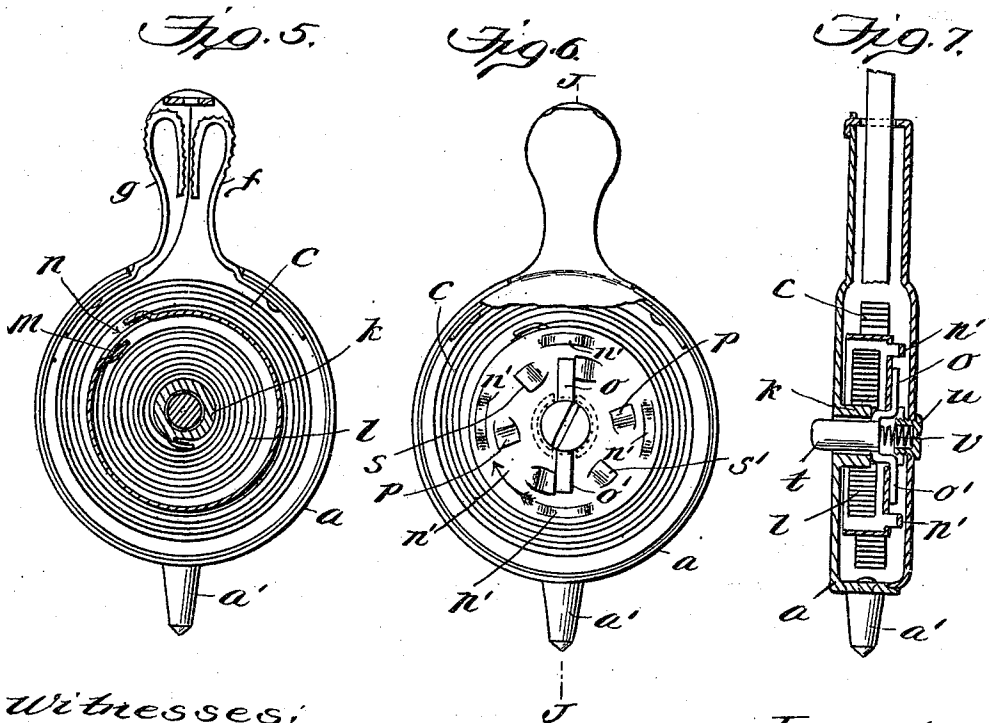
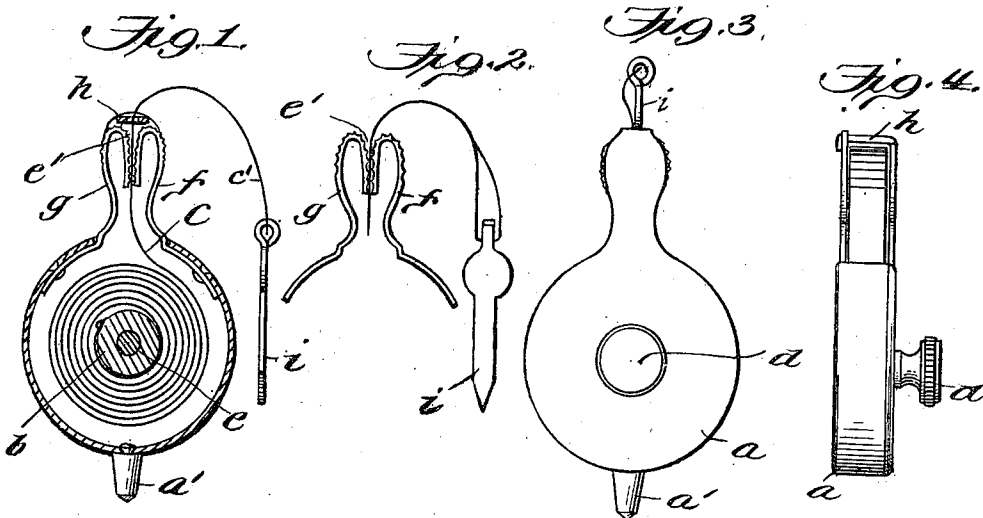


F. FITTON & E. MILNES.  
 TAPE MEASURE FOR USE ON BOWLING GREENS.  
 APPLICATION FILED MAY 23, 1910.

996,476.

Patented June 27, 1911.



Witnesses:  
*[Signature]*  
*[Signature]*

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 Atty.

# UNITED STATES PATENT OFFICE.

FREDERICK FITTON AND EDWARD MILNES, OF ROCHDALE, ENGLAND.

TAPE-MEASURE FOR USE ON BOWLING-GREENS.

996,476.

Specification of Letters Patent. Patented June 27, 1911.

Application filed May 23, 1910. Serial No. 562,892.

