July 17, 1934. F. BUCK 1,966,707

TAPE MEASURE

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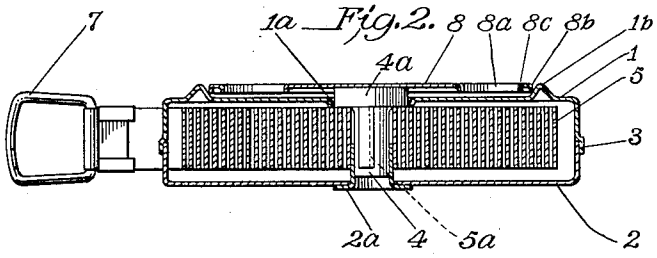


Fig. 2.

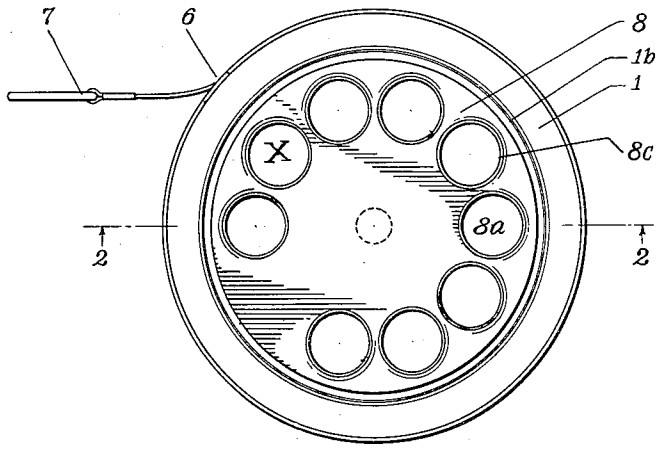


Fig. 1.

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TAPE MEASURE

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2 Claims. (Cl. 33—138)

This invention is an improved tape winding device for use in a tape measure of conventional form, that is, a tape, a casing having a tape opening, a drum or spindle rotatable in bearings in the casing and a tape attached to the drum and passing through the tape opening.

The improvement provides a drum-actuating means simple in construction, capable of being formed by stamping from sheet metal, inexpensive, and adapted to be assembled speedily in mass production.

An object of the invention is to provide a tape measure of unusual and attractive appearance that shall have no projecting or folding handle, thus differentiating from tape measures of usual construction.

Another object is to provide a novel drum actuating device wherein a number of circularly arranged finger recesses or openings are provided in a disk-like member, enabling the operator, by inserting a finger tip in any convenient recess to rotate the disk and wind up the tape. The disk formed with finger openings also functions as a shutter to expose characters, letters or words that may be impressed on the underlying face of the casing for advertising or display purposes. Moreover, the disk with its finger tip openings possesses an operating advantage over the conventional crank handle, in that the disk being close to the wall of the casing, presents a shallow recess so that although the user's finger tip easily exerts a grip ample to wind the tape, yet under conditions of ordinary use, the finger will slip out of the recess before the tape ring can be pulled tightly enough against the casing to stretch, tear or injure a tape, even one made of fabric. Formerly, the usual crank arrangement encouraged the operator to finish winding by pulling on the handle, thereby bringing unnecessary strain and wear on the tape and shortening its life. My improvement overcomes this objection.

A further object of the invention is to provide a disk with flanges around its periphery and also around the several finger tip openings so that the disk is strongly reinforced against being bent, even though the openings are located so close together as to have but little metal between them. Moreover, the flanged edges of the finger tip openings provide a sufficiently large smooth bearing to engage the finger tip comfortably while winding the tape.

In the appended claims I have pointed out the essential elements of my invention, it being understood, however, that the claims are not intended to be limited to the form of the parts illustrated and described further than a limitation to the described form is necessary to distinguish them from the prior art.

The same reference characters indicate the same parts in all the figures of the drawing.

In the drawing Fig. 1 is a side view of a tape measure embodying my invention.

Fig. 2 is a cross sectional view taken on the line 2—2 of Fig. 1.

As is clearly shown in the drawing, the casing proper consists of the usual front member 1 and back member 2, flanged and joined together at 3. The tape winding spindle or drum 4 is rotatably mounted in bearings 1*a*, 2*a* in the casing walls 1 and 2. Tape 5, preferably made of fabric, has its inner end 5*a* fastened to spindle 4, its outer end projecting through tape opening 6. To the free end of the tape the usual ring 7 is attached.

