(No Model.) 2 Sheets—Sheet 1.

F. L. CHURCH.

TAPE MEASURE.

No. 527,194. Patented Oct. 9, 1894.

Fig. 1.

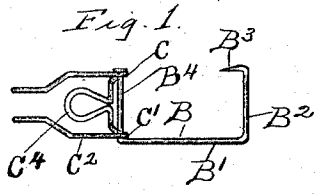


Fig. 3.

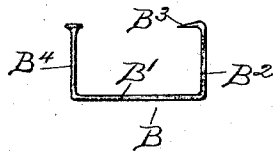
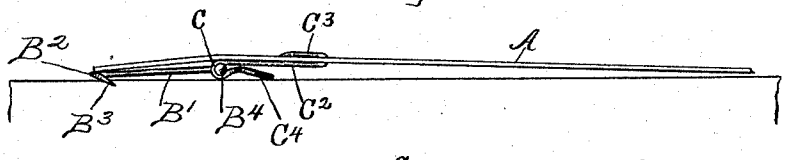


Fig. 2.



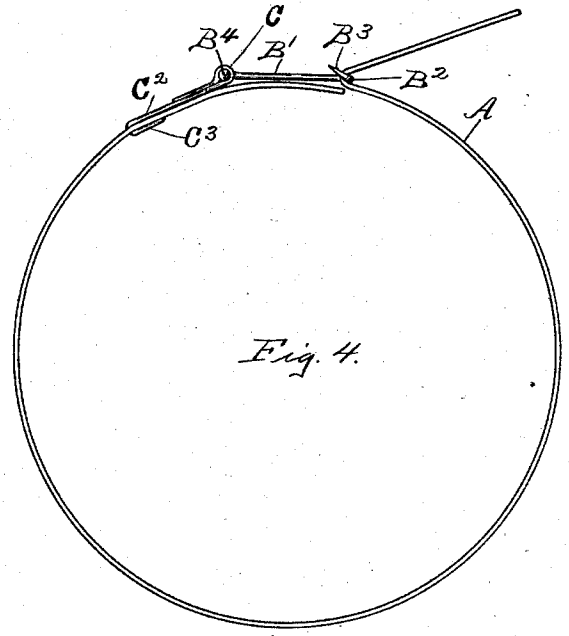


Fig. 4.

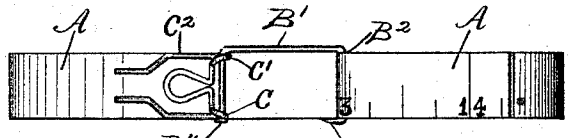


Fig. 5.

Witnesses:
A. E. Delaney
B. W. Tibbe

Inventor:
Frank L. Church,
by Mosher & Curtis
attys.

No Model.)

2 Sheets—Sheet 2.

F. L. CHURCH.

TAPE MEASURE.

No. 527,194. Patented Oct. 9, 1894.

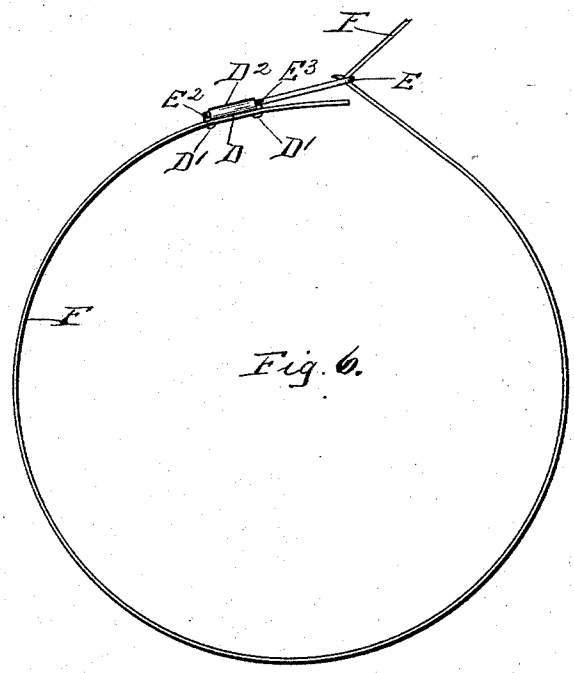
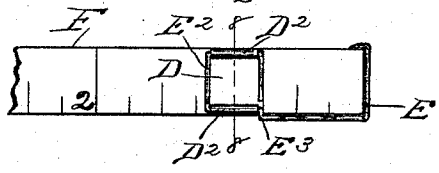


Fig. 6.

Fig. 7.



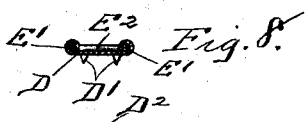


Fig. 8.

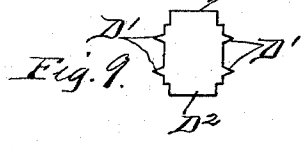


Fig. 9.

Witnesses:
A E Delaney
B. W. Tile

Inventor:
Frank L. Church
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UNITED STATES PATENT OFFICE.

