylinders, of which the following is a specification.

My said invention relates generally to apparatus employed in the covering of cylinders with card-fillets as is now well understood by those acquainted with the carding industries. I will, however, for the sake of clearness, refer more particularly to its application in conjunction with apparatus of this nature for which Letters Patent in the United States of America have been granted to me February 28, 1893, No. 492,716. It is essential in such apparatus that measurable and uniform tension should be put upon the filleting as it is coiled upon the cylinder, and with this object a spring tension regulator and indicator was described and ascertained in the specification of the said former patent.

The present invention relates to means whereby such spring tension regulators and indicators are made more delicate and uniform in their operation, and so as to respond at once to any retarding influence brought to bear upon the fillet in its progress over or through the head, of whatever construction the latter may be.

The annexed two sheets of drawings illustrate my present invention.

On Sheet 1, Figure 1 is an end view of a card-fillet winding-head similar in design to the head which appears in the drawings of my aforesaid former patent in the United States, but furnished in this instance with the spring-tension lever which forms the gist of my present invention. Fig. 2 is a plan view of the tension end of the head. On Sheet 2, Fig. 3 is a front elevation of Fig. 1. Fig. 4 is a separate side view of my tension-lever. Figs. 5, 6, and 7 are views of details of the index-finger and part of the connection between the same and the tension-delivery lever.

The head is marked A, the revolving

stepped pulley B, the fixed shunting-bracket C, and the tension-arm D. The ends A of the head are mounted on a sole A', (see Fig. 3,) and the spindle B' of the stepped pulley B is carried in bearings in the ends of the head A. The revolution of the stepped pulley B is retarded by the brake-strap and pulley b, as in the case of my said former apparatus. The shunting-bracket C is bolted to the ends A by means of the flanges C' C', and also carries a presser-guide C², through which the filleting passes to the stepped pulley B. All of these parts are old and have already been described in my said former patent. At the delivery end of the head I provide a double bracket e, and within this bracket and upon the stud f, I pivot my improved new tension-lever D, which is shown separately in Fig. 4 of the drawings. The tension-lever is of a bell-crank form, one limb D projecting upward and being formed with a curved surface adapted to receive the filleting as it leaves the stepped pulley, while the horizontal limb D' extends to the back of the head, the outer end being connected by three or any other suitable number of springs g g g to fixed studs h h h in the upper part of the head and to studs h' h' h', projecting from the tension-lever, all as appearing most clearly in Fig. 1 of the drawings. The curved guiding-surface of the limb D is smoothed and finished and extends from about the pivot-stud f to the upper extremity of the limb. The guiding-surface is fenced on both sides by beads i to keep the filleting in position. The filleting, which is represented by the dotted line marked * in Fig. 1, leaves the stepped pulley B in the indicated direction, and slipping over the curved guiding-surface of the tension-lever D is finally conducted to the cylinder upon which it is being wound. In order to prevent the varying angles at which the filleting leaves the lever from differentially affecting the tension-lever, I form the said lever with the extended curved part at the top, as shown, this surface being struck from the center of the pivot f. By this means I insure that even when the angle at which the filleting leaves the lever is altered (by variations in the size of the cylinder or from other causes) from the angle * to the angle **, for example, the radial length of lever

remains the same and the pull on the lever is unaltered. The horizontal arm D' of the lever is furnished with a toe *k*, (see Fig. 4,) which encounters a stop projecting from the inner side of the end A. This toe and stop prevent the lever D from being pulled by the springs *g g g* past a normal position when the lever D is free from the filleting. It will now be understood that as the filleting passes over the lever D the lever yields in the direction of traverse, the limb D' pulling on and extending the springs *g g g*.

