Dec. 6, 1966 C. L. TODD 3,289,306

ONE MAN TAPE REEL CONSTRUCTION

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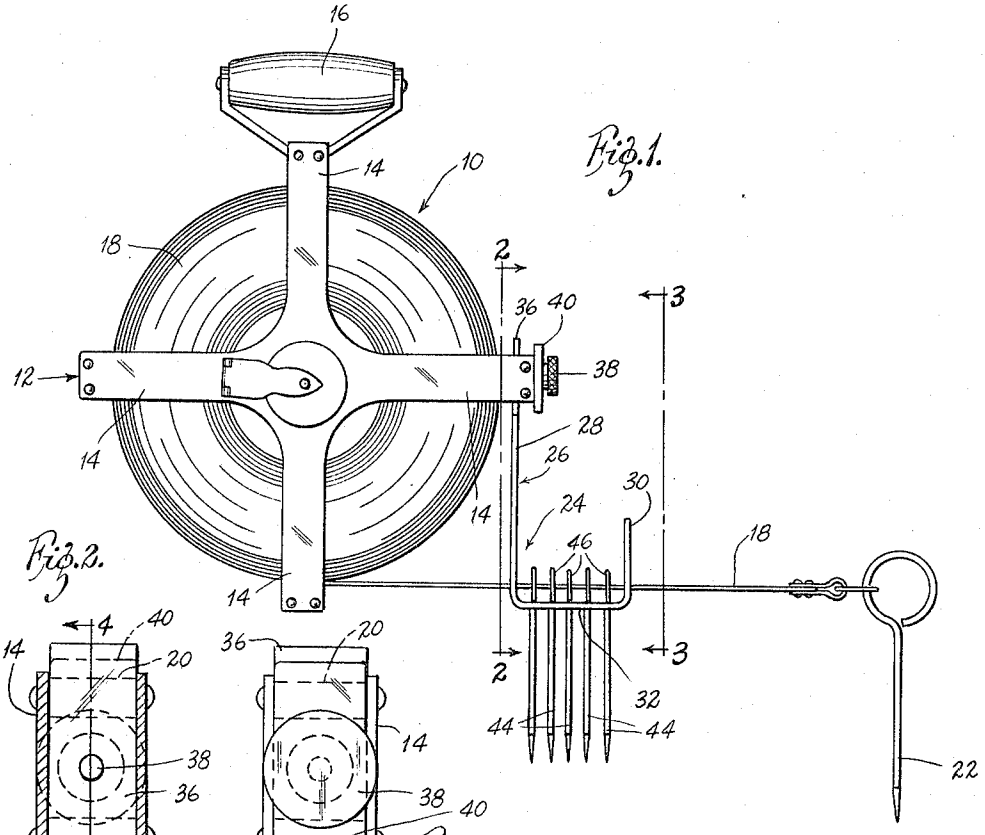


Fig. 1.