FRANK L. CHURCH, OF TROY, NEW YORK.

TAPE-MEASURE.

SPECIFICATION forming part of Letters Patent No. 527,194, dated October 9, 1894.

Application filed December 7, 1893. Serial No. 493,029. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. CHURCH, a citizen of the United States, residing at Troy, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Tape-Measures, of which the following is a specification.

My invention relates to such improvements and consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a top plan view of the hook and pivotal connection detached from the tape. Fig. 2 is an edge view of the same attached to the tape and hooked to a piece of fabric. Fig. 3 is a top plan view of the hook detached from its pivotal connection. Fig. 4 is an edge view of the same showing the tape in position to inclose an object and measure its circumference or periphery. Fig. 5 is a plan view of the device shown in Fig. 4. Figs. 6, 7, 8 and 9 also illustrate my invention in a modified form.

The object of my invention is to provide one end of a tape-measure with a device which will serve as a runway through which the other portions of the tape can be conveniently drawn when taking the peripheral measurement of an object, and as an attaching-hook when measuring along plane surfaces; also a convenient means for securing the device upon a tape.

A— is the tape of the usual form marked preferably to provide readings in inches on both sides.

B— is the combined hook and runway made of wire and comprising the shank B′— extending lengthwise of the tape the runway-bar B^2— crossing the tape at right angles thereto, and the pointed end B^3— bent at approximately right angles to the bar, and inclined to the plane of the bar and shank. The shank is also provided with a pivot B^4— adapted to enter and turn in the eyes C—, C′— formed in the wire C^2—, the ends C^3— of this wire being forced through the tape and bent down upon it to hold the wire securely attached to the tape.

The eyes can be left partly open on one side, as shown in Fig. 2, so that the pivot can be sprung into or out of the eyes when desired; or the eyes can be closed as shown in Fig. 4.

The middle portion of the wire can be bent either forward or backward to form the side opening in the eyes on either the back or front side.

When desired, the middle portion of the wire can be provided with a loop C^4— to facilitate the insertion of the pivot in the eyes.

My improved tape-measure is especially useful in measuring the periphery of a yielding object, as for example a coat-sleeve when on a person's arm, for the reason that the loose end of the tape is run over the runway-bar and drawn to the required tension by one hand while the other hand is free to adjust the tape or the object to be measured, whereby an even tension is obtained. When the desired tension is obtained, the bar indicates the proper reading on the tape.

The tape can be easily passed over the pointed bent end of the hook to carry it into use on the bar, or to remove it therefrom, and the bent end serves to hold the tape in place on the bar while the bar is in use.

When it is desired to use the runway-bar, the device is maintained in a position such that the bent and inclined end is inclined upward or away from the object being measured, to better retain the tape upon the bar and avoid engagement of the pointed end with the object being measured; but when there is no occasion to use the bar, the device is inverted thereby causing the bent inclined end to incline downward or toward the object being measured, thereby causing the pointed end to freely engage with the object and hold one end of the tape while the straight-line dimension is being taken.

By having the hook-device pivoted upon an attaching wire or plate, greater flexibility is obtained and more accurate measurement of small bodies obtained.

For many purposes sufficient accuracy can be obtained when the hook is rigidly secured

to an attaching-plate, as shown in Figs. 6, 7, 8 and 9, in which D— is the attaching-plate, E— the hook, and F— the tape.

The attaching-plate is preferably cut by suitable dies from sheet-metal in the form of the blank shown in plan in Fig. 9, the points D'— being bent down at right angles to the body of the plate to form attaching-prongs as shown in Fig. 8, which is a vertical section taken on the broken line 8—8, in Fig. 7.

The edges D^2— of the blank are swaged up around the shank E'— of the hook, as shown in Figs. 7 and 8, thereby securing the hook to the plate.

The cross-bar E^2— of the hook-shank bears upon one end of each swaged edge, and the offset E^3— bears upon the opposite end of one swaged edge, whereby the shank is prevented from slipping in the inclosing swaged edges, and is securely fixed to the plate. The prongs D'— are inserted through and bent down upon the tape, as shown in Fig. 6, to secure the device to the tape.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a marked tape, of a hook secured to the tape at or near one end and comprising a shank extending lengthwise of the tape, a runway-bar crossing the tape at approximately right angles thereto and a bend at the end of the bar, substantially as described.

2. The combination with a marked tape, of a hook, secured to the tape at or near one end and comprising a shank extending lengthwise of the tape, a runway-bar crossing the tape, and a pointed end bent at approximately right angles to the bar and inclined to the plane of the bar and shank, substantially as described.

3. The combination with a hook, comprising a shank, a run-way bar extending at approximately right angles to the shank and a bend at the end of the bar; of a marked tape, and a pivotal connection between the hook and tape, substantially as described.

In testimony whereof I have hereunto set my hand this 12th day of June, 1893.

FRANK L. CHURCH.

Witnesses:

A. E. DELANEY,

FRANK C. CURTIS.