Oct. 25, 1927. 1,646,826

A. LANGSNER

MEASURING TAPE

Filed May 12, 1926

Fig. 1.

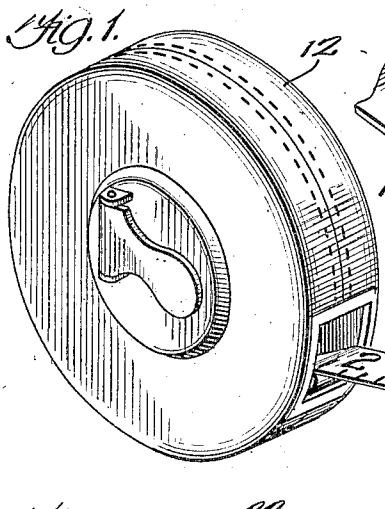


Fig. 2.

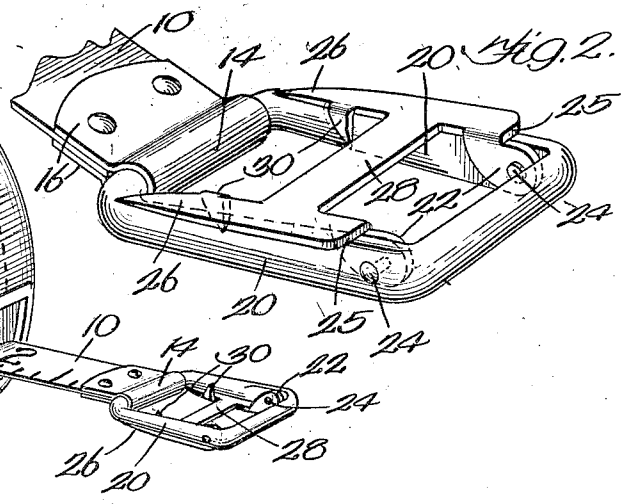


Fig. 5.

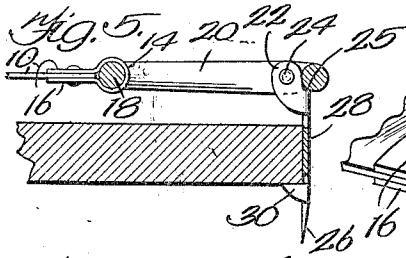


Fig. 3.

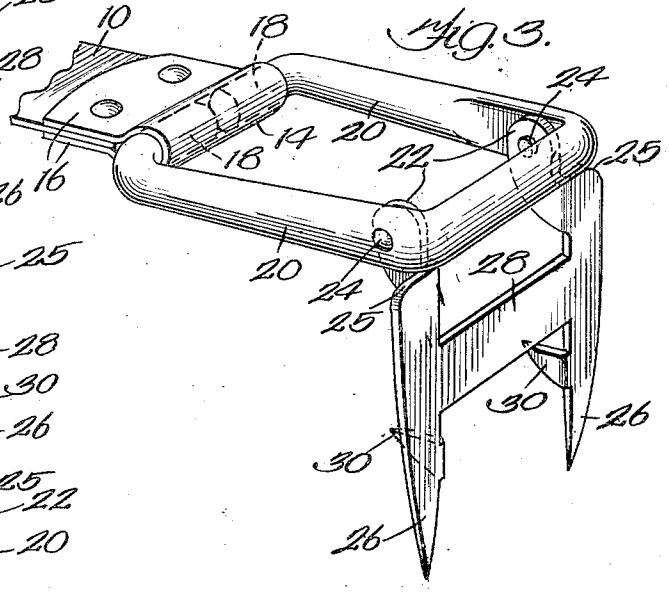


Fig. 6.

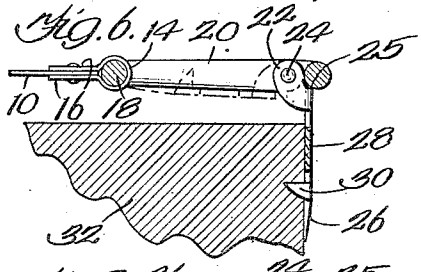


Fig. 7.

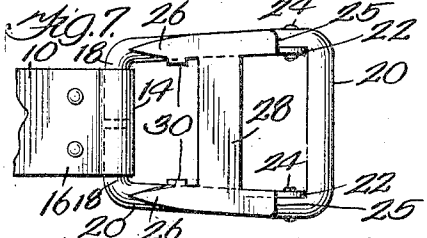


Fig. 4.

