

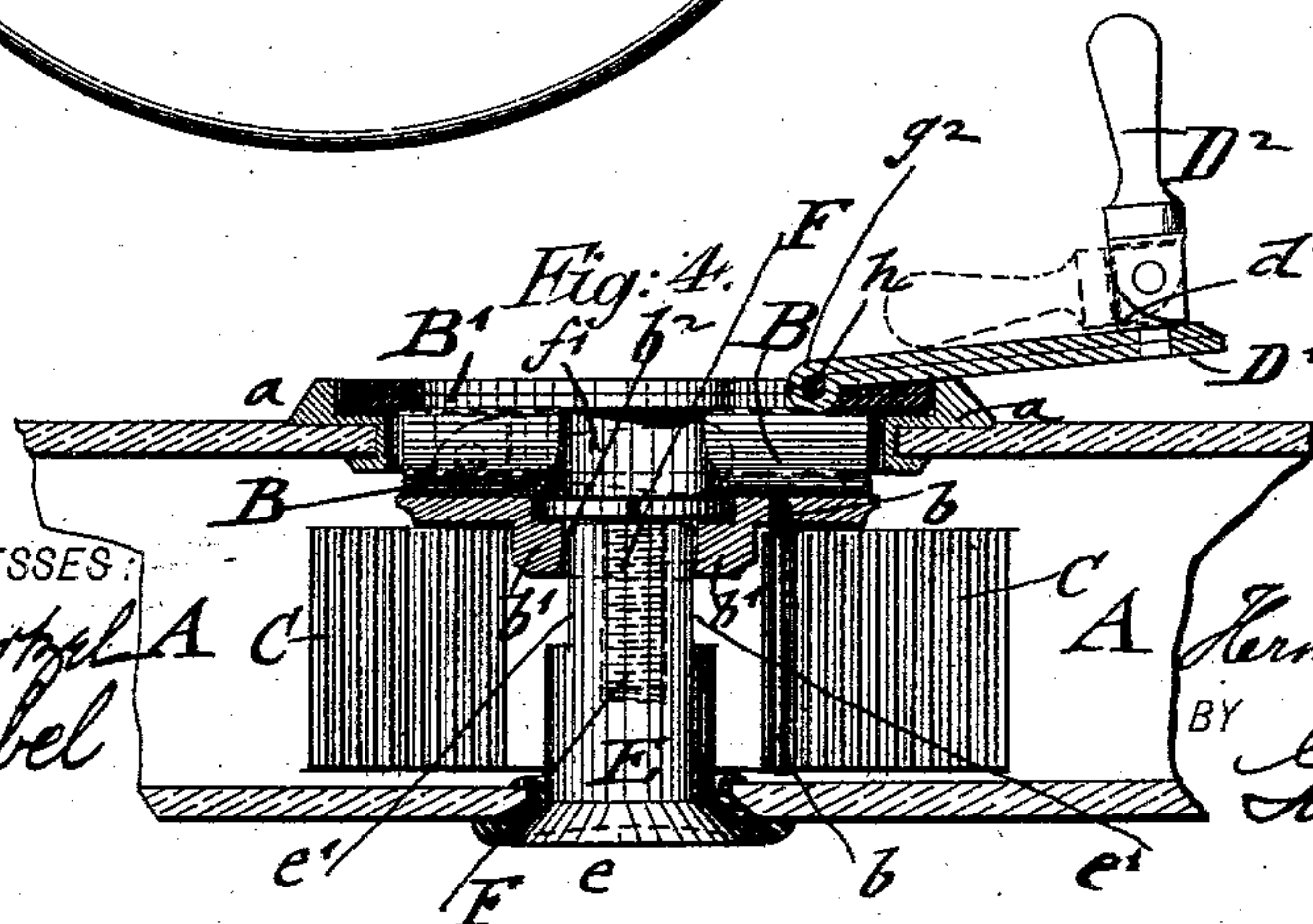
