

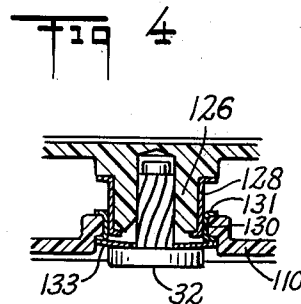
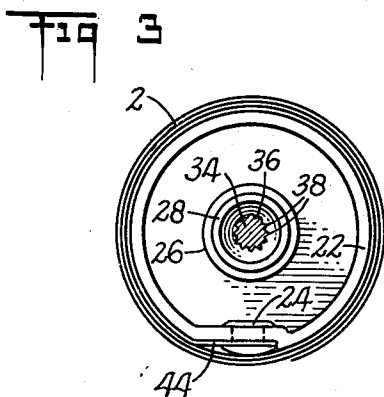
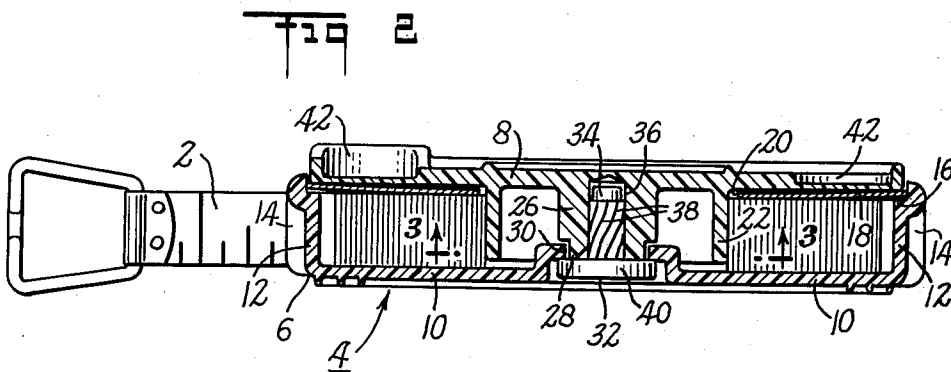
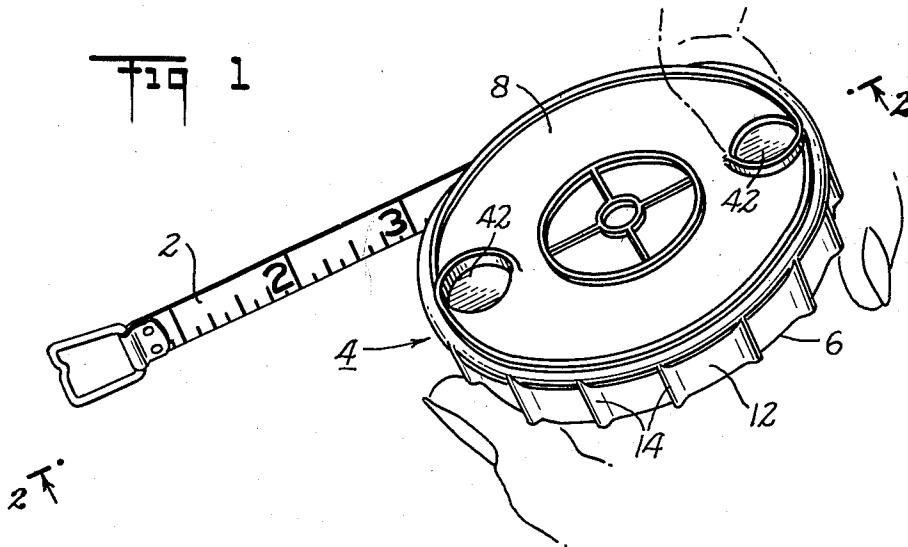
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TAPE MEASURE

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3,078,058

TAPE MEASURE

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This invention relates to tape measures, and more in particular to a steel measuring tape and its reel and casing.

An object of this invention is to provide a simple, sturdy tape reel and casing construction. A further object is to provide an improved reel-type casing for steel tapes or the like. A further object is to provide improved steel tape and reel casing arrangements. A further object is to provide for the above with structure which is simple, sturdy, relatively inexpensive to manufacture; and, which is superior in its operation and adaptable to various conditions which are met during use.

These and other objects will be in part obvious, and in part pointed out below.

FIGURE 1 is a perspective view of one embodiment of the invention;

FIGURE 2 is an enlarged sectional view on the line 2-2 of FIGURE 1;

FIGURE 3 is a reduced sectional view on the line 3-3 of FIGURE 2; and,

FIGURE 4 is a view similar to FIGURE 2, but showing another embodiment of the invention.

Referring to FIGURE 1 of the drawings, a steel measuring tape 2 has a casing 4 which includes a reel upon which the tape is wound manually. Casing 4 is formed by a main casing shell 6 and a rotatable cover plate 8, both of plastic. As shown best in FIGURE 2, the main casing shell 6 has a bottom wall 10 and an upstanding peripheral wall 12 having ribs 14 thereon which facilitate gripping in the hand. The upper edge of the peripheral wall 12 has a ledge 16 upon which a rigid sheet metal disc 18 rests. Disc 18 has a central opening 20, so that it forms an annular wall, and the rotatable cover plate 8 has an integral annular flange 22 which projects through opening 20. Flange 22 forms a collar to which the end of tape 2 is attached (see FIGURE 3) by a rivet 24. Referring again to FIGURE 2, cover plate 8 also has a hub 26, which has a reduced end portion 28 which projects into a central opening 30 in the bottom wall 10 of the main casing shell 6. A metal stud 32 has a shank 34 driven into a central hole 36 in hub 26. Shank 34 has external spiral ribs 38 which are embedded into the surrounding surface of the hub, thus to anchor the stud in place. Stud 32 has a head 40 which overlies the end of the hub 26 and the adjacent inner peripheral portion of the bottom wall 10 of the main casing shell 6. The central portion of the main casing shell is recessed so that the surface of the stud head is substantially flush with the adjacent casing surface.

