W. H. BANGS, Jr.

Spring Tape Measure.

No. 45,372. Patented Dec. 6, 1864.

Fig. 1

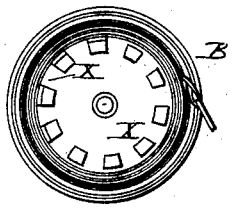


Fig. 2.

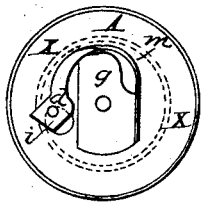


Fig. 3

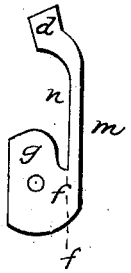
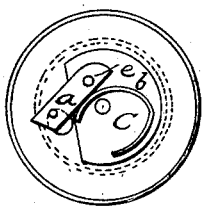


Fig. 4.



Attest.
Joseph Bennett
W. L. Bennett

Inventor.
William H. Bangs Jr.
by his attorney
C. L. Fennick

UNITED STATES PATENT OFFICE.

WILLIAM H. BANGS, JR., OF WEST MERIDEN, CONNECTICUT, ASSIGNOR TO NATHANIEL L. BRADLEY AND WALTER HUBBARD, OF SAME PLACE.

IMPROVEMENT IN SPRING TAPE-MEASURES.

Specification forming part of Letters Patent No. **45,372**, dated December 6, 1864.

To all whom it may concern:

Be it known that I, WILLIAM H. BANGS, Jr., of West Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Spring Tape-Measures; and I do hereby declare that the following is a full, clear, and exact description of my said invention, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan of a spring tape-measure with the cap of the case, to which the click or pawl is attached, removed. Fig. 2 represents a plan of the cap of the case of the spring tape-measure with the click secured to it, and in a condition to apply to the parts shown in Fig. 1. Fig. 3 represents a view of one of the parts of the tape-measure before it is bent into its ultimate shape. Fig. 4 represents a plan of a cap for the case of a spring tape-measure, with the click of the construction in general use at the date of my invention.

Spring tape measures, as generally constructed, have a circular case containing a measuring-tape, which is wound upon a barrel within which a helical spring, like a watch-spring, is secured. The spring is so arranged that when the tape is drawn out of the case the spring is more tightly wound upon the arbor on which the barrel turns; hence, when the force which draws out the measuring-tape is relaxed, the spring, acting to turn the barrel backward, winds the tape upon it. In order that the tape may not be wound up until the operator is ready for that operation, the barrel is fitted with a ratchet-wheel which revolves within the range of a click or pawl secured to the case, so that this click engaging the teeth of the ratchet-wheel prevents the winding up of the tape until the click is disengaged from the ratchet-wheel by the movement (by the user) of a stud on the exterior of the case.

The click *a*, as shown at Fig. 4, has hitherto been pivoted to a stock, *b*, which could be secured by soldering to the cap of the case; and the click has been controlled by a spring, *c*, soldered to the socket *b*, so that four pieces were required for the click mechanism—viz., the click *a*, the pivot *e*, the spring *c*, and the stock *b*. Moreover, as the click *a* is of necessity made thin, the click mechanism is continually liable to be rendered inoperative by the slipping of the spring (which acts upon its thin edge) from it.

My invention is designed to obviate the necessity of constructing the click mechanism of four pieces of metal and the consequent expense, and also to obviate the defect arising from the old arrangement of the spring.

It consists, first, of the combination of the case of the spring tape-measure with a spring-click constructed in such manner that the click is an extension of the spring, so that the spring-click performs the offices of the click, spring, and pivot of the old construction, without the possibility of the click escaping from the pressure of the spring, and with the further advantage that it may be made of a single piece of metal, instead of three pieces.

The invention consists, secondly, of the combination of the case of the spring measuring-tape with the spring-click and stock, constructed in such manner that the click and spring are an extension of the stock, so that a single instrument, which may be termed a "compound spring-click stock," performs the offices of the four separate members of the old arrangement—viz., stock, spring, pivot, and click.

The mode in which I have applied my invention is represented in Fig. 2 of the accompanying drawings, where the click *d* is an extension of the curved spring *m*, and the spring click thus formed is an extension of the plate *g* or stock, which is soldered to the cap A of the case B, Fig. 1, of the measuring-tape *n*, so that the parts *d m g* constitute a single instrument, performing the offices of the four separate members of the old arrangement shown at Fig. 4.

In order to form this instrument, I cut out (by punching or otherwise) a piece of sheet-brass of the form shown at Fig. 3. This piece is then bent at right angles at the dotted line *f f*, and is twisted half round at the part *n*, so that the flat plate *g* acts as stock, the narrow strip *m* as spring, and the head *d* as click. The compound spring-click stock thus formed is secured by soldering to the interior of the

cap A of the tape-measure, with its head in the proper position to engage between the teeth of the ratchet-wheel of the spring-barrel when the cap is in place, the position of the ratchet-wheel relatively to the head being indicated by the dotted circles *x* in Fig. 2. The head of the click is perforated to receive the stem of the stud *i*, by which it can be moved to disengage it from the teeth of the ratchet-wheel *x* of the spring-barrel. The stem of the stud passes through an opening in the cap, and has a head of the usual form on its exterior, to which the finger of the user can be applied.

The first part of my invention may be used without the second by securing the shank of spring-click to a separate plate or stock before applying the latter to the cap of the tape-measure.

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

1. The combination of the case of a spring tape-measure with a spring-click constructed in such manner that the click is an extension of the spring, substantially as set forth.

2. The combination of the case of a spring tape-measure with a compound spring-click stock, substantially as set forth.

In witness whereof I have hereunto set my hand this 16th day of July, 1864.

WILLIAM H. BANGS, JR.

Witnesses:

CATHES G. ROYS,

GEORGE A. HAY.