March 4, 1924. 1,485,634

N. H. SHILLMAN

CASE FOR TAPE MEASURES

Filed June 18, 1923

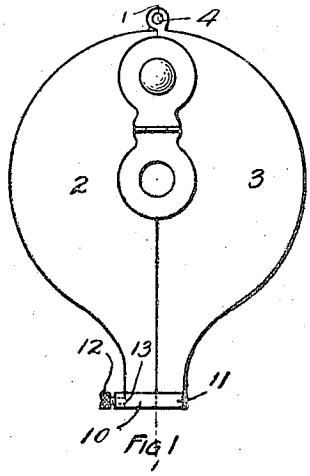


FIG. 1

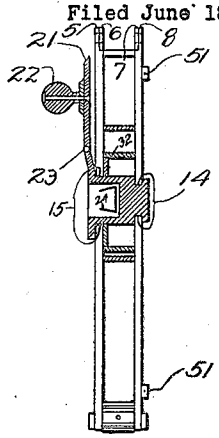


FIG. 2

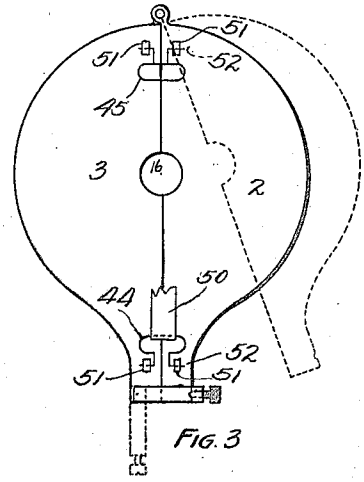


FIG. 3

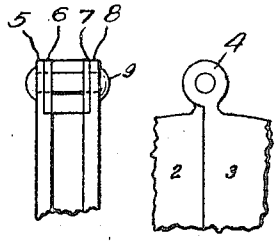


FIG. 4

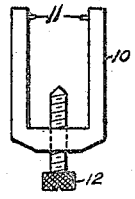


FIG. 5

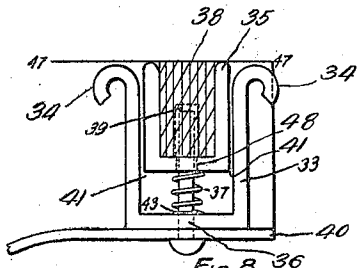


FIG. 8

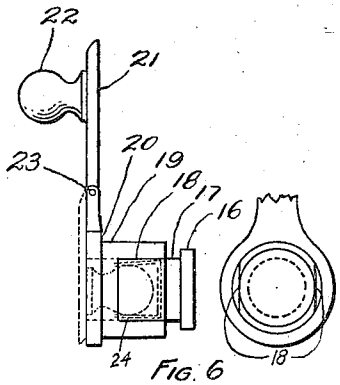


FIG. 6

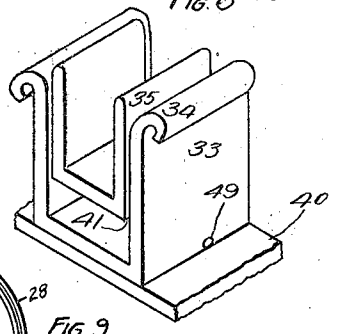


FIG. 9

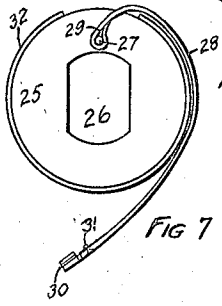


FIG 7

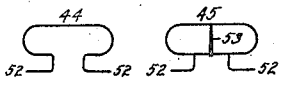


FIG. 10

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UNITED STATES PATENT OFFICE.

NATHAN H. SHILLMAN, OF BALTIMORE, MARYLAND.

CASE FOR TAPE MEASURES.

Application filed June 18, 1923. Serial No. 646,172.

To all whom it may concern:

Be it known that I, NATHAN H. SHILLMAN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Cases for Tape Measures, of which the following is a specification.

This invention relates to the class of tape measures having a thin steel graduated tape wound on a drum, which is mounted on a rotary crank element, inclosed in a suitable frame or casing, and to which is attached a plumb bob or other weight, and is used for sounding oil tanks, etc.