The rotatable cover plate 8 has a pair of oppositely disposed finger ledges or semi-cylindrical dialing members 42 (see FIGURE 1). Either of these finger ledges may be engaged by a finger, as indicated in FIGURE 1, to turn the cover disc 8 in a clockwise direction. Referring to FIGURE 3, the inner end of the tape is attached to flange or collar 22 through a permanently attached end strip 44 which has its outer end detachably connected to the tape in a manner not shown. This strip 44 remains wound around the collar, except when the tape is to be removed for replacement. The tape is drawn into the casing and tightly wound onto collar 22 by merely rotating the cover disc or plate 8 with a finger of one hand while holding the main casing shell 6 in the other hand. Sufficient clearance is provided to permit free rotation, and reeling and

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unreeling the tape. The tape is readily withdrawn by pulling it while holding the main casing shell 6.

The metal disc 18 provides a stationary annular wall between the tape and the upper cover disc 8. The tape 5 is wound above the surface of the wall 10, thereby avoiding excessive friction. Disc 18 strengthens the construction of the case by giving firm support to the upstanding walls 12, substantially eliminates wobbling of cover plate 8 by its peripheral support of collar 22, and provides low-friction surfaces.

Ledges 42 are simple in construction, and may be cast in the material which is illustratively a light-weight plastic. In this embodiment, the main casing shell 6 and cover plate 8 are of high density polystyrene. The construction is rigid and not easily damaged, and yet it does not mar the surface which it contacts. The assembly is easily performed, it involving merely the fitting of the parts together without the use of tools, except to rivet the end of strip 44 to collar 22, and the driving of stud 32 into hub 26.

In the embodiment of FIGURE 4, the central structure differs from that of the embodiment of FIGURES 1 to 3, but the remaining structure is identical. In FIGURE 4, the hub 126 has an external ferrule 128 rigidly fixed to it. Ferrule 128 projects into an opening 130 in a collar 131 which is rigidly mounted in wall 110 of the main casing shell. Stud 32 is rigidly anchored in hub 126, as shown in FIGURES 1 to 3. Surrounding the shank of the stud is a spring washer 133 which is dished so that it urges the head of the stud away from collar 131. Hence, ferrule 128 provides a bearing within collar 131 for the end of hub 126, and the spring washer tends to pull the entire assembly connected with the hub inwardly with respect to the casing shell. This arrangement provides a very satisfactory operating relationship with the parts moving readily, yet with the optimum amount of friction to prevent undesired reeling or unreeling of the tape.

In the illustrative embodiments of the invention, the casing shells and the cover plates are of high density polystyrene. However, the invention contemplates forming these parts of other materials, such as nylon.

As many possible embodiments may be made of the mechanical features of the above invention and as the art herein described might be varied in various parts, all without departing from the scope of the invention, it is to be understood that all matter hereinabove set forth, or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. A tape measure device comprising, a flexible metal measuring tape, a cylindrical plastic casing shell enclosing said tape, a rotatable disc-like plastic cover plate on said casing shell, said casing shell and said cover plate mating to form a casing which is imperforate except for a slot through which the tape extends and an annular bearing contact at the periphery of the cover plate, said cover plate having a central collar extending into said casing shell, means connecting the inner end of said tape directly to said central collar, said central collar having an annular central hub, and a metal stud extending through a wall of said casing shell and anchored in said annular central hub, whereby said cover plate is rotatably mounted on said casing shell, said cover plate having raised finger ledge means on its exterior, whereby said cover plate may be engaged by a finger and rotated to wind said tape on said collar.

2. A tape measure device as described in claim 1 which includes, a metal collar concentrically mounted in said casing shell, a metal sleeve rigidly mounted on said central hub and having its end projecting into said metal collar, and a dished spring washer mounted upon said

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metal stud and exerting a spring bias between said stud and said metal collar.

3. A tape measure device as described in claim 1, wherein said central collar and said central hub are of plastic integral with said cover plate and wherein said central hub provides a pivot bearing with said casing shell.

4. A tape measure unit for housing a long flexible measuring tape comprising a cylindrical molded one-piece plastic casing shell for enclosing said tape, a rotatable disc-like molded plastic cover mating with said shell to form a unit which is imperforate except for a slot through which the tape extends and for an annular bearing contact at the periphery of the cover, said cover having an integral central collar extending into said casing shell, means for connecting the inner end of a tape to said central collar, said central collar having an annular central hub which mates with and is rotatably supported by the bottom of said casing shell, and fastening means extending through the bottom of said casing shell and anchored in said annular central hub so that said cover is rotatably mounted on said casing shell, said cover plate having at least one integrally molded raised finger-engageable circu-

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lar shoulder on its top near the rim thereof, whereby said cover may be engaged by a person's finger and rotated to wind said tape onto said collar and into said casing.

5. A tape measure unit as described in claim 4 wherein said finger-engageable shoulder provides a shallow, semi-circular flanged portion to comfortably engage the end of a person's finger, the outer rim of said casing having a series of finger-engaging ribs and a thickened beaded lip surrounding said cover.

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