

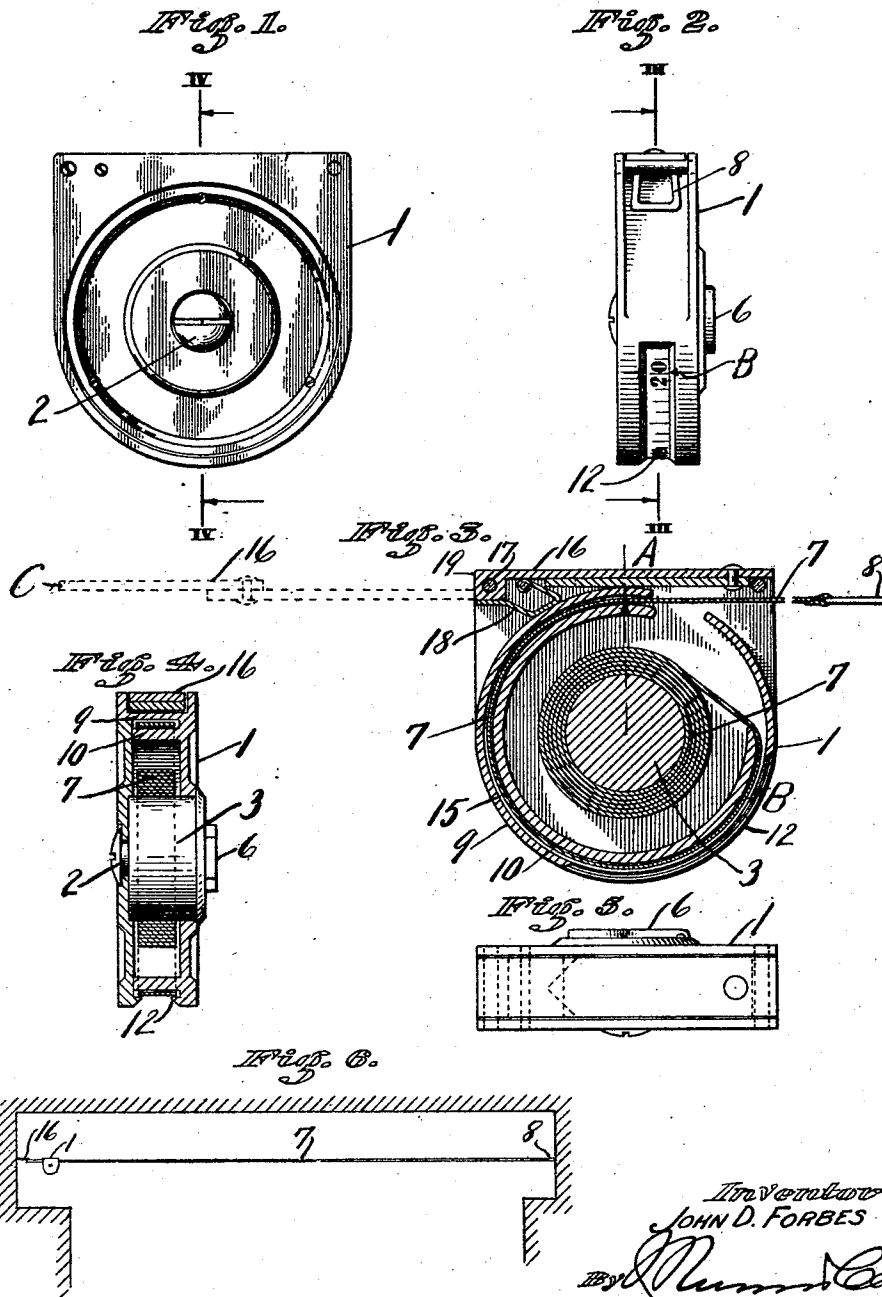
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TAPE MEASURE

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TAPE MEASURE.

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To all whom it may concern:

Be it known that I, JOHN D. FORBES, a subject of the King of England, and a resident of San Francisco, county of San Francisco, State of California, have invented a new and useful Tape Measure, of which the following is a specification.

The present invention relates to tape measures and its object is to provide a tape measure that can be conveniently used in any corner, on the inside of an arch or any other place difficult of access for the ordinary tape on account of the casing being in the way. A further object is to provide a tape from which the distance measured in those corners or arches can be read off directly without any figuring, adding or subtracting, and from which also any intermediate distances can be read off directly.

