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J. L. CLARK
DETACHABLE TAPE MEASURE
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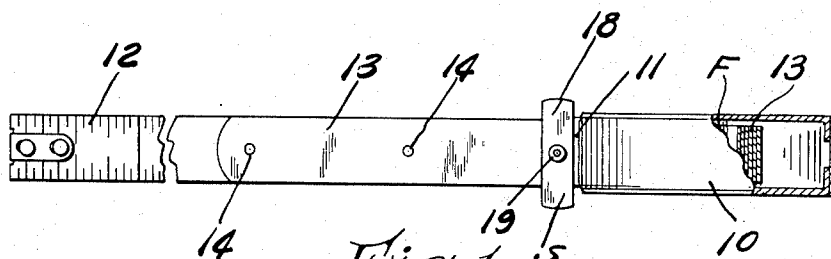


Fig. 1

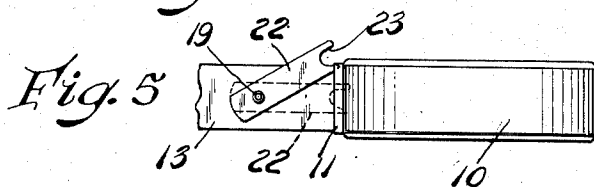


Fig. 5

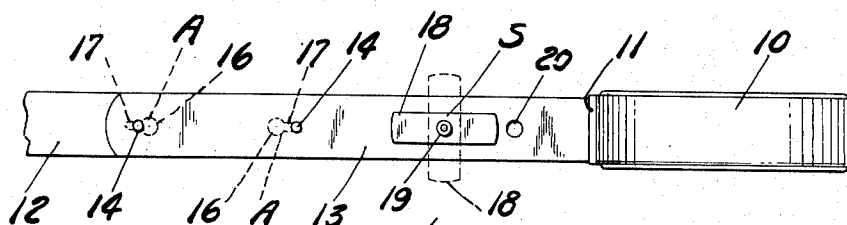


Fig. 2

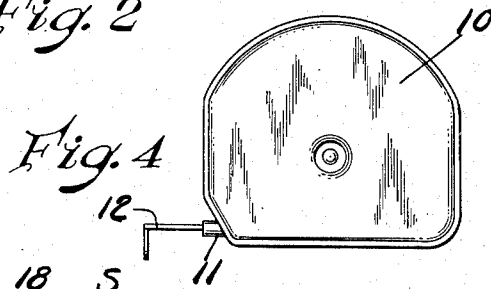


Fig. 4

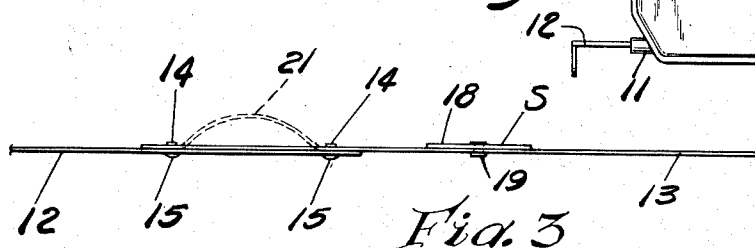


Fig. 3

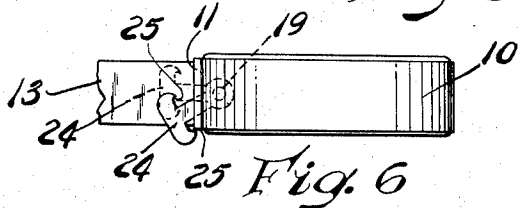


Fig. 6

INVENTOR.
Joseph L. Clark.
BY
Frank C. Leaman
ATTORNEY

UNITED STATES PATENT OFFICE

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DETACHABLE TAPE MEASURE

Joseph L. Clark, Brooklyn, N. Y., assignor to The
Lufkin Rule Company, Saginaw, Mich.

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7 Claims. (Cl. 242—84.9)

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This invention relates to detachable tape measures of the flexible steel ribbon type which includes a case with a spring wind-up device and to which the usual tape measure is detachably secured to permit easy and quick detachment of a worn or damaged tape and the substitution of a new tape for the same, or for changing to a tape of different calibrations as the occasion may require, or for more convenient use of the measure without the case.

The spring wind-up device can be of the conventional types such as a flat strip coiled spring, one end attached in the case and the other end attached to the tape, or it may be a spring wind drum with a strip attached to said drum and to which the tape is fastened, and the drum may be either a flexible band or a stiff shell drum.

