

(No Model.)

W. L. E. KEUFFEL.  
TAPE MEASURE CASE.

No. 522,064.

Patented June 26, 1894.

Fig. 1.

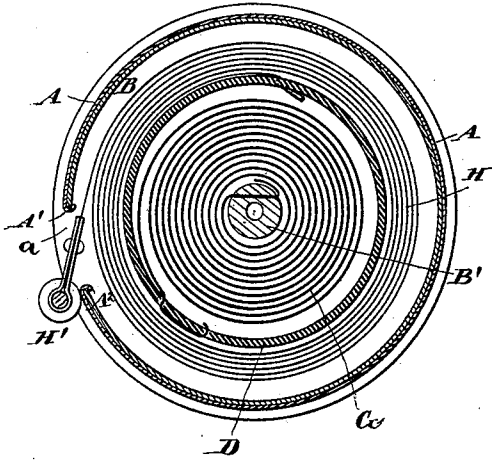


Fig. 3.

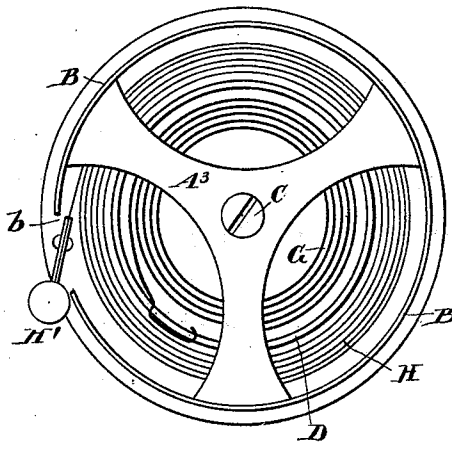


Fig. 2.

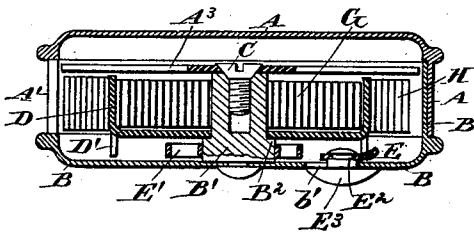


Fig. 4.

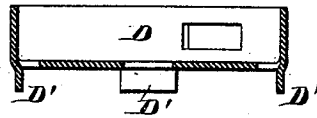


Fig. 6.

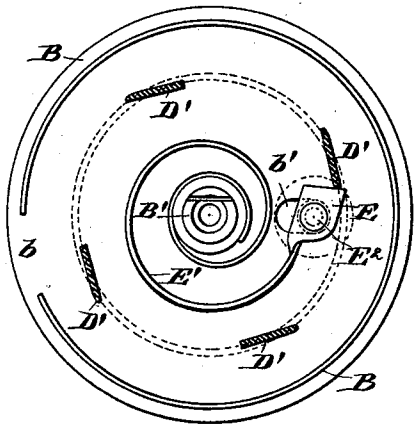
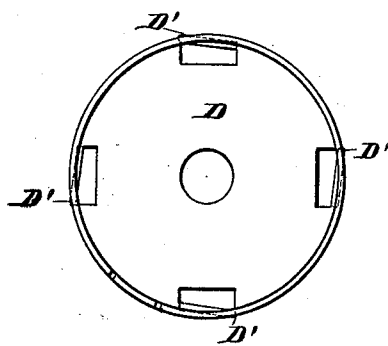


Fig. 5.



Witnesses:

Charles R. Searle.  
M. F. Boyle.

Inventor:

William L. E. Keuffel  
by his attorney  
James D. Stewart

# UNITED STATES PATENT OFFICE.

WILLIAM L. E. KEUFFEL, OF HOBOKEN, NEW JERSEY.

## TAPE-MEASURE CASE.

SPECIFICATION forming part of Letters Patent No. 522,064, dated June 26, 1894.

Application filed February 17, 1894. Serial No. 500,526. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. E. KEUFFEL, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented a certain new and useful Improvement in Tape-Measure Cases, of which the following is a specification.

