

No. 873,712.

PATENTED DEC. 17, 1907.

F. BUCK.
TAPE MEASURE.
APPLICATION FILED NOV. 3, 1906.

Fig. 1.

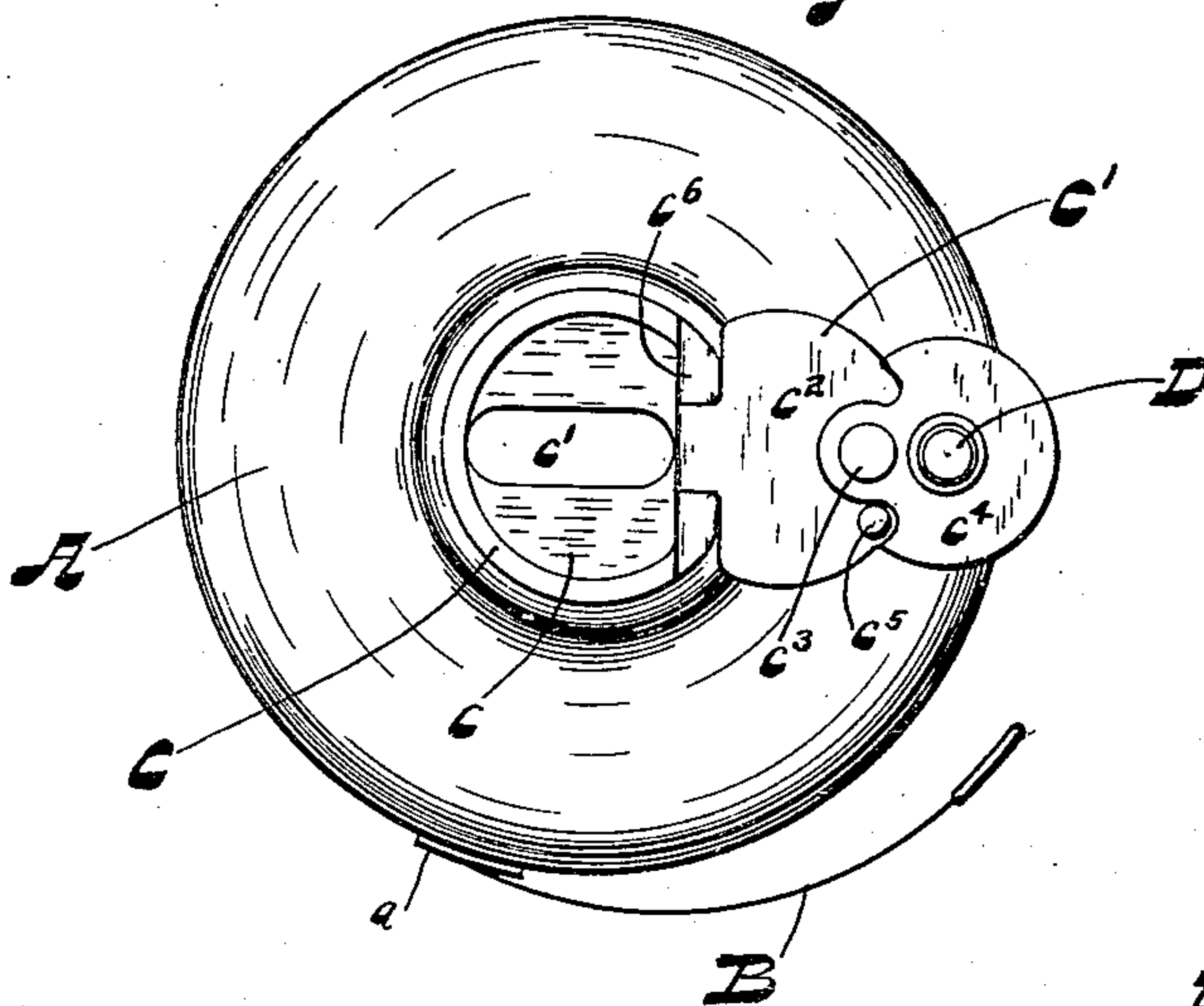


Fig. 2.