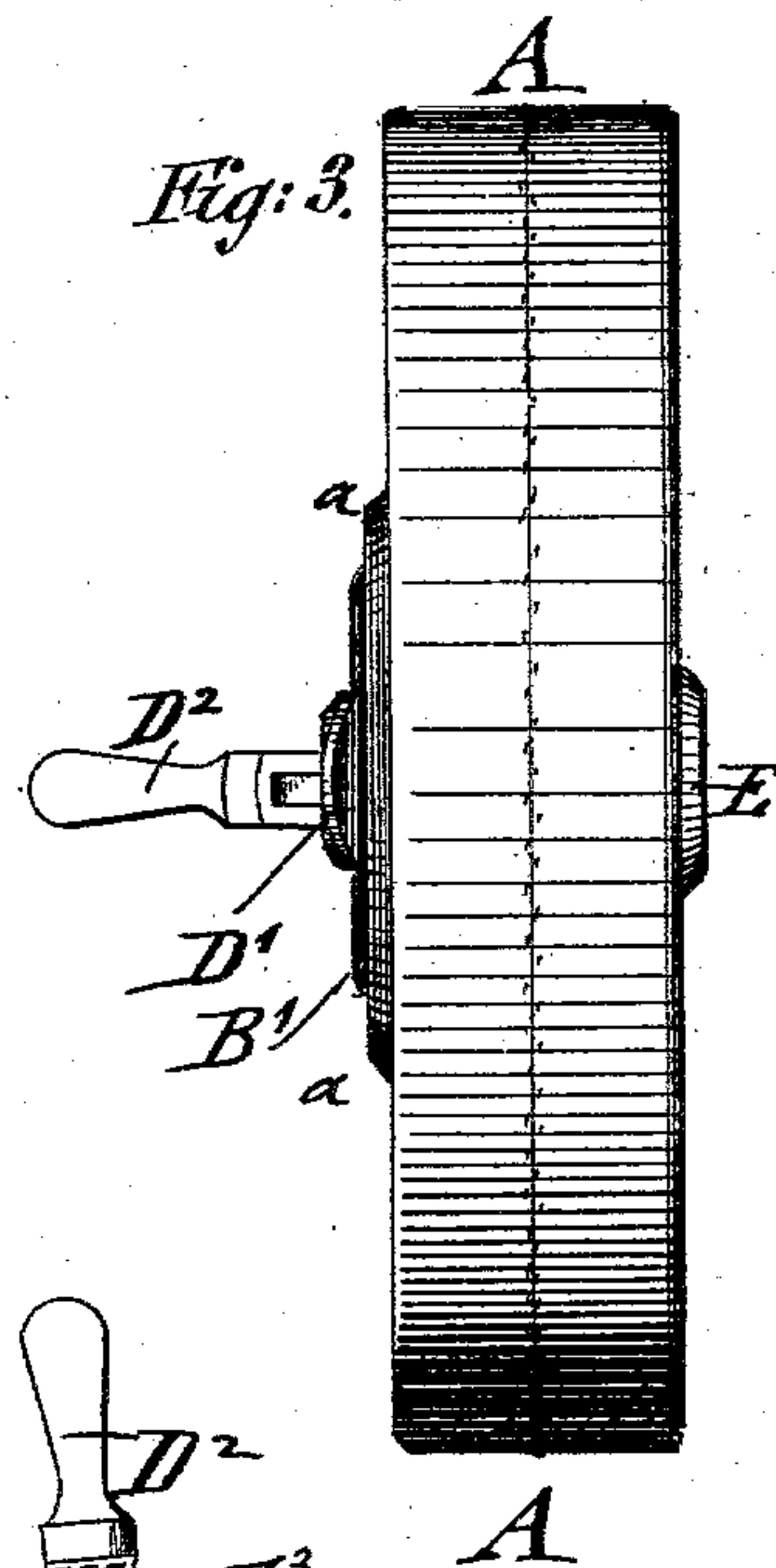