The invention applies to that class of tape measures which wind up with a spring. It will serve well with either woven tapes or metallic ribbons. I adopt that construction of the exterior shell which allows the two parts to be separated when required for any purpose, but I make the exterior half with the metal curled inward at the edges of the orifice through which the tape is drawn out and in. The inner shell is made with a just sufficiently large hole to match into those lips. The effect is to insure that the aperture for the movement of the tape is maintained of uniform size under all conditions, and that its edges present rounded and smooth surfaces. This is particularly important with the use of woven tapes which are liable to injury by chafing against the edges of the ordinary shells, which destructive effect is liable to be greatly increased when the partial rotation of the ordinary shells relatively to each other nearly closes the aperture. I make the internal drum or revolving cylinder by stamping it from a single piece of metal, giving the required cylindrical exterior, and I form the series of teeth required in the back by simply cutting and bending outward portions of the metal at proper intervals around the periphery. Each piece so bent outward is set parallel to a line tangential to the surface of the drum. I make the stop which engages with these teeth with a surface beveled to match to that tangential position of the several teeth with which it is required to engage, and make integral with it a spring which serves to urge it outward with the required gentle force. This stop is operated by a button extending through a slot to the outside in the long-approved manner.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is a section at right angles to the axis and at the mid-height. Fig. 2 is a central section in the plane of the axis. These figures show the entire device. I am representing the entire construction as lying on its face. Fig. 3 is a top view with the cap or outer shell removed. Fig. 4 is a central section of the revolving drum detached. Fig. 5 is a corresponding plan view. Fig. 6 is a top view of the smaller part of the main casing with certain portions removed. The teeth at the bottom of the drum are shown in this figure in horizontal section.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

A is the larger part of the outer shell and B is the smaller part. The cylindrical peripheries of each fit closely together. A sufficient hole *a* is formed in the outer shell by cutting out a portion and bending the edges of the adjacent part inward and slightly backward, as indicated by *A'*, *A*<sup>2</sup>. A corresponding hole *b* is formed in the inner part, and the adjacent edges of this part are left plain. On applying the parts together in the required position, the edges of the part B are received in the corresponding curled lips *A'*, *A*<sup>2</sup> of the part A. A hollow post *B'*, rigidly set in the part B, serves as a center for the revolving drum D, and has a shoulder *B*<sup>2</sup> at the proper height to hold the drum in such position so that it shall revolve without friction except the slight amount involved by its contact with the small post. The drum is stamped from sheet metal, and cut by dies or otherwise near the edges so as to partially liberate portions of the metal. These portions are deflected outward by the die which effects the cutting or by other suitable means, so as to form the teeth *D'* required to be engaged by the stop to hold the drum in the required position and allow the tape to be conveniently used when the latter is partially entirely drawn out. Care is taken in deflecting or bending these teeth outward to leave them in such form that the inner face of each is set at a tangent to a somewhat smaller circle.

E is a spring stop, forced outward by a spring *E'*, which is formed integral with the head E, having its outer face correspondingly

tangential. It may be pressed inward toward the center by a pin  $E^2$ , which extends through a radial slot  $b'$  in the shell B. The pin carries a head or button  $E^3$  by which it may be operated.

G is a sufficiently long and stout volute spring coiled within the drum D, and connecting the drum with the post  $B'$  in the obvious manner so as to exert the required tension to wind in the tape.

$A^3$  is a spider-frame extending across the interior of the entire casing, and held by a screw C tapped into the post  $B'$ .

H is the tape of woven fabric or thin steel, properly marked, as usual. It is attached to the exterior of the drum, having more or less of its length coiled in the annular space exterior to the drum, and extends out tangentially through the apertures  $a, b$ . It may be equipped with any ordinary or suitable provision  $H'$  at its outer end to facilitate handling, and to insure that the end shall not be drawn into the case. As usual with all this class of devices, the tape is to be all stored in the annular space.

I claim as my invention—

1. In a tape-measure case, the outer shell A, having the aperture  $a$  and internal lips  $A', A^2$ , at the edges of said aperture, in combination with the shell B, having an aperture  $b$ , the adjacent edges of the metal matched in the said lips  $A', A^2$ , and with the tape H, drum D and operating spring G, arranged for joint operation as herein specified.

2. In a tape-measure case, the drum D,

stamped from a single piece of metal, having teeth  $D'$  formed by cutting and bending and with their inner surfaces parallel to lines tangential, to the surface of the drum in combination with the external shells A, B, spring G, tape H and movable stop E, arranged for joint operation as herein specified.

3. In a tape-measure case, the movable stop E, having the spring  $E'$  formed integral therewith, in combination with the operating pin  $E^2$  and button  $E^3$ , slotted shell B, matched shell A and drum D formed with teeth  $D'$ , all arranged to serve as herein specified.

4. The tape-measure case described, comprising the shells A, B, with the lips  $A', A^2$ , insuring that the apertures  $a, b$ , shall be properly matched, the drum D formed of a single piece with its teeth  $D'$  cut therefrom and arranged nearly tangential to the drum and mounted on the post  $B'$ , supported by the shoulder  $B^2$  and the spider-frame  $A^3$  so as to turn with little friction, and the stop E, having the spring  $E'$  formed integral, and provisions as the pin  $E^2$  and button  $E^3$  for moving it at will to liberate the drum, all combined and arranged for joint operation substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

WILLIAM L. E. KEUFFEL.

Witnesses:

H. REICHE,  
EDWARD WIEMER.