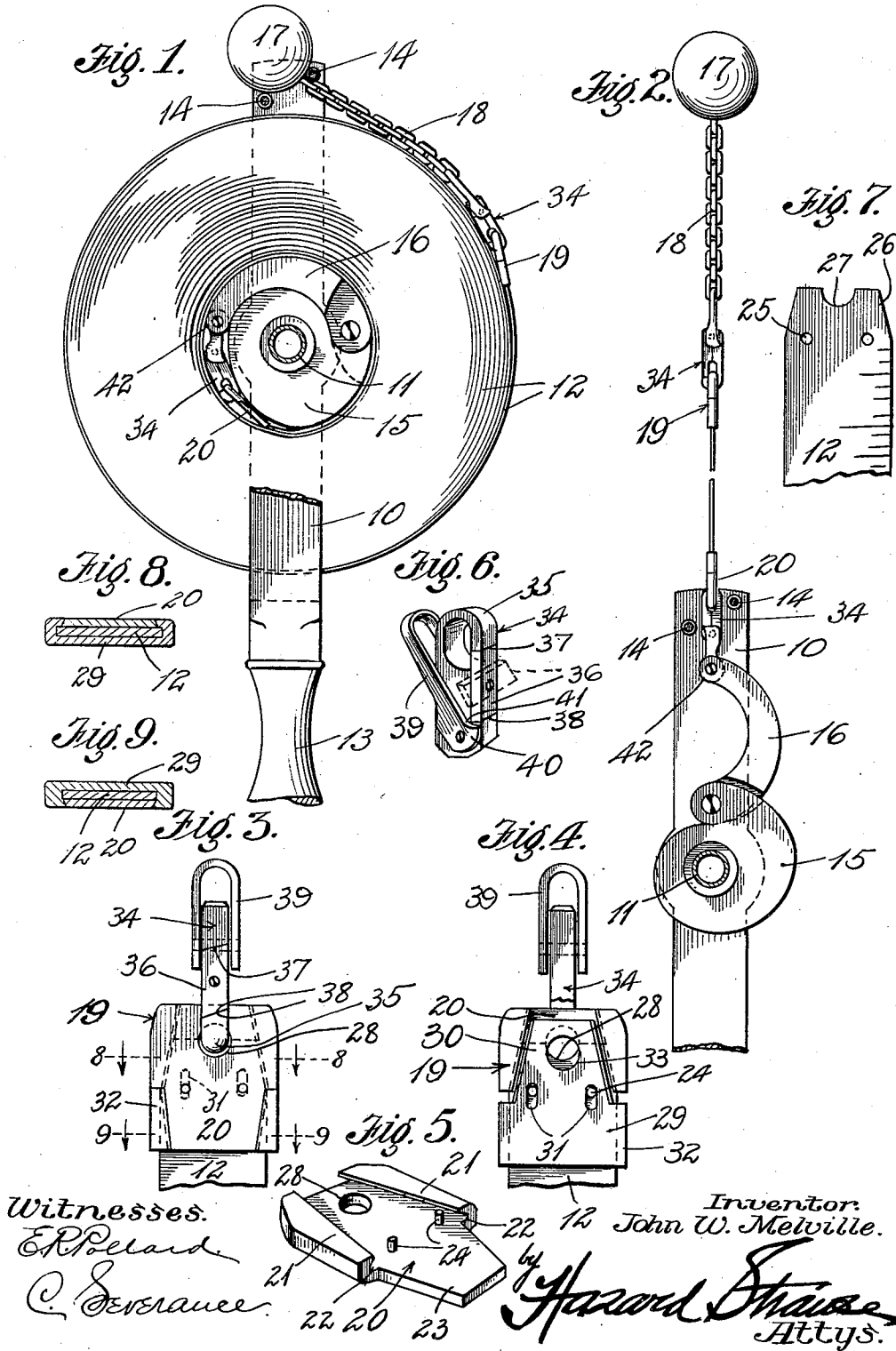


J. W. MELVILLE.
MEASURING TAPE.
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UNITED STATES PATENT OFFICE.

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MEASURING-TAPE.

1,023,863.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN W. MELVILLE, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Measuring-Tapes, of which the following is a specification.