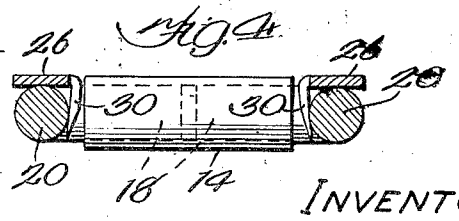
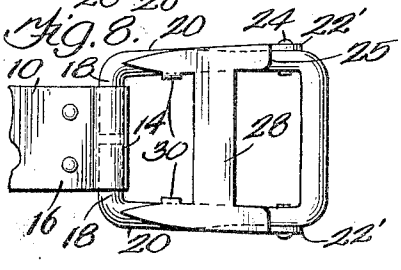


Fig. 8.



INVENTOR
ADOLPH LANGSNER
BY Cheever & Cox ATTYS.

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UNITED STATES PATENT OFFICE.

ADOLPH LANGSNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO EUGENE DIETZGEN CO., OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

MEASURING TAPE.

Application filed May 12, 1926. Serial No. 108,471.

My invention relates to tapes for the use of surveyors, mechanics, inspectors, and others, and is concerned more particularly with the terminal element usually referred to as the "ring". When two persons cooperate in using a tape no difficulty is experienced because one person can hold the end at the point where it should be while the other measures off the distance. But usually tapes are operated single-handed, and it then becomes important to provide means for holding the free end of the tape in place while the operator measures out the distance or passes to the other end of the object to be measured.

The general purpose of my invention is to provide an advantageous form of anchor or holding device for holding the free end of the tape in place while the operator moves to a distance to take the measurement. One of the specific and contributory objects of the invention is to provide an anchor which will take hold of a flat surface in the plane in which the measurement is to be taken. For example, in the case of a floor it is my purpose to provide two prongs which will stick into the floor so as to hold the tape-end anchored at the point where it is placed. Another object is to provide a construction especially adapted for driving the prongs into a wood floor, or the like. I accomplish this by forming shoulders on the prongs which will absorb the blow of a hammer or other striking object. Another object is to provide an anchor which will securely hold the end of the tape conterminous with the end of an object being measured. For example, where a board is to be measured, I have provided means for engaging the end of the board for holding the free end of the tape in place. The prongs are two in number so they will balance each other and keep the tape ring squarely in place. Also they are so constructed they may either be driven into the end of the board or will take under the board or under a metal plate and grip it and thus ensure that the ring will not ride up and over the end. Another object is to provide a construction such that the anchor may be folded or swung into the plane of the ring and when thus folded will hold itself in place. A further object is to provide a foldable anchor which when folded will not interfere with the ordinary use of the tape. This and other objects will become apparent as the description proceeds.

I obtain my objects by the mechanism illustrated in the accompanying drawings, in which

Figure 1 is a perspective view of the complete tape and its casing, the terminal ring being shown right side up.

Figure 2 is a perspective view drawn to an increased scale showing the ring bottom side up with the anchor in folded position.

Figure 3 is a perspective view of the terminal ring and anchor showing the ring right side up and the anchor in extended or operating position.

Figure 4 is a cross sectional view of the ring showing the anchor in folded position.

Figure 5 is a longitudinal sectional view of the ring showing the anchor extended and in operating position against the end of a board, metal plate or similar object. In this view the side prongs engage under the bottom of the board or plate.

Figure 6 is similar to Figure 5, but shows the side prongs entering into the end of a board.

Figure 7 is a bottom plan view of the parts shown in Figure 6, the anchor, however, being in folded position.

Figure 8 is a bottom plan view similar to Figure 7, but showing a modification in which the anchor is pivoted to the ring by ears that are located on the outside of the ring instead of on the inside thereof.

Like numerals denote like parts throughout the several views.

Referring first to the form shown in Figures 1 to 7, inclusive, the tape 10 which may be of steel or any other suitable material, is provided with a casing 12, in which it is stored when not in use. The tape proper and its casing are not intimately concerned with my present invention, and hence need not be described in detail.