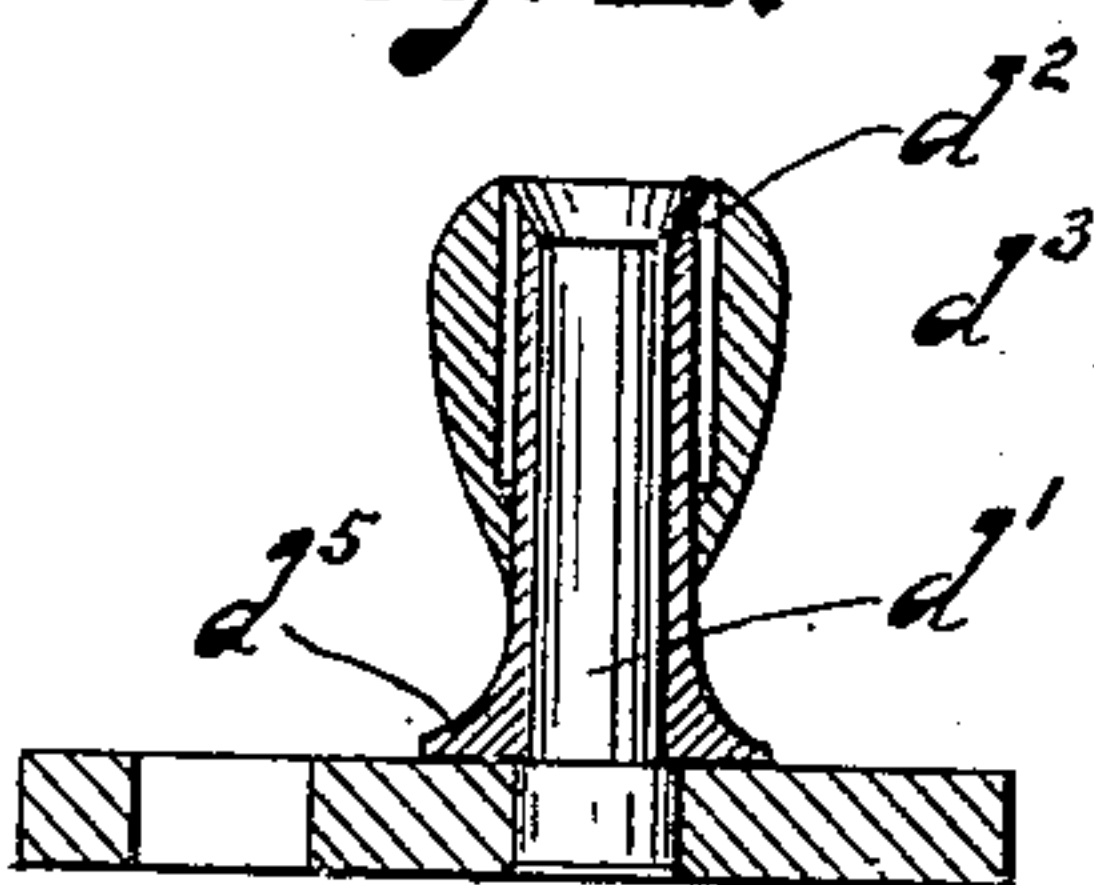


Fig. 3.