All of the foregoing elements are assembled in known manner to provide a conventional tape measure to which my improvement is adapted.

In applying my invention I fix to the end 4*a* of drum 4, by welding or otherwise, a flat disk 8 of sheet metal. The end 4*a* is preferably enlarged to present a collar where it projects through the bearing 1*a* in the front member of the casing.

Disk 8 is mounted so as to rotate in a plane close to wall 1 while turning the drum 4 to wind the tape. Preferably disk 8 is formed with a plurality of circularly arranged recesses or openings 8*a* to receive the finger tips of the operator when winding the tape. Wall member 1 of the casing is formed with an upstanding peripheral bead 1*b* that surrounds the area over which disk 8 operates. The outer face of disk 8 is preferably flush with the top of bead 1*b* and its outer margin is reinforced by an inwardly projecting peripheral flange 8*b*. Each finger tip opening 8*a* is preferably bounded by a flange 8*c* that reinforces the narrow strip of metal between adjacent openings. The flange 8*c* also presents appropriate area for the finger tips to engage comfortably while winding.

The parts may be assembled in the following manner:

The casing members 1 and 2 are assembled and fastened together by solder, welding, or otherwise, and the inner end 5*a* of tape 5 is passed in through opening 6 and out through bearing 1*a* and is then fastened to the winding drum 4, in known manner.

Drum 4 with the tape end attached is pushed in through bearing 1*a* and the tape is pulled out taut through opening 6. An end of thimble 2*a*

is then inserted through an opening in back wall 2 of the casing and press fitted onto the end of drum 4. That completes the assembly.

The user winds the tape by inserting a finger tip in whichever of the shallow depressions or openings 8*a* is most convenient, and then rotates the disk with his finger until the tape is completely wound on the drum and the ring 7 brings up against the casing at opening 6. Damage to the tape is avoided because the opening 8*a* is of shallow depth due to the closeness of disk 8 to front wall 1. The user's finger tip will ordinarily slip out of the opening when the tape is completely wound and before it can be injured by being pulled too hard, as above noted.

The tape 5 can be removed easily by taking out thimble 2*a*, taking off disk 8 with its attached drum 4, and unfastening the old tape. Since the opening 1*a*, in which the enlarged end or collar 4*a* rotates as in a bearing, is somewhat larger than the reduced part of the drum 4, space is provided through which the attached end of the tape, along with several turns of tape remaining on the drum, can be pulled out of the casing along with the drum by merely separating disk 8 from casing member 1.

The shape of the finger holes or recesses 8*a*, or their arrangement on the disk 8 can be otherwise than as shown in the drawing and suitable characters, as X, may be printed on front wall 1 so as to be exposed by the openings 8*a* when disk 8 is rotated, for display purposes.

By the means above described a tape measure has been provided that is attractive and unusual in appearance, is simple in construction and adapted to be produced in quantities rapidly and cheaply. It has no projecting handle or similar part and the winding disk is arranged so that when actuated by the finger tip it prevents winding the tape too tightly. The finger tip openings serve also as shutters to expose or attract attention to the characters on the tape casing.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. A tape measure, including a casing containing a drum and a tape attached thereto, having in combination a rotatable disk fixed to an end of the drum and disposed adjacent to a wall of the casing and finger tip receiving recesses formed in said disk, said disk being arranged to rotate in a plane close to the wall of the casing and spaced therefrom, said casing being formed with an externally raised circular bead whose top is substantially flush with the outer face of the disk.

2. A tape measure, including a casing containing a drum and a tape attached thereto, having in combination a rotatable disk fixed to an end of the drum and disposed adjacent to a wall of the casing and finger tip receiving recesses formed in said disk, said disk being arranged to rotate in a plane close to the wall of the casing and spaced therefrom, the end of the drum to which the disk is fixed being provided with a collar rotatable in an opening formed in said wall, the collar being of larger diameter than the portion of the drum to which the tape is attached, whereby the end portion of the tape which is secured to the drum is withdrawable from the casing along with the drum and disk when the disk is removed from the casing.

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