In sounding oil tanks or tanks containing similar liquids, there is necessarily left a film of the oil on the tape line, which has to be wiped off with a rag or waste, as the tape is drawn in a few feet at a time. This is not only cumbersome and unsatisfactory from the standpoint of cleanliness, but it frequently results in broken tapes. The usual device used for this purpose is a steel tape, wound on a rotary element, secured in an open frame.

The object of this invention is to provide a closed casing which can be kept clean, with means for easily cleaning the tape proper, and with provision for readily removing and replacing the tape or any part of the device if ever broken; and it consists of an improved construction of the casing and crank element, embodying certain novel features as hereinafter pointed out.

A characteristic feature of the device is that the casing can readily be opened or closed, and the component parts easily taken apart and then reassembled. No tools whatever are necessary to accomplish this. The casing is constructed in two halves, substantially duplicates, which are closed diametrically to form the whole, this being attained by hinging the two halves at the top, and by a yoke and set screw locking device at the bottom. The casing has a central opening, forming two bearings of unequal diameters, into which the crank element, carrying the winding drum, is laid.

A second feature is that the crank body is so shaped that it forms the shaft which carries and winds the drum, the journals that work in the casing bearings, and, being flanged at both ends, covers these openings when the casing is closed.

A third feature is that the lower part of the casing through which the tape passes is neck shaped, and it houses a stuffing box which automatically cleans the tape as it passes through it, and which also acts as a brake.

In the drawings Figure 1 represents the front side of the case showing the hinge at the top, the yoke and set screw locking device at the bottom, and the crank arm open for use. Figure 3 shows the opposite side, with hand strap arrangement, showing the case partly open in dotted lines, with locking device swinging freely. Figure 2 is a vertical section taken on line 1—1 of Figure 1, showing crank element and drum in position. Figure 4 is an enlarged view of hinges by which the two halves of case are joined at top. Figure 5 is an enlarged view of yoke and set screw locking device. Figure 6 represents the crank element on which the winding drum is mounted, and which fits into the central openings or bearings of casing. Figure 7 represents the winding drum and tongue to which the tape is attached, and around which it is wound. Figure 8 shows an enlarged view of one of the stuffing box elements which automatically cleans the tape as it passes through it, and Figure 9 is an isometric view of same. Figure 10 shows the hand strap buckles.

2 and 3 represent the two halves of the casing. They are of the same size and shape. Each has two sides, joined together by an end piece of the proper width and form. At the top is hinge 4, which joins the two halves together. It is formed by ears 5, 6, 7 and 8—each an extension, and half the thickness of the metal sides—and the pintle 9. At the bottom is yoke 10, which swings freely from 3 through pins 11. It closes over 3 and 2 and locks the two together by means of the knurl headed set screw 12 working into depression 13.

The crank element has the small journal 17 and the large journal 19, which fit into bearings 14 and 15, respectively, formed by the central openings in the casing (see Figure 2). The crank body is flattened on two opposite sides at 18 (Figure 6), forming a shaft, on which is mounted the winding drum 25, which has the conforming opening 26. 16 and 20 are shoulders turned at the ends of the crank body to cover the openings 14 and 15, respectively, when the casing is closed. The journal 17 and the

corresponding bearing 14 are made smaller than 19 and 15 for the purpose of allowing this end of the crank body to pass through the opening 26 of the winding drum. When this drum is mounted on 18 it rests against the shoulder formed by the larger journal 19, and crank and drum, together with the tongue and tape wound around it, are slipped into the open casing, which may then be closed and locked in position. The crank arm 21 can be folded over at the hinge 23 when not used, and the handle 22 seats in the hollow of the crank body, where it is held in place by spring 24.

The drum has the pin 27, to which is attached the tongue 28 by means of loop 29, 29 slipping over 27. The tape is attached to the tongue through slot 30 and pin 31, which projects through a corresponding hole in the tape. Tongue and tape are both wound around the flat periphery 32 of the drum, when the crank element is rotated.