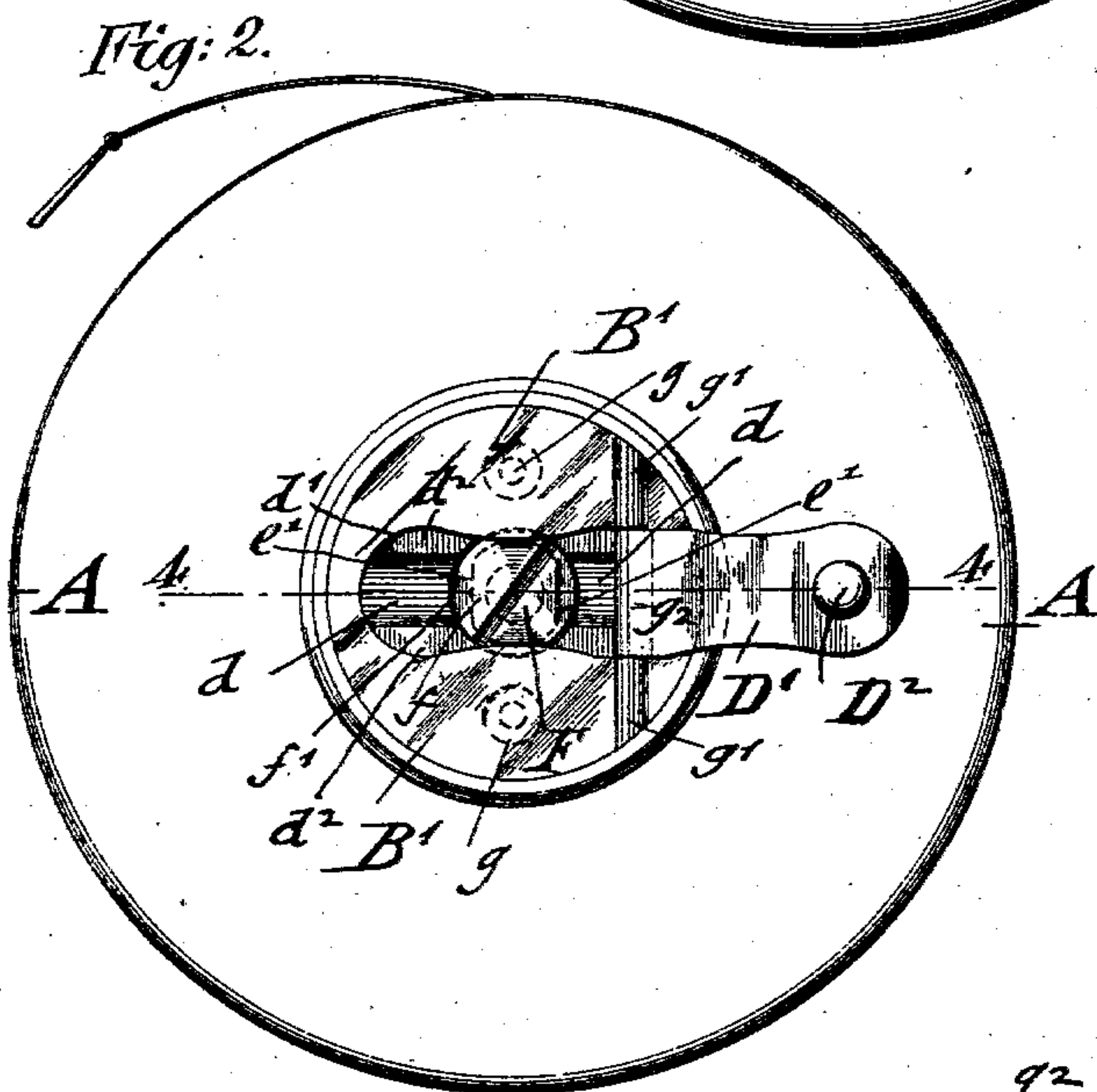