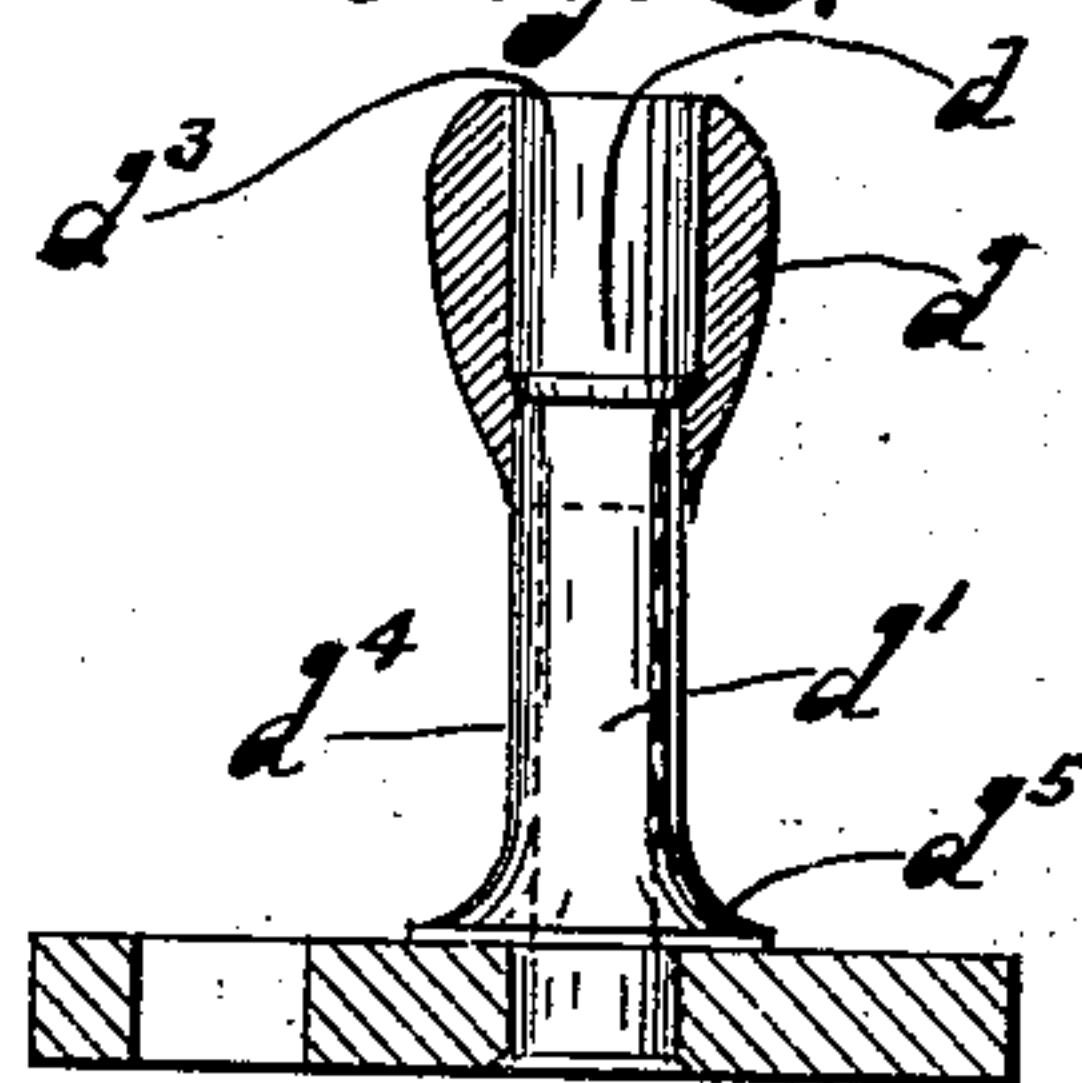
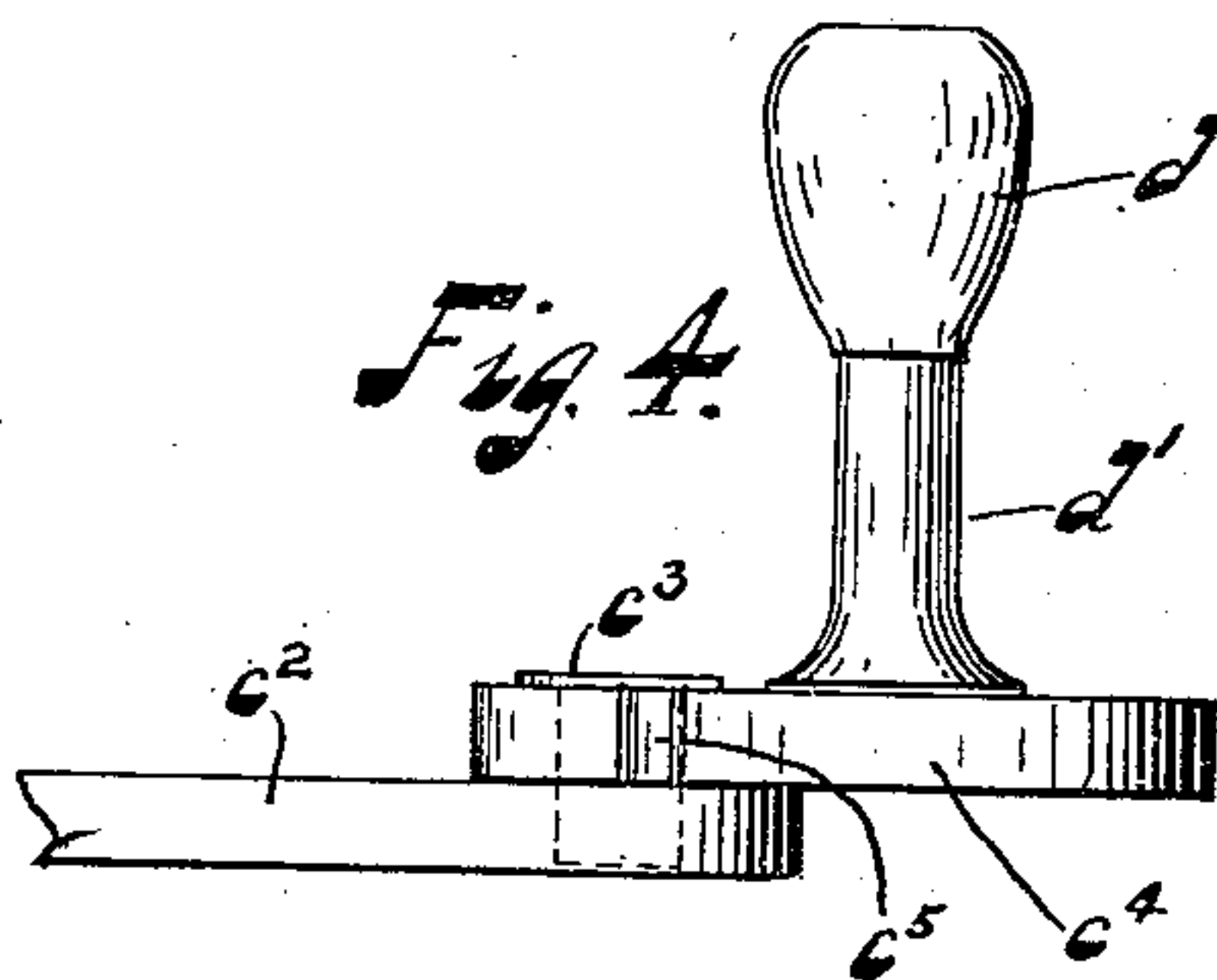