At the end of the tape is a sleeve 14 having cheek plates 16 by which it is riveted or otherwise fastened to the end of the tape. This sleeve forms a pivotal bearing for the ends 18 of the terminal element 20, which, for convenience, I shall refer to as a "ring", but which, according to the illustrated design, is oblong or approximately rectangular in outline.

The anchor or holding member has a pair

of ears 22 which pass to the inside of the sides of the ring and are pivotally secured thereto by pins 24. The anchor has a pair of shoulders 25 which abut the end of the ring to hold the anchor at right angles to the plane of the ring when the anchor is acting. The anchor also has a pair of prongs 26 that are sharpened at the end and connected by a cross bar 28. Said cross bar holds the prongs in spaced relation and is located approximately midway between the ends of said prongs, thus imparting to the anchor a form somewhat similar to the letter H.

Extending inward from the prongs 26 are supplemental prongs 30 capable of engaging the end of a board or object along which the tape is to be laid. Except for the ears 22 and prong 30 the anchor or holding member lies chiefly in a plane, with the result that when in folded or closed position, as shown in Figures 2 and 4, for example, said anchor will lie flat against the sides of the ring. In the form shown the sides of the ring are approximately round in cross section, and the prongs 30 are spaced slightly farther apart than the normal inside measurements of the ring. The result is that when the anchor is being folded, the prongs 30, as they come into contact with the rounded surfaces of the ring, are wedged together slightly, thus setting up frictional engagement which holds the prongs sufficiently to enable the anchor to maintain its closed or folded position when not in use. The ring is also of slightly resilient metal so that the sides can yield outward slightly as the prongs come into engagement with the sides of the ring. Thus the anchor may be readily folded and unfolded but when in folded position is capable of maintaining itself in such position, and when in such position is out of the way and does not interfere with the ordinary use of the ring. Prongs 30 are not long enough to project above the top of the ring, and hence there is no danger of their becoming caught in anything when the anchor is folded.

In practice, if it is desired to measure a long wooden floor, for example, the tape may be anchored to the floor by moving the anchor to the open or extended position, as shown in Figure 3, and tapping the ring slightly to drive the prong 26 into the wood. As the end of the ring bears directly against the shoulders 25, the latter absorb the blow, this relieving the rivets 24 of any strain. This will hold the ring in place while the user moves away a distance to take the measurements. If it is desired to measure a piece of timber, as for example, the piece 32, shown in Figure 6, the anchor may be adjusted to the end of the piece in the manner illustrated, after which by tapping the prongs 30 they may be driven into the piece, thus bringing the plane of the anchor adjacent to the plane at the end of the piece, after which the measurement may be taken in the usual manner. If it is desired to measure a metal sheet, the anchor is adjusted as shown in Figure 5. The flat or horizontal upper edges of the side prongs 30 engage the under surface of the object and prevent the anchor from slipping up and off. Thus the anchor bears squarely against the end of the object and holds the tape correctly conterminate with the object. If the anchor is not to be used, it may be folded to closed position, and the ring be used in the usual manner. As the cross bar 28 is at a distance from the pivots 24 it will, when folded, be spaced from the outer end of the ring sufficiently to permit a nail or other holding device to be driven into the floor or other thing to be measured, this method sometimes being employed for holding the anchor ring in place. It will be noted that when such method is employed for holding the ring the anchor will not interfere.

While it is preferable to have the ears 22 pass to the inside of the side bars of the ring, this is not essential, for they may pass to the outside, as shown by the ears 22′, shown in Figure 8.

From the foregoing it will be evident that my device is simple in construction, and yet affords ready means by which the terminal ring may be held in place to enable an operator to use the tape without assistance. When the anchor is folded it occupies little space, and in no wise interferes with the ordinary operation of the device.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a measuring tape in combination with an open ring, an anchor formed of an integral flat piece of metal having a pointed end to be driven into an object and having spaced ears bent substantially at right angles to the plane of the anchor and pivotally connected to said ring to permit the anchor to lie in the plane of the ring, said anchor adjacent to the ears being formed with shoulders adapted to abut against the ring to limit the open position of the anchor to ninety degrees and to form impact receiving shoulders for relieving the pivotal connection of the shock of a blow on the anchor when the anchor is driven into an object.