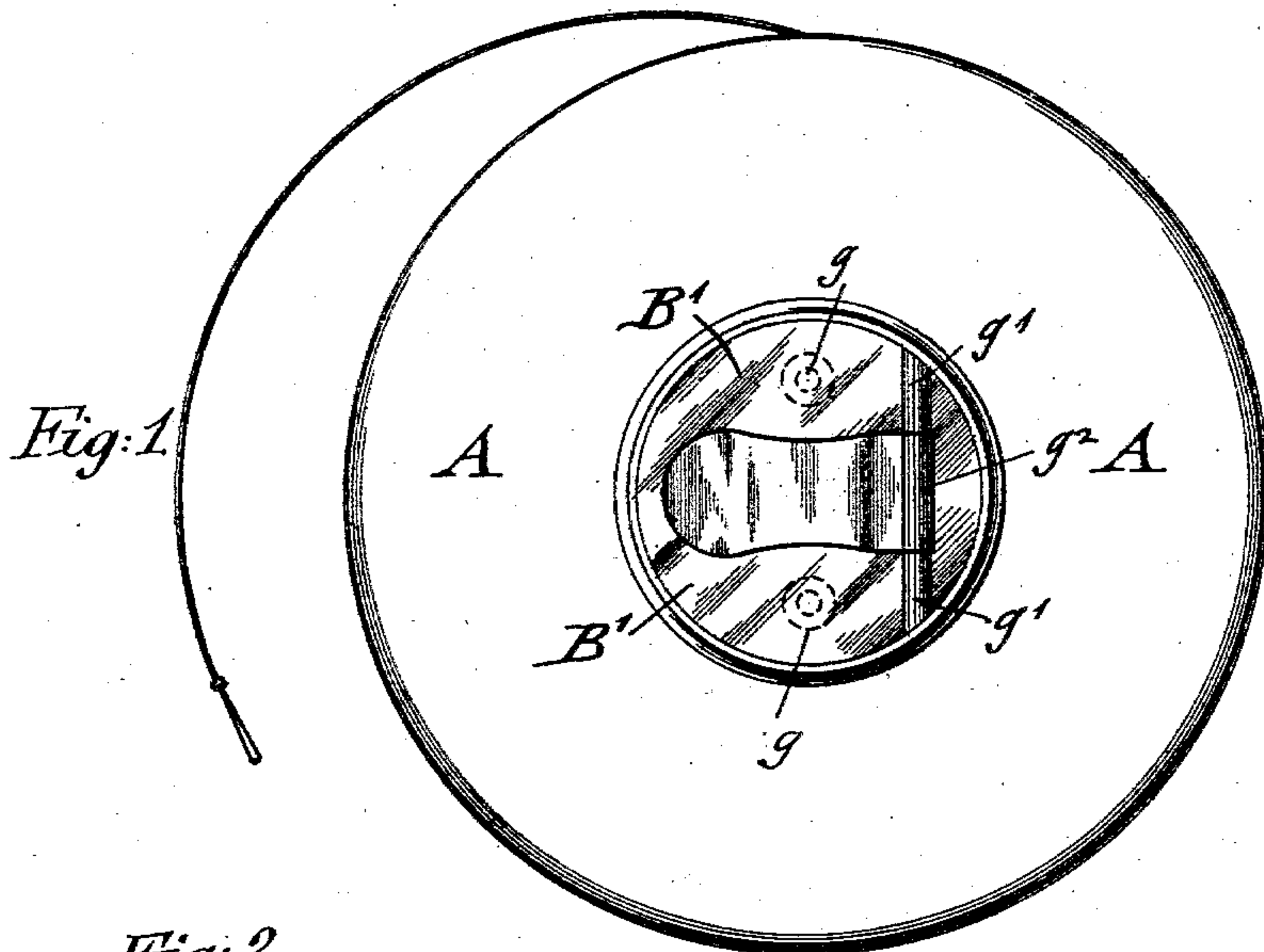
No. 629,139.