I attain these objects by the mechanism illustrated in the accompanying drawing in which Figure 1 represents a plan view of the casing containing the tape; Figure 2 a side view of the same; Figure 3 a sectional view along line 3—3 of Figure 2; Figure 4 a sectional view along line 4—4 of Figure 1; Figure 5 an end view of the casing and Figure 6 an illustration of the tape in use.

Referring to the drawing more particularly by the hollow casing (1), heel-shaped and flat, supports, in the central part of its walls, the pin (2) having the spool (3) fastened thereto. The latter is adapted to be rotated within the casing, by means of the outside handle (6), and has fastened to it one end of the tape (7). The other end of the tape (7) is provided with the customary link (8). I prefer to use for my purposes a continuous reading tape, that is, a tape graduated in such a manner that the foot distance from the end of the tape is indicated on each inch subdivision, which makes it possible to ascertain the exact distance from the end of the tape, although only a small part of that part of the tape from which the distance is to be read is visible to the eye.

Like in any other tape measure, the tape (7) is adapted to be wound on the spool (3), so that the whole tape may be enclosed in the casing. To use the tape, it is stretched between the two points defining the distance to be measured so that the end of the link rests on one of the points, when the point on the tape registering with the other point of the distance to be measured will disclose the length of the same. Thus far

my tape works like any ordinary tape and my attachment does not in the least interfere with this way of measuring, even when my attachment is to be used. I wish to point out this feature particularly in order to distinguish my invention from others heretofore patented.

Referring to my particular feature now, it will be seen that from the spool the tape is led through the passage (15) defined by two circular guides (9) and (10). The guide (9) is a part of the casing and the guide (10) runs inside of guide (9) and is parallel to the same. It accompanies guide (9) for about three-quarters of a circle, omitting, as shown in Figure 3, the upper right-hand quarter. The outer guide, being at the same time a part of the casing, is provided with an opening (12) which exposes part of the tape inside the casing to the eye. This opening extends substantially through the lower right-hand quarter of the circle, as shown in Figure (3) and should be long enough to expose a sufficient part of the tape to enable the party using it to ascertain the exact reading of the tape, that is the feet as well as the inches. In a continuous reading tape a distance somewhat over an inch will do for this purpose.

The tape thus being forced to always pass around the inner guide, I define two points on the latter guide, point A being perpendicularly over the center of the spool (Figure 3), the other point being within the opening (12) and its location being disclosed to the eye by a registering mark B on the outside of the casing as shown in Figure (2). It is evident that as the distance between A and B over the surface of the inner guide cannot change, neither can the length of the tape measured over the same.

Since the casing itself does not adapt itself to its use in narrow places, arches, corners, etc., I provide a collapsible extension (16) pivoting on a pin (17) supported in the casing. A spring (18) pivoted in the casing and bearing on the square head (19) of the extension forces the extension from any slanting position into a horizontal or vertical position. The extension may be collapsed so as to fit inside the casing or it may be spread so as to extend from the casing in the opposite direction from that of the tape, as shown in the dotted lines in Figure (3), the tape and the extension prac-

tically forming a tangent on the circle defined by the inner guide. The end of the extension is marked C and the length of the extension is so defined that the distance A—C is exactly equal to the distance A—B measured over the inner guide, so that it is always possible to read at B the exact distance between C and the opposite end 8 of the tape. It is needless to say that the extension C—A will reach into practically any corner, arch or other “inside” difficult of access and that it may be made of material sufficiently flexible that it can be used with ease on curved surfaces.

15 As shown in Figure 6, my attachment does not interfere with the measurement of intermediate distances, and any distance between the free end of the tape and the casing can be read off from the tape in the usual 20 manner.

I claim:

1. In a tape measure comprising a casing, a drum rotatable within the same and a tape adapted to be wound on the same, a

circular guide within the casing adapted to 25 lead the tape out of the casing, a tangential extension of the tape mounted on the casing and means on the casing visible from the outside thereof showing the length of the extension on the tape that remains in the 30 casing so that the total distance between the end of the tape and the end of the extension is disclosed on the tape by said means.

2. In a tape measure comprising a casing, a drum rotatable within the same and a tape 35 adapted to be wound on the same, a circular guide within the casing adapted to lead the tape out of the casing, a collapsible tangential extension of the tape mounted on the casing and means on the casing visible from 40 the outside thereof showing the length of the extension on the tape that remains in the casing so that the total distance between the end of the tape and the end of the extension is disclosed on the tape by said 45 means.

JOHN D. FORBES.