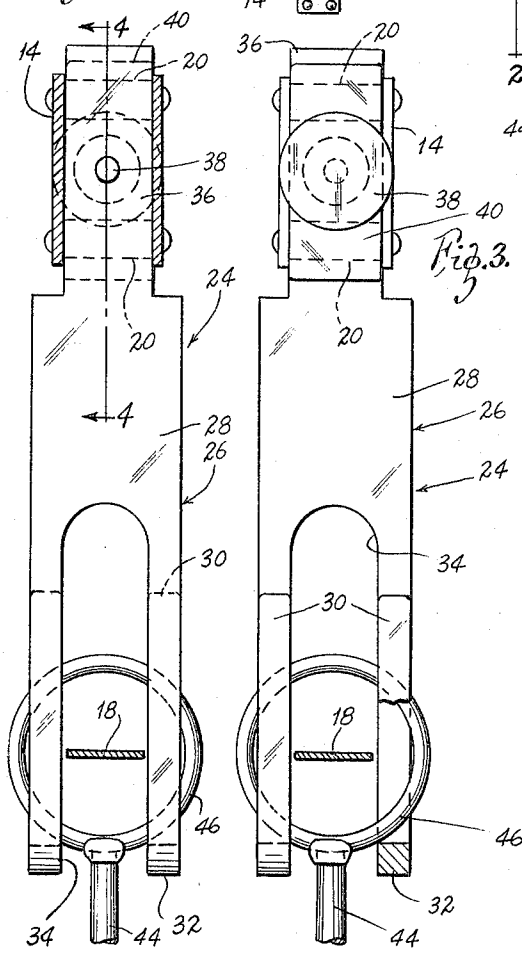


Fig. 2.

Fig. 3.

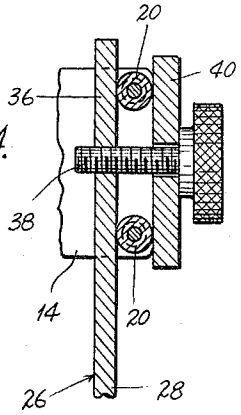


Fig. 4.

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The present invention relates generally to the measuring art, and more particularly to a method of measuring and to a novel attachment for tape reels, such as those used in surveying, measuring of spaced items as telephone poles, and the like.

There has long existed the need for a tape reel measuring device and method which can be readily employed with ease and reasonable accuracy by one man in marking off telephone pole emplacements, and the like, without rewinding of the tape for each measurement. With the continuously rising cost of labor, a two-man crew carrying out such work is expensive. The same deficiency exists in other areas involving measurement along the ground and elsewhere, and the marking of a series of selected points.

Therefore, an object of the present invention is to provide a novel attachment for tape reels, or the like, and the novel structure as modified, which fulfill the aforesaid long existing need.

In brief, the present novel attachment includes a bracket, means for attaching the bracket to a tape reel, and a plurality of ground pins which are supported by the bracket in adjacent relationship. The tape extends through the eyes of the ground pins and portions of the bracket to dispose the anchor pin in position outwardly of the bracket. The novel method of one-man measuring includes the anchoring of the anchor pin and the successive placing in the ground of the extra pins, followed in each instance by pulling the previously placed anchor or extra pin from the ground and drawing the tape and pin or pins towards the user.

Hence, another object is to provide a novel attachment for a tape reel and the combination thereof which render one-man measurement of points along the ground easy to accomplish with reasonable accuracy and without rewinding of the tape for each measurement.

Another object is to provide a novel attachment for a tape reel which can be readily applied to existing tape reels without modification thereof to convert the same into a novel one-man measuring unit.

Another object is to provide a novel attachment for a tape reel to render the reel usable by one man in measuring points based along the ground without rewinding for each measurement, which is of sturdy construction, readily used by anyone with minimum instruction, and which encourages use of the tape for accuracy rather than pacing by an individual, a method often employed.

The foregoing and other objects and advantages are apparent from the following description taken with the accompanying drawing, in which:

FIGURE 1 is a side elevational view of a standard tape reel with the present novel attachment mounted thereon for operative use providing a novel combination;

FIGURE 2 is on enlarged, vertical transverse cross-sectional view taken on substantially the line 2—2 of FIGURE 1;

FIGURE 3 is an enlarged, vertical transverse cross-sectional view taken on substantially the line 3—3 of FIGURE 1; and

FIGURE 4 is a vertical, longitudinal cross-sectional view taken on substantially the line 4—4 of FIGURE 2.

Referring to the drawing more particularly by reference numerals, 10 indicates generally a standard tape reel including a tape supporting reel 12 having four equispaced arms 14 at each side. A handle 16 is secured to the

ends of one pair of arms 14. A tape 18 is mounted on the reel 12 in the usual manner and is retained against unwinding or expanding by sleeves 20 mounted at the free ends of the arms 14. The usual anchor pin 22 is connected to the free end of the tape 18.