Patented July 18, 1899.

H. STEINMETZ.  
TAPE MEASURE.

(Application filed Mar. 31, 1899.)

(No Model.)



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

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## TAPE-MEASURE.

SPECIFICATION forming part of Letters Patent No. 629,139, dated July 18, 1899.

Application filed March 31, 1899. Serial No. 711,196. (No model.)

*To all whom it may concern:*

Be it known that I, HERMANN STEINMETZ, a citizen of the United States, residing in Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Tape-Measures, of which the following is a specification.

This invention relates to certain improvements in tape-measures, and more especially to improvements in the rotary center pieces of the same, by which the steel or other tape is wound up after use; and the invention consists of a tape-measure the rotary center piece of which is connected with the case of the tape-measure by means of a headed center pivot and a screw engaging the inner end of the pivot and forming the connection of the same with the hub of the rotary center piece, said pivot being flattened at its inner end, so as to fit into a corresponding recess of the hub and permit the lifting of the folding crank of the center piece out of its seat when pressure is exerted on the bottom of the case and the convenient unfolding of the same for use.

The invention consists, secondly, of a tape-measure in which the rotary center piece is provided with a covering-plate attached thereto, said covering-plate being composed of two united layers of sheet metal, a hinged crank-plate fitting into a corresponding recess or seat in said covering-plate, also formed of two united layers of sheet metal and provided with a pivoted crank, the pintle of the hinged crank-plate being retained in sleeves of the covering-plate and crank-plate, as will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a top view of my improved tape-measure, showing the crank folded into the center piece of the tape-measure. Fig. 2 is a similar view of the same, showing the crank in outwardly-swung position, so as to be ready for winding up the tape. Fig. 3 is an end elevation of Fig. 2; and Fig. 4 is a vertical transverse section of the tape-measure and its center piece on line 4 4, Fig. 2, drawn on a larger scale.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the case of the tape-measure, which is made of

two sections of leather stitched together with edges in the usual manner.

B is the rotary center piece, which is guided in a circular rim *a* in the top part of the case, said center piece being provided with an inwardly-extending pin *b*, to which the loop-shaped inner end of the graduated steel or other tape C is applied in the well-known manner.

The rotary center piece B is provided with a diametrical groove *d*, into which the folding crank-handle *D*<sup>2</sup> of the hinged crank-plate *D*<sup>1</sup> is placed when the handle and crank-plate are folded up into the center piece, as shown in dotted lines in Fig. 4.

The center piece B is provided with a hub *b*<sup>1</sup> at its under side having an opening *b*<sup>2</sup>, into which is fitted the inner end of a center pivot E, the outer end of which has a flaring head *e*, while the inner end is flattened at opposite sides at *e'* *e'* and extended into the center piece, so as to fit into the opening of the hub *b*<sup>1</sup>, as shown in Fig. 4.

The center piece B is connected with the center pivot E by a fastening-screw F, the head *f* of which has a certain play in the cylindrical center portion *f'* of the center piece, as shown in Figs. 2 and 4, and the threaded shank of which engages a threaded socket in the inner end of the center pivot E, so that a tight connection between the case and the center piece can be established.