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

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TAPE-MEASURE.

No. 873,712.

Specification of Letters Patent.

Patented Dec. 17, 1907.

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To all whom it may concern:

Be it known that I, FRED BUCK, a citizen of the United States, resident of Saginaw, county of Saginaw, and State of Michigan, have invented a new and useful Improvement in Tape-Measures, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

My invention, relating as above indicated to improvements in tape measures, has regard more particularly to the construction of the cranks and crank handles on such measures, whereby rotation of the drum, upon which the tape line is wound, is effected.

The prime object of the invention is the provision, in connection with a crank, adapted as in most approved forms of tape measures to fold within the tape case, of a handle that, while accommodating itself to the small amount of room allowed when the crank is folded up, can nevertheless be extended so as to be quite readily grasped when the crank is unfolded.

To the accomplishment of this object said invention consists of means hereinafter fully described and specifically set forth in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing: Figure 1 represents a top plan view of an approved form of tape measure embodying my improved type of handle construction; Fig. 2 is a transverse cross-section of a portion of the crank with my handle mounted thereon, such handle appearing in its retracted or closed position; Fig. 3 is a similar cross sectional view with the handle in its extended or open position; while Fig. 4 is a side elevation of a portion of the crank in question with the handle appearing in its extended position.

The particular form of case and crank here shown have been chosen for purposes of illustration only, for, as will be readily understood, my improved form of handle is readily adapted without any modification, or with only slight modifications, to not only other kinds of tape measures than that

here appearing, but also to analogous devices where the results here sought to be accomplished would prove desirable.