2. In a measuring tape in combination with an open ring, an anchor formed of an integral flat piece of metal having a pointed end to be driven into an object and having spaced ears bent substantially at right angles to the plane of the anchor and pivotally connected to said ring to permit the anchor to lie in the plane of the ring, said anchor adjacent to the ears being formed with shoulders adapted to abut against the ring

to limit the open position of the anchor to ninety degrees and to form impact receiving shoulders for relieving the pivotal connection of the shock of a blow on the anchor when the anchor is driven into an object, and said anchor having an integral pointed portion bent at an angle thereto and formed with an upper edge lying at right angles to the adjacent flat face of the anchor for the purpose specified.

3. An anchor for terminal rings of measuring tapes, said anchor lying chiefly in a single plane and being in the general form of the letter H and having prongs extending at right angles to the plane for engaging the ends of objects to be measured, said anchor being pivoted to the sides of the ring and being capable of occupying a position either parallel or at right angles to the ring.

4. A device of the class described having a ring, and an anchor having a pair of ears pivoted to the sides of the ring, and having a pair of shoulders for abutting the ring to thereby hold the anchor in a plane substantially at right angles to the plane of the ring, said shoulders being arranged to engage the ring in the open position of the anchor and to receive the impact of a driving blow on the anchor when the anchor is driven into an object.

5. A measuring tape including a terminal ring fastened to the tape, an anchor pivoted to the ring to enable it to swing parallel to or at right angles to the ring, and prongs on the anchor for engaging the sides of the ring, said prongs and sides being relatively yieldable to thereby permit the prongs frictionally to engage the sides of the ring yieldingly to hold the anchor parallel to the ring when in folded position.

6. In a measuring tape, a terminal ring fastened to the end of the tape, and a pointed anchor pivoted to the outer portion of the ring to enable it to be swung parallel or at right angles to the ring, the anchor being H shaped whereby it leaves the end of the ring free of obstructions, one end of the anchor being pivoted to the outer end of the ring and having shoulders for supporting the outer end of the ring when the opposite end of the anchor is being driven into the surface of the object to be measured.

7. A measuring tape having a terminal ring approximately rectangular in outline and a sheet metal anchor having two ears yieldingly pressing against the sides of the ring, pivots for securing the ears to the sides of the ring, the anchor being approximately H shaped and having prongs projecting at the free end and extending in the plane of the anchor.

8. A measuring tape having a terminal ring, an anchor lying chiefly in a plane but having ears at right angles to such plane, the ears being pivoted to the sides of the ring whereby the anchor may stand at right angles to or in the plane of the ring and means on the anchor for frictionally engaging the sides of the ring when the anchor is folded for holding it in folded position.

9. A measuring tape having a terminal ring approximately rectangular in outline and a sheet metal anchor having two ears yieldingly pressing against the sides of the ring, pivots for securing the ears to the sides of the ring, the anchor being approximately H shaped and having prongs projecting at the free end and extending in the plane of the anchor, and also having supplemental prongs extending inward approximately at right angles to the plane of the anchor, said supplemental prongs passing to the inside of the ring when the anchor is closed.

10. In a measuring tape in combination with an open ring, an anchor formed of an integral flat piece of metal having two spaced apart pointed prongs adapted to be driven into an object, said anchor having at its opposite end spaced ears bent at an angle thereto and pivotally connected to said ring to permit the anchor to lie in the plane of the ring, said anchor and ears forming shoulders adapted to abut against the ring and to limit the open position of the anchor to ninety degrees and to provide impact receiving members for relieving the pivotal connections of shocks when the anchor is driven into an object, each prong having a laterally bent pointed prong, provided with an upper edge disposed at right angles to the flat face of the angle.

11. A measuring tape having a terminal ring, an anchor formed of an integral flat piece of metal having two spaced apart pointed prongs adapted to be driven into an object, said anchor having at its opposite end spaced ears bent at an angle thereto and pivotally connected to said ring to permit the anchor to lie in the plane of the ring, said anchor and ears forming shoulders adapted to abut against the ring and to limit the open position of the anchor to ninety degrees and to provide impact receiving members for relieving the pivotal connections of shocks when the anchor is driven into a member, each prong having a laterally bent pointed prong, provided with an upper edge disposed at right angles to the flat face of the angle, and said latter prongs having their pointed ends relatively resilient and disposed so as frictionally to engage and grip the adjacent walls of the ring when the anchor is closed to flat position.

In witness whereof, I have hereunto subscribed my name.

ADOLPH LANGSNER.