The stuffing box is constructed of two substantially duplicate elements. One element is housed in each half of the casing, at the edge of the neck (not shown). Each element consists of the outer three sided frame 33 (Figs. 8 and 9), the inner three sided frame 35, the riveted guide post 36, the helical spring 37, and the wiper 38. 33 is secured to the casing wall 40 by means of the riveted guide post 36, which has a shoulder at 43. Around the guide post is helical spring 37 of suitable tension. Over it and resting against the spring is frame 35, which has hole 48, slightly larger than 36, and which fits easily into frame 33. Into 35 is packed an asbestos or other suitable wiper, which is recessed as at 39 to receive the guide post 36 and to allow motion of 35 along the line of spring tension. When the tape is in use it passes along the line 47—47. The spring 37 keeps 35 and wiper 38 pressed out against it, and the element on the opposite side functions in the same way, thus cleaning the tape automatically. Oil or other foreign matter that may find its way down through 41 flows to outside of casing through limber hole 49. When not in use, the wipers, due to the spring tension, act as a brake on the tape, preventing its unwinding, which is often the cause of broken tapes, if the casing is struck against an outside object. 33 is turned over at 34, forming a guide for the tape at both ends of the stuffing box.

In order to obviate the dropping of the case when in use, and to secure a better hold of same, there is provided the leather strap 50 (shown in part in Figure 3), which fits around the hand as it grasps the casing. The lower end of strap is stitched on to buckle 44, while the upper end is adjustably secured to 45 by means of pin 53 passing through holes in strap. The casing has the ears 51, into which the ends 52 of the buckles are slipped when the casing is open, and in which they are held securely and swing freely when the casing is closed.

I claim as my invention:

1. A casing comprising two three-walled neck-shaped similar halves, closing diametrically to form the whole, having a hinge at top, a yoke and set screw locking device at the bottom, central openings forming two bearings of unequal diameters into which fits a crank element carrying a winding drum, tongue and tape, a stuffing box element housed in the necked end of each half of said casing, and an ear secured at top and bottom of each half along the long axis on one side of casing adapted to carry a hand strap adjustably secured to buckles carried in said ears.

2. A casing comprising two three-walled similar halves, closing diametrically to form the whole, the two joined at the top by a hinge formed from four ears which are extensions of the sides of said halves and half the thickness of same, and a pintle passing through said ears.

3. A casing comprising two three-walled similar halves closing diametrically to form the whole, the two being neck-shaped at the bottom and locked together by a yoke swinging from the sides of the one half and closing over the other half, and secured by means of a knurl headed set screw passing through the end of the yoke and against the wall of the casing.

4. A casing comprising two three-walled similar halves, closing diametrically to form the whole, having central openings forming two bearings of unequal diameters into which fits a crank body journalled to fit these bearings, said crank body flattened on two opposite sides to carry the winding drum, tongue and tape, and shouldered at both ends to close said openings when casing is closed and locked.

5. A casing comprising two three-walled similar halves closing diametrically to form the whole, the two being neck-shaped at the bottom and each neck housing a stuffing box element composed of a substantially U shaped frame secured to the end wall of the casing by a riveted guide post, a helical spring around said guide post, a second U shaped frame fitting over said guide post and into the first mentioned U frame, a wiper packed into the second mentioned frame and recessed to receive the guide post, the latter frame and its contained wiper being forced outwardly by said helical spring.

6. A casing comprising two three-walled similar halves, closing diametrically to form the whole, one side of said casing having an ear at top and bottom thereof near the edge of the long axis of each half, into which ears fit buckles when the casing is open, said buckles being held securely in place when

casing is locked, and carrying an adjustable strap, providing for a secure hold of the casing.

7. A casing comprising two three-walled neck-shaped similar halves, closing diametrically to form the whole, having a hinge at top, a yoke and set screw locking device at the bottom, central openings forming two bearings of unequal diameters into which fits a crank element carrying a winding drum, tongue and tape, a stuffing box element housed in the necked end of each half of said casing, and an adjustable leather strap held by buckles secured in ears in the side of said casing, the entire device being so constructed that it can be take entirely apart and re-assembled with the hands and without the use of any tools.

In testimony whereof, I affix my signature in the presence of two witnesses.

NATHAN H. SHILLMAN.

Witnesses:

GORDON M. DICKINSON,

H. H. STRAUB.