In the tape measure here illustrated, A designates the case, which may be made of any suitable material and in any suitable form. Such case is usually, as shown, of approximately flat cylindrical shape, and is provided at a point in its periphery with the slotted plate *a* through which the tape line B passes. Centrally mounted within case A is a revoluble drum C, upon which the tape line is designed to be wound, the size of such drum depending upon the material of the line, whether linen or steel. The manner in which drum C is mounted, as well as other details of its construction are, for the present purpose, immaterial, and hence not illustrated. The end of the drum to which the crank C', whereby rotation thereof is effected, is attached, is formed with a central depression or recess *c* designed to receive the crank when folded up. In such central depression there is further formed an opening *c'* through which the knob of crank handle D is designed to project into the interior of the drum, when the crank is thus folded.

The form of folding crank illustrated consists of a disk *c²* which is nearly circular and is hinged at its secant edge to a flange *c⁶* at the upper end of the drum. Near the outer or free end of such disk is pivoted upon a pin *c³* a second somewhat similar disk *c⁴*, having two notches at opposite sides of its point of pivotal attachment, which notches are adapted to engage in the extended and closed positions of the disk, respectively, a pin *c⁵* upon disk *c²*. The two disks are thus seen to form a folding crank, by means of which, when extended, the drum may be readily rotated. When folded up, however, the crank will be completely within the drum, the disk *c²* fitting snugly within the recess *c* in the drum's end.

The foregoing type of crank is, as has been stated, presented as being merely typical of those now used in modern tape measures. The difficulty encountered in the use of even the simplest forms of folding tape measure cranks, is that the crank handle must necessarily be so short as to afford a very inconvenient means for rotating the crank. It is to obviate this difficulty that the handle construction forming the subject-matter of my present invention has been designed. As

will be evident from an inspection of Figs. 2, 3, and 4, this consists essentially in making the handle extensible. To this end, instead of simply rotatably mounting knob d upon the stud d' , I also make the same longitudinally reciprocable of such stud. The stud, Figs. 2 and 3, is of the usual form and bears a head d^2 , such as is ordinarily applied to retain the knob d in place. The aperture d^3 in such knob, however, is made for the major portion of the length of the knob of a diameter a trifle greater than that of the head d^2 . The limited bearing portion at the lower end of the knob, moreover, is not directly in contact with the stud, but is mounted upon a sleeve d^4 that is itself free to rotate about the stud; but this sleeve has no endwise movement on the stud and so far as its relation to such movement on the part of the knob proper is concerned it may be regarded as a part of the stud. When, however, it is sought to rotate the knob, whether in its retracted or extended position, the sleeve is obviously free to rotate with it. The lower end of the sleeve is formed with a flaring foot or base d^5 corresponding with that ordinarily found in a handle-knob of this sort, while the knob d is preferably made substantially pyriform with its end of larger diameter disposed upwardly. Upon seizing the handle, therefore, the pressure of the fingers between the flaring base d^5 of the sleeve and the oppositely flaring body of the knob d , serves to immediately raise the latter into its extended position on the stud. A handle of substantially twice the length that would otherwise be afforded, is thus secured. In fact, this movement of the knob to its outer extended position is quite automatic, the pressure of the fingers sufficing to actuate it outwardly when they grasp the handle in the first instance without any actual voluntary movement being required. Normally, such knob will lie in its lower retracted position of its own weight. When it is desired to return it, after being extended, along with the handle, into the folded position within the open end of the drum, it is simply pressed down against the base of the stud d' , or rather of the sleeve d^4 and the whole turned inwardly as before.

The operation of my improved device has been set forth in sufficient detail, in connection with its construction, which is quite simple as has been seen. In conclusion, then, it is not necessary that I do more than point out that, by means of this little device, I greatly enhance the value and usefulness of any type of folding crank for tape measures or similar instruments, where, in the folded position of the parts only a limited amount of room is available for the crank handle; by making the latter of the automatically extensible construction above described, the knob assumes a size sufficient to enable it to be grasped not merely, and with difficulty,

between the tips of the fingers, but securely and at the same time easily, between the bodies of the whole fingers, or, as would more naturally be the case, between the forefinger and the thumb. Rotation of the drum is thus made easier with a relatively short crank where my form of handle is employed, than has heretofore been the case with a much longer crank provided with only the short stubby handle thus far known.