I will now describe how the movements of the lever are communicated to an indicator, by which the operator can tell exactly what tension is being put upon the filleting. From the limb D' of the lever there projects a stud *l*, which passes through a slot in the end A, this slot appearing in Fig. 1. In the outer side of the end A, I fix a pivot-stud *m*, the said stud carrying a slotted counterbalance *n*, (shown separately at Fig. 5,) and also an index-finger *o*. (Shown separately at Fig. 6.) The index-finger and counterbalance are fixed together by a pin or other means when placed upon the stud, as in Fig. 7, and are boxed in by a cover-plate *p*, secured by screws to projections from the end, a portion of this cover-plate being shown broken away in Fig. 1 to show the parts behind more clearly. The curved upper edge of the end A is struck from the center of the stud *m* and is finished and bears a figured scale, showing the tension in pounds. The tip of the index-finger *o* plays over this scale in obedience to the movements of the limb D' of the tension-lever and shows at a glance what tension the filleting is subjected to.

When at work, the head is traversed upon shears by a screw engaging with the worm-wheel *r*, which is fixed on a spindle *s*, supported in bearings *t*, carried by the head A. At such times the worm-wheel *r* acts as a nut, and to bind the spindle *s* immovably in its place, and so keep the worm-wheel *r* from turning, I provide a binding eye-bracket *u*, connected at *v* to the head, while its split eye embraces an enlarged portion *s'* of the spindle *s*. The split eye is drawn together, so as to bind the spindle *s* therein, by means of a screw *w* with wing-nut *w'*. When it is desired to traverse the head quickly over the shears, the nut *w'* is relaxed and a handle is put on the squared end *s²* of the spindle *s*, which can then be turned, and as the worm-wheel *r* gears with the traversing screw, as with a rack, the head is quickly moved toward either end of the shears. The only part of the arrangement which is novel is the enlarged portion of the spindle *s* in combination with the split eye *u* with its jamming-bolt, the extended jamming-surface enabling a better grip to be taken of the shaft *s*.

The tension-lever D, which I have described and illustrated, might be used not only in con-

junction with the specific form of fillet-winding head which I have particularized, but also with other apparatus for coiling card-filleting upon cylinders.

I claim as my invention—

1. In combination with the pulley B, a delivery lever having a delivery limb D arranged to receive the fillet from the pulley and to deliver the same to the cylinder, and having a second limb D' with springs connected thereto and an index connected with said delivery lever, said lever being pivotally supported, substantially as described.

2. In combination, the pulley B and a delivery lever pivotally supported and having a delivery and guiding limb D arranged opposite the pulley to receive the fillet therefrom and to deliver it to the cylinder, the upper delivery part of said lever being curved and struck from the lever pivot, substantially as described.

3. In combination, pulley B, the delivery lever D, the frame carrying the same, the spindle and worm wheel thereon also carried by the frame, said spindle being adapted when turned to traverse the frame along its support, and locking means for the spindle and worm wheel *r*, consisting of the split nut on the frame and the enlarged part of the spindle with which the nut engages, substantially as described.

4. In combination, the pulley, the head A, the delivery lever pivotally supported and comprising the limbs D and D', the said limb D, being the delivery limb and extending laterally across the pulley B to receive the fillet therefrom, and the limb D' extending to one side of the path of the fillet, and an index on the head connected with the limb D', said limb being under tension, substantially as described.

5. In combination, the pulley, the pivoted lever having a delivery arm, extending from said pivot up along the side of the pulley, and having an upwardly extending bearing surface from said pivot to receive the fillet from the pulley, said lever having also a curved upper end to guide and deliver the fillet to the cylinder, substantially as described.

6. In combination, the pulley B, a delivery lever having a delivery limb D arranged to receive the fillet from the pulley and to deliver the same to the cylinder and having a second limb D' with springs connected thereto, an index finger, and a stud and counter balance fork serving as the connection between the delivery lever and the index, said delivery lever being pivotally supported, substantially as described.

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

JOSEPH STANDRING DRONSFIELD.

Witnesses:

JOSHUA ENTWISLE,
RICHARD IBBERSON.