This invention relates to improvements in measuring instruments and has particular reference to tape measures or lines, and especially that class of tape measures that are employed by surveyors.

It is an object of the invention to provide a tape measuring device in which the ends of the tape are adjustably and readily secured to the casing or framing which holds the tape line, and which permits of its being paid out for use or wound up for convenience in carrying.

It is also an object of the invention to secure the ends of the tape and particularly a metallic tape line so that in the event of the tape becoming broken, the end securing portions may be easily and quickly applied to the tape again and without the use of a special means or implements.

In the drawing forming a part of this specification, Figure 1 is a side elevation of a tape line mechanism, a portion of the framing thereof being broken away. Fig. 2 is a view partially in section and partially in elevation of the tape line mechanism showing the tape extended or unwound, the metal portions of the tape being broken away. Fig. 3 is a detail view in elevation of one of the end securing means employed for securing the tape at either end thereof, the parts being in their locked or fastened position. Fig. 4 is a similar view but showing the plates of the securing means slipped partially apart for disconnecting the tape. Fig. 5 is a detail perspective view of one of the plates of the tape and securing means. Fig. 6 is a detail perspective view of one of the adjustable hooks used in connection with the tape and securing means. Fig. 7 is a detail fragmentary elevation of the end of the tape proper for securing it to the securing means. Fig. 8 is a transverse sectional view taken upon the line 8—8 of Fig. 3. Fig. 9 is a detail transverse sectional view taken upon the line 9—9 of Fig. 3.

The parts of the invention will now be more fully described, reference being had to the accompanying drawing in which—

10 indicates a carrying frame, 11 a trans-

verse shaft mounted therein and 12 a tape line or measure, preferably of metal.

The frame 10 is usually provided with a carrying handle as 13 at one end while at the other end thereof a bifurcated portion preferably has its arms connected by one or more standards or studs 14. The inner end of the tape line is connected with a revolvable head 15 journaled upon the shaft 11 and having a projecting portion to which is pivotally secured a curved arm 16. The parts are so arranged that the curved part 16 will fold smoothly around the outer edge of the head 15, in winding in the tape and the locking means for securing the inner end of the tape will also fold smoothly against the said head as shown in Fig. 1, so as to make an approximately cylindrical center upon which the tape is wound. The tape when unwound usually passes out through a space formed between two or more of the studs as 14 and the outer end is generally provided with an enlarged portion or ball as 17 which is connected by means of a chain or other flexible connection as 18 with a locking device 19 secured upon the end of the tape. A similar locking device as 20 secures the inner end of the tape, to the end of the curved arm 16. The construction of the said locking device is important as it enables the tape to be mended in the field when it becomes broken through accident or any other cause. The locking device at each end of the tape is the same in structure so that description of one will apply to both. This locking or securing device comprises end plates as 20 Fig. 5 which are formed upon one of their faces with overhanging flanges 21 having a dove-tailed recess 22 within them. The said flanges 21 are preferably made converging from their inner ends toward their outer ends. The inner ends of the plates 20 are also preferably tapered as indicated at 23. Tape securing studs as 24 project from the surface of the said plates 20 and are adapted to engaging holes 25 formed in the ends of the tape. The ends of the tape are also preferably beveled slightly as at 26 to fit within the flanges 21 and the said ends of the tape may also be notched as at 27 to accommodate the connecting hook portions of the device.

The plates 20 are provided with apertures at 28 opposite the notches 27 of the tape for receiving the locking hooks. Coöperating with the plates 20 at each end of the tape

are plates that slide thereon as 29, which have tapering extensions 30 formed thereon with beveled outer edges adapted to fit under the dovetailed or beveled edges of the flanges 21 as clearly shown in Fig. 4. To permit of said beveled portions being inserted under the flanges 21, the slides 29 are adapted to have a slight longitudinal movement when the locking hooks are not in place, the said slides having elongated slits 31 formed therein which engage the studs 24 of the plates 20. Upon the inner face of the plates 29, overhanging flanges 32 are formed, which are tapered at their inner edges to receive the tapered portions 23 of the plates 20. The edges of said flanges 32 are also undercut or beveled to fit upon the beveled edges of the projections on 20. The slides 29 are first slipped upon the end of the tape, the slots being placed over the apertures 25 and then the plate 20 is placed thereon so that the holes 25 engage the studs 24, the slide 29 being at the inner end of its movement. The slide 29 is then moved inwardly to the extent of the slots 31 so as to bring the tapered end thereof with its beveled edges beneath the beveled overhanging flanges 21 of the plate 20. In this position apertures 33 formed in the slides 29 will coincide with the apertures 28 of the plate 20 and the locking hook 34 can then be inserted through said apertures for locking the slides 29 and the plates 20 together.