Having thus described my invention in detail, that which I particularly point out and distinctly claim, is:—

1. In a tape-measure, the combination with a case and revoluble drum for the tape line, of a crank attached to one end of said drum, and a crank-handle for said crank, such handle comprising a stud and a knob borne by said stud and having an aperture extending therethrough which permits said knob to be reciprocated on said stud, the upper or head portion of the stud serving as a stop for the knob when the latter is extended to its uppermost position to constitute an extensible handle.

2. In a tape-measure, the combination with a case and revoluble drum for the tape line, of a crank attached to one end of said drum, and a crank-handle for said crank, such handle comprising a stud and a knob of tapering form throughout borne by said stud, said knob having its end of greater diameter disposed upwardly, and an aperture in said knob which permits said knob limited reciprocable movement longitudinally on said stud, the upper or head portion of the stud serving as a stop for the knob when the latter is extended to its uppermost position to constitute an extensible handle.

3. In a tape-measure, the combination with a case and revoluble drum for the tape line, of a crank attached to one end of said drum, and a crank-handle for said crank, such handle comprising a fixed stud and a rotatable substantially pyriform knob borne by said stud, said knob having its end of greater diameter disposed upwardly, and a portion of the aperture in said knob having a diameter greater than that of the head of said stud, whereby a limited reciprocable movement is permitted said knob longitudinally of said stud, the upper or head portion of the stud serving as a stop for the knob when the latter is extended to its uppermost position to constitute an extensible handle.

4. The combination with a crank, of a crank-handle therefor, such handle comprising a headed stud and a knob borne thereby and having an aperture which permits said knob limited reciprocable movement longitudinally on said stud, the upper or head portion of the stud serving as a stop for the knob when the latter is extended to its uppermost position to form an extensible handle.

5. The combination with a crank, of a crank-handle therefor, such handle comprising a headed stud and a rotatable knob of tapering form throughout, borne by said stud, said knob having its end of greater diameter disposed upwardly and an aperture which permits said knob limited reciprocable movement longitudinally of said stud, the upper or head portion of the stud serving as a stop for the knob when the latter is extended to its uppermost position to form an extensible handle.

6. The combination with a crank, of a crank-handle therefor, such handle comprising a headed stud and a substantially pyriform knob rotatably mounted upon said stud, said stud having its end of greater diameter disposed upwardly and an aperture in said knob having a diameter greater than that of the head of said stud, whereby a limited reciprocable movement is permitted said knob longitudinally of said stud, the upper end of said knob in its normal retracted position lying substantially flush with the top of said head, the upper or head portion of the stud serving as a stop for the knob when the latter is extended to its uppermost position to form an extensible handle.

7. The combination with a crank, of a crank-handle therefor, such handle comprising a headed stud, a sleeve with a flaring foot rotatably mounted upon said stud, and a substantially pyriform knob rotatably mounted upon said sleeve, a portion of the aperture in said knob having a diameter greater than that of the head of said stud, whereby a limited reciprocable movement is permitted said knob longitudinally of said sleeve.

8. The combination with a crank, of a

crank-handle for said crank, such handle comprising a fixed stud having a head, a sleeve rotatably mounted on said stud, and a rotatable knob borne by said sleeve, the aperture in said knob being formed to permit said knob limited reciprocable movement longitudinally of said sleeve.

9. In a tape-measure, the combination with a case and a revoluble drum for the tape line, of a crank attached to one end of said drum, and a crank-handle for said crank, such handle comprising a fixed stud having a head, a sleeve rotatably mounted on said stud, and a rotatable substantially pyriform knob mounted on said sleeve, said knob having its end of greater diameter disposed outwardly and its aperture formed to permit said knob limited reciprocable movement longitudinally of said sleeve.

10. In a tape-measure, the combination with a case and a revoluble drum for the tape line, of a crank attached to one end of said drum, and a crank-handle for said crank, such handle comprising a fixed stud having a head, a sleeve rotatably mounted on said stud, and a rotatable substantially pyriform knob mounted on said sleeve, said knob having its end of greater diameter disposed outwardly and a portion of the aperture in said knob having a diameter greater than that of the head of said stud, whereby a limited reciprocable movement is permitted said knob longitudinally of said sleeve.

Signed by me, this 29th day of October, 1906.

FRED BUCK.

Attested by—

THEO. HUSS,
E. R. GOULD.