An exemplification of the present novel attachment is indicated by the reference numeral 24 and includes a bracket 26 preferably of the J configuration shown clearly in FIGURE 1. The bracket 26 includes a long arm 28, a short arm 30, and a bight portion 32. The bracket 26 includes a longitudinal opening 34 which extends partway up the leg 28 and throughout the full extent of the bight portion 32 and the leg 30, as is clear from the drawing. The long leg 28 includes a reduced top portion 36 which extends between two opposed arms 14 in adjacent relationship with the two sleeves 20 and is maintained in mounted position by a screw 38 having a large knurled head, the screw 38 extending through a small block member 40, which engages the sleeves 20, and threadedly engages a threaded opening in the reduced portion 36, as is clear from FIGURES 1 and 4. Obviously, the attachment 26 may be mounted upon or removed from the reel 12 through manipulation of the screw 38. A plurality of extra pins 44, five being shown, are mounted upon the bight portion 32, extending downwardly through the opening 34. Each extra pin 44 includes an eye portion 46. It will be noted that the tape 18 threads the eye portions 46 and the opening 34 in the long leg 28 and the short leg 30 to dispose the anchor pin 22 in the position as clearly shown in FIGURE 1.

The preferred method of employing the attachment 26 in conjunction with the tape 18 is simple, direct and reasonably accurate. The user places the anchor pin 22 in the ground at an initial starting point A. Assuming that the tape 18 is at least one hundred feet and that the items to be emplaced are to be one hundred feet apart, the user moves in the direction of the next point, which is B, unreeling the tape 18 as he walks. Upon reaching point B, the first extra pin 44 nearest the short leg 30 is lifted from the position of FIGURE 1 and inserted into the ground at point B. A stake may be driven. Thereupon, the tape 18 is tugged by the user to pull the anchor pin 22 from the ground. Thereafter, the user moves forward toward point C, pulling the tape 18 through the anchored first extra pin 44 until the anchor pin 22 engages the same. Those familiar with the use of tape reels will step off the distance between points B and C, so that as C is approached, the user will take reasonable care to see that the first extra pin 44 is not abruptly jerked from the ground. At point C, the aforestated process is repeated, the second extra pin 44 being inserted in the ground at point C, and a marker placed, after which the user pulls the first extra pin 44 from the ground. The user then draws the tape 18 through the second extra pin 44 in walking towards point D. As point D is approached, the aforesaid process or cycle is repeated. This use of the attachment 26 continues until all extra pins 44 are employed in the process, or as many are employed as required by the particular job. It is clear, of course, that more or less than five extra pins 44 can be employed.

It is manifest that there have been provided both a novel attachment and a novel method of one-man ground measurement which fulfill the objects and advantages sought therefor.

It is to be understood that the foregoing description and the accompanying drawing have been given by way of illustration and example. It is also to be understood that changes in form of the several parts, substitution of equivalent elements or steps, and rearrangement of parts or steps, which will be readily apparent to one skilled in

the art, are contemplated as within the scope of the present invention, which is limited only by the claims which follow.

What is claimed is:

1. In combination, a tape reel unit including a reel, a measuring tape, and an anchor pin connected to the free end of said tape, and an attachment mounted on said reel facilitating one-man use of said tape including a bracket and point marking items, each point marking item having means for threadedly receiving said tape, said tape being threaded through said threadable means disposing said point marking means between said reel and said anchor pin.

2. The combination of claim 1 in which said point marking items are pins for insertion in the ground and the like, said pins being supported for successive use.

3. In combination, an attachment for tape reels facilitating one-man use of the tape for measuring successive substantial increments on the ground without winding the tape on the reel at the end of each increment, comprising bracket means for mounting said attachment on a tape reel, and a plurality of point marking means supported on said bracket means for operative successive use with a tape in measuring successive points along the ground as aforesaid, said bracket means including an open ended longitudinal slot receiving said point marking means in positions for successive removal from the slot in cooperative captive use with a tape.

4. The combination of claim 3 in which said point marking means are pins, each pin having means through which a tape may be threaded for free relative movement and for successive use therewith.

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