The outer or face side of the center piece B is provided with a covering-plate B', which has an opening *d'* of the size and shape of the crank-plate, said opening being in line with the diametrical groove *d* of the center piece, the side walls of the groove forming shoulders or seats *d*<sup>2</sup> for the crank-plate *D*<sup>1</sup>, as shown in Fig. 2. The opening of the covering-plate B' is provided with a contraction at its center which prevents the detaching of the connecting-screw F from the center piece when it is unscrewed from the center pivot E. When the handle and the hinged crank-plate are placed in position in the recess of the center piece and opening of the covering-plate B', it is difficult to open the crank-plate for rewinding the tape-measure. For the purpose of facilitating the lifting and opening of the crank-plate pressure is exerted on the opposite side of the case and on the head of the



center pivot, so that a slight lifting action is exerted by the head of the connecting-screw from the inside on the crank-plate and the same slightly lifted, so that it will either open  
 5 by gravity or permit the thumb to take hold of it and place it in open position for winding. It is therefore not necessary to have a nick in the edge of the crank-plate for raising the same. From time to time the connecting-  
 10 screw is turned for a few turns, so as to reestablish the tight connection of the center piece with the center pivot and case. This is especially necessary when the tape-measure has been used for some time, as that side of  
 15 the case which is usually pressed upon assumes a slightly-concave form and produces thereby the loose fit of the center piece, which is tightly reseated in the case by screwing up the connecting-screw into the center pivot.  
 20 The covering-plate of the center piece has heretofore been cast in one piece with the center piece, while the crank-plate was also made of cast metal. This is dispensed with in my improved center piece by making the  
 25 covering-plate B' in a separate piece from the center piece and fastening it on the same by means of fastening-screws g. The covering-plate B' is made of two layers of sheet metal, which are riveted together. The upper layer  
 30 is stamped up by dies, so as to form sleeves g' for the steel pintle h, to which the crank-plate is hinged. The crank-plate D' is also made of two layers which are stamped out of the covering-plate B' and riveted together, a  
 35 pintle-sleeve g<sup>2</sup> being obtained by closing up the ends of the two layers from which the crank-plate is formed. The lug d<sup>3</sup>, to which the crank-handle D<sup>2</sup> is pivoted, is riveted to the outer end of the crank-plate. By mak-  
 40 ing the covering-plate, as well as the crank-plate, in this manner of two layers of sheet metal much greater strength is imparted to them, so that they can resist breakage and wear much better than the center piece and  
 45 folding crank-plates heretofore in use in tape-measures. Besides this the center piece, with its folding crank-plate and handle, can be manufactured much cheaper, as the milling and drilling of the pintle-socket which was  
 50 heretofore necessary is dispensed with and as all parts of my improved center piece and covering-plate can be conveniently assembled

without requiring any special manipulation and finishing operations.

Having thus described my invention, I 55 claim as new and desire to secure by Letters Patent—

1. The combination, with the rotary center piece having a diametrical recess and a hub with an oblong opening, of a covering-plate, 60 a crank-plate, a handle hinged to said covering-plate and fitting into said recess, a center pivot having an enlarged head and a recessed shank fitted into the opening of the hub, and a screw connecting the center piece with the 65 center pivot, said screw permitting the lifting of the crank-plate out of the center piece by pressure exerted on the head of the center pivot so as to facilitate the opening of the crank-plate, substantially as set forth. 70

2. In a tape-measure, the combination, with a rotary center piece having a diametrical recess or depression, of a covering-plate, a crank-plate hinged thereto, a handle pivoted to the under side of the crank-plate and adapted to 75 fit in the depression in the center piece, a center pivot connecting said center piece with the case of the tape-measure and provided with an enlarged head and a recessed shank fitting into the hub of the center piece, and a screw con- 80 necting the center piece with the center pivot, the head of the screw being guided in a cylindrical center portion of the center piece, substantially as set forth.

3. In a tape-measure, the combination, with 85 the rotary center piece provided with a covering-plate having an opening for the crank-plate, a diametrical recess or depression in said center piece below said opening, and shoulders at each side of said recess, of a fold- 90 ing crank-plate hinged to the covering-plate, and a handle hinged to said crank-plate, said crank-plate resting on the shoulders and the handle in the diametrical recess of the center piece when folded into the opening of the 95 covering-plate, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

HERMANN STEINMETZ.

Witnesses:

PAUL GOEBEL,  
M. H. WURTZEL.