One of the salient objects of the invention is to provide a measuring device which includes coupling means on the tape and tensioning winding strip respectively to form a simple, practical and easily operable coupling, and provide means on the winding strip for holding it extended to facilitate the attaching and/or detaching operation without danger of loss of the extended strip section within the case and which might make it necessary to disassemble the case to retrieve the free end.

Another object is to design a very simple, readily coilable, adjustable stop means on the free end section of the wind-up device, which stop is windable with the tape without producing objectionable bulges or humps, and which can be very easily and economically mounted.

To the accomplishment of the foregoing and related ends, said invention then consists of the means hereinafter described and particularly pointed out in the claims, the annexed drawing and following description setting forth in detail, certain means and one mode of carrying out the invention, such disclosed means and mode illustrating, however, but one of the various ways in which the principle of the invention may be used.

In the drawing:

Fig. 1 is a plan view of a conventional case and tape measure showing the end of the wind-up device extended, the tape coupled thereto, and the stop means swung to hold the strip in its extended position, a portion of the casing being broken away to show the spring-powered wind-up strip.

Fig. 2 is a view similar to Fig. 1 showing the strip extended, the solid lines showing the stop swung to position to permit rewinding, and the broken lines showing it in position as in Fig. 1.

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Fig. 3 is a fragmentary, edge elevational view showing the stop in position as indicated in solid lines in Fig. 2 and ready for coiling, the broken lines showing the bowing of the strip when attaching and/or detaching the tape measure.

Fig. 4 is a side elevational view of the tape measure.

Fig. 5 is a view similar to Fig. 1 and showing an alternate construction.

Fig. 6 is also a view similar to Fig. 1 and showing still another modification.

In measuring tapes of the class described, there is provided a convenient case 10 which can be formed in any desired manner; it has the usual tape entrance 11 which is of sufficient width to accommodate and guide the tape 12, and the strip 13 as they are coiled and uncoiled, said strip 13 being connected to a tensioning means which can be a conventional drum or spindle D such as used in measuring tapes at present on the market.

The inner end of the tensioned strip 13 is, of course, anchored to the drum or spindle F, and the opposite end is free for detachable coupling to the inner end section of the tape 12 and in a manner to be hereinafter described, and while the instant invention is directed broadly to the stop means for holding the spring in extended position, I shall, for the purpose of clarification, also show and describe the coupling means which forms the subject matter of an application for Demountable Measuring Tapes, Eugene J. Witchger, inventor, and filed December 15, 1949, Serial No. 133,136, now abandoned.

As illustrated in the accompanying drawing, the end section of the strip 13 is provided with a pair of longitudinally spaced rivets 14 as shown, the heads 15 of said rivets projecting a predetermined distance above the face of the strip to provide a shank of sufficient length to accommodate the tape measure when placed in facial contact with the strip.

Spaced-apart apertures A are provided in the inner end section of the tape 12 as shown and the enlarged section 16 of each aperture is of a size to permit the head 15 of the rivet to pass therethrough, while the restricted section 17 of the aperture is of a width to accommodate the shank of the rivet, so that when the tape and strip are placed in superimposed relation with the heads 15 of the rivets inserted through the apertures A, they can be securely coupled together.

A rotatable stop member S is provided on the free end section of the strip 13 at a point spaced inwardly from the coupling rivets, and comprises

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a preferably rectangular shaped stop 18 pivotally secured to one face of the tensioned strip 13 by means of a rivet 19, this stop being formed of resilient, readily coilable material and is of a length greater than the width of the strip and of sufficient length to span the tape measure entrance, so that when swung to position shown in solid lines in Fig. 1 of the drawing, it spans the side walls of said tape entrance and prevents the strip being drawn, by tensioning means, into the case, and then by rotating the stop to position shown in solid lines in Figs. 2 and 3 of the drawing, the strip and the stop are freely windable on the drum or spindle.

As a matter of convenience, I also provide an opening 20 adjacent the stop S, and if desired, a matchstick or other small peg (not shown) may be inserted in said opening to bear against the edge of the tape entrance and prevent winding of said strip until the peg is removed.

When it is desired to detach a measuring tape from the strip, the tape 12 is first uncoiled until the outer end section of the tensioned strip 13 is withdrawn from the case to permit the stop S to be swung crosswise and span the tape entrance, all as shown in Fig. 1 of the drawing. The operator then grasps the strip with one hand and the tape with the other, forcing them endwise with relation to each other, so that the section 21 is bowed, thus shortening the distance between the rivets 14 and bringing one rivet head into register with the enlarged area 16 of the interlocking aperture A so that it can be readily uncoupled.

To attach, the above operation is merely reversed, and when connected, the tape and the tensioned strip will lie in intimate facial contact and be securely coupled together; the stop S is then swung parallel with the strip and the strip and tape can be coiled in the usual manner.