The locking hook 34 comprises a body portion having an open hook at one end as at 35 and a turn button 36 made to fit snugly in one side of the hook and having beveled end portions at 37 and 38 so that the said turn button can be slid into and out of place for locking the hook in the apertures 28 and 33.

A locking clevis 39 is pivoted upon the body portion of the hook and is provided with a projecting flange at each end as at 40 adapted to overhang the ends of the turn button 36 so as to lock the said button against turning. The said clevises are cut away on one side as at 41 so that when the clevis is folded backwardly upon the hook as shown in Fig. 6 the button may be turned for disconnecting the hook from the plates 20 and 39. The clevis 39 normally occupies the position straightened out with respect to the hook as shown in Figs. 1, 2 and 3 and 4 so that the button 36 cannot be turned accidentally or otherwise. The clevises 39 are connected with the end chain 18 at one end of the tape and at the other end of said tape the said clevis may be provided with an eye or enlarged head as 42 by which it may be pivotally connected with the end of the arm 16.

The device is especially useful when the tape becomes broken in the field as frequently happens and the said tape may be

readily mended without waiting to reach some place where tools may be obtained. It is only necessary to provide the broken end of the tape with apertures such as 25 and preferably slightly bevel the ends of the tape with a file or other means when the clamping plates 20 and 39 may be applied thereto and the tape may again be used. The holes through the thin steel of the tape can be made by a knife or any other implement that may be at hand in the field.

In winding up the tape the arm 16 and the inner hook 20 will fold smoothly around the heads 15 after which the tape can be wound thereon until the chain with the limiting ball 16 has been drawn against the end studs 14.

What I claim is:—

1. A tape securing clamp, comprising a plate having means for engaging the tape, a locking slide adapted to hold the tape to said plate and means engaging both said slide and said plate for preventing the slide from moving with respect to said plate when the tape is pulled upon.

2. A detachable tape clamping fastener comprising a plate having studs for engaging apertures in a tape line, the said plate being provided with overhanging flanges and a slide adapted to engage said overhanging flanges for holding the tape upon said studs.

3. A tape end securing means comprising a plate having studs for engaging apertures in the end of a tape, said plate having overhanging beveled flanges, tapering from one end toward the other with respect to each other, a locking slide having tape engaging flanges and a tapered portion for engaging the overhanging flanges of the first plate, and means for locking the plates against longitudinal movement with respect to each other.

4. A tape end securing means comprising reciprocating plates having tape engaging means, and overhanging flanges engaging each other, the said plates having apertures adapted to coincide with each other when the plates are in their locked position, and a locking hook engaging said apertures for holding the plates in said position.

5. A tape end securing means comprising apertured tape receiving plates, one of which is provided with tape securing studs, while the other is formed with slots for engaging said studs and a locking hook adapted to pass through said plates and prevent their becoming disengaged.

6. A tape end securing means comprising apertured plates having dove-tailed engaging flanges and tongues, adapted to slide upon each other, for locking or unlocking the said plates upon the tape, a hook mechanism comprising a hook proper adapted to pass through the plates, a button for lock-

ing the hook in place and a movable member on said hook normally adapted to prevent the swinging of the button.

7. A tape securing means comprising interlocking plates, adapted to grip the end of a tape, the said plates having registering apertures when they are in their locked position, a hook for locking said plates comprising an open hook portion, a pivoted detent for closing the hook, a pivoted clevis having a cut away portion upon the side for permitting the unlocking of the pivoted de-

tent when the clevis is folded back upon the hook, the said clevis having overhanging parts normally locking said detent against movement and means for connecting the clevis with a tape line mechanism.

In witness that I claim the foregoing I have hereunto subscribed my name this 17th day of February, 1911.

JOHN W. MELVILLE.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."