In Fig. 5 of the drawing I have shown an alternate construction in which a stop 22 is pivotally secured to the strip 13 by means of the rivet 19, the outer end of the stop being forked as shown at 23 so that when swung to position shown in solid lines in Fig. 5 of the drawing, the forked end engages one wall of the tape entrance 11 and prevents the strip being drawn into the case. This stop is of course windable with the strip when in position shown in broken lines in Fig. 5.

In Fig. 6 of the drawing I have shown still another modification in which a substantially T-shaped stop member 24 is pivotally secured to the strip 13 by means of the rivet 19, the head of the T being shaped to form opposed hooks 25, one of said hooks engaging a wall of the tape entrance to prevent it being drawn into the case, and here, too, the stop is windable with the strip and in the same manner.

From the foregoing description, it will be obvious that I have perfected a very simple, practical and economical stop for effectively holding the tensioned strip in extended position and facilitate coupling to and/or uncoupling of the tape measure from the strip.

What I claim is:

1. In a measuring tape construction, a case having a tape entrance of predetermined width, a spring-powered wind-up means in said case, a strip anchored to said wind-up means provided with coupling means adjacent its free end for releasable coupling to a flexible measuring tape, said strip being of substantially the same width and thickness as the measuring tape, and a flex-

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ible, flat stop of greater length and less width than the width of the tape entrance pivotally mounted on the strip at a point spaced inwardly from said coupling means, said stop being releasably engageable with the tape entrance to prevent winding of said tape when said stop is swung to engaged position, and lying parallel with said tape when in disengaged position so as to be readily windable through said tape entrance.

2. In a tape measure construction including a case having a tape entrance of predetermined size, a spring-powered wind-up device therein and including a windable, tensioned strip, a flexible measuring tape normally coiled on said wind-up device and strip, said strip being of substantially the same width and thickness as the measuring tape, coupling means on the end sections of the strip and tape respectively for releasably securing said tape to said strip, a rotatable, flexible stop member of greater length and less width than the width of the tape mounted on said strip at a point spaced inwardly from the coupling means and adapted in one position to span the tape entrance and prevent the free end from being drawn inwardly through said entrance, and in another position to lie parallel to and in facial contact with said strip to be readily windable therewith.

3. In a tape measure construction of the character described comprising a case having a tape entrance of predetermined size, a spring-powered wind-up device within said case and a coilable strip anchored thereto with its free end readily passable through said tape entrance, a flexible measuring tape coupled to the free end of said coilable strip and windable thereon, said coilable strip being of substantially the same width and thickness as the measuring tape, the new feature which comprises an elongated stop member of greater length and less width than the width of the tape formed of readily flexible, coilable material rotatably mounted on said strip at a point spaced inwardly from the coupling means, and adapted when swung transversely of the strip to engage the tape entrance and hold said strip in extended position, said stop being readily windable with the strip and tape when swung parallel with said strip.

4. The combination as defined in claim 1 in which an end portion of the stop is notched to engage the edge wall of the tape entrance and prevent the strip from entering the tape entrance when the stop is swung to engaged position.

5. The combination defined in claim 1 in which the stop is T-shaped and the end portions of the head of the T-shaped stop are curved inwardly to hook the edge wall of the tape entrance and prevent the strip, when the stop is swung to engaged position, from entering.

6. In a tape measure construction including a case having a tape entrance of restricted, predetermined size, a flexible, spring-tensioned measuring tape coiled in said case having a free end adapted to extend out said entrance, and means for preventing the tape from being drawn into said casing when the tape is in extended position, comprising a flexible, flat stop member of greater length and less width than the width of the tape entrance pivotally mounted thereon and rotatable from a position in which it lies parallel with the tape and is readily windable therewith through said entrance to a position in which it is disposed substantially cross-wise of the tape and engages the edge of the tape entrance to prevent the entry of the tape.

7. In a tape measure construction including a case having a tape entrance of restricted, predetermined size, a flexible, spring-tensioned measuring tape coiled in said case having a free end adapted to extend out said entrance, and means for preventing the tape from being drawn into said casing when the tape is in extended position, comprising a flexible, flat stop member of less width than the width of the tape entrance pivotally mounted thereon, said stop member, when rotated from a position in which it lies parallel with the tape and is readily windable therewith through said entrance to a position in which it is disposed substantially crosswise of said tape, being of a length from the pivotal point to an outer end thereof to extend beyond the edge of the tape and engage the edge of the tape entrance to prevent the entry of the tape.

JOSEPH L. CLARK.

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