To all whom it may concern:

Be it known that we, FREDERICK FITTON and EDWARD MILNES, subjects of the King of England, residing, respectively, at 2 Bury road and at 37 Lord street, Rochdale, in the county of Lancaster, England, have invented certain new and useful Improvements in Tape-Measures for Use on Bowling-Greens, of which the following is a specification.

This invention relates to an improved tape measure particularly adapted for use on bowling greens, and the primary object of the same is to provide a device of this character with simple and effective operating mechanism of a strong and durable nature and whereby a measuring tape may be readily drawn out from its inclosure and checked at any point desired by a simple manipulation of a portion of the device so that the tape or other measuring strand forming part of the improved device may be held in any fixed or immovable position to take or ascertain a measurement of a distance from or between a jack and a bowl in the game of bowls as is well known to positively settle disputes that may arise.

A further object of the invention is to provide a simple means for positively determining the various comparative measurements in a game of bowls relative to one or more previous measurements of a competitor's woods or bowls as may be desired.

With these and other objects and advantages in view the invention consists in the construction and arrangement of the several parts which will be more fully hereinafter described and claimed.

In the drawing: Figure 1 is a longitudinal section of the improved instrument. Fig. 2 is a detail view showing the flexible jaws or clamps with guide piece or bar removed and a portion of the tape or measuring strand and securing peg therefor. Fig. 3 is a front elevation of the improved instrument particularly illustrating the peg in the position in which it is desired when not in use. Fig. 4 is an edge elevation of the improved instrument with the peg arranged as shown by Fig. 3. Fig. 5 is a longitudinal section of a modified construction. Fig. 6 is a further view of the modi-

fied construction in side elevation partially broken away and showing the reel in position and having the measuring tape, cord or wire wound thereon and also illustrating the holding and releasing mechanism. Fig. 7 is a cross-section taken in the plane of the line J—J of Fig. 6.

In both forms of the device, or that embodying a simple winding spindle having a knob and that comprising a winding spring, the essential features of the invention are the same.

In the form of the device shown by Figs. 1, 2, 3 and 4, *a* designates the hollow approximately circular metal case; *b* the reel; *c* the tape, cord or wire; *d* the knob on the end of the winding spindle *e*; and *e'* the throat of the case through which the tape, cord or wire *c* has movement in passing outwardly from or into the said case. Extending upwardly from the case on opposite sides of the throat *e'* and having inturned or inwardly bent extremities are flexible jaws or clamps *f* and *g* provided with suitably milled or roughened contiguous surfaces between which the tape, cord or wire has movement. Supported adjacent to the jaws is a guide-piece or bar *h* and connected to the free end of the tape, cord or wire *c* is a flat peg *i* adapted to be inserted in the ground surface to hold the end of the tape, cord or wire in determining a measurement. The case *a* at a point diametrically opposite the position of the jaws *f* and *g* is provided with a peg *a'* fixed thereto and adapted to be inserted in the ground when the device is in use so as to preserve an accuracy of measurement between two points.

In the operation of the device as just explained and shown by Figs. 1, 2, 3 and 4, the tape, cord or wire is drawn outwardly between the jaws *f* and *g* and the peg *i* inserted in the ground at the point from which it is desired to take the measurement while the case *a* with the peg *a'* is held at the beginning of measurement, or the peg *i* may be inserted in the ground at the beginning point of measurement and the case *a* moved to the point where the measurement is to be determined as to distance. When a sufficient length of the tape, cord or wire *c* has

been paid out, further movement of the tape, cord or wire from the case *a* may be readily checked by pressing the jaws *f* and *g* there-  
 5 against and holding said jaws firmly compressed until the measurement is ascertained. After the measurement has been made, the tape, cord or wire may be readily wound on the reel through the rotation of the spindle *e* by the knob *d* and the peg *i* inserted into  
 10 the device, as shown by Fig. 3. The bar *h* has the opening therethrough coinciding with the plane of the vertical diameter of the case and with the central plane between the inturned free extremities of the jaws *f*  
 15 and *g* and serves as an indicator when the tape, cord or wire is drawn taut thereover to designate with accuracy the foot, inch, or fraction of an inch on the tape, cord or wire.

In the device shown by Figs. 5, 6 and 7  
 20 the case *a* is preferably made in two halves, and therein is a central or concentric circular bush piece or collar *k* to which is attached one end of a coiled spring *l*, as shown by Fig. 5. The other end *m* of the spring  
 25 is attached to the inner side of a cup-shaped piece *n* which incloses the end of the spring *l* at its inner portion and has its outer side or portion provided with projections *n'* and forming bearing points engaging the inner  
 30 side of one-half of the case, which is shown removed in Fig. 6. A suitable space is formed between the sides of the cup-shaped piece *n* and the inner side of the corresponding half of the case *a* when the complete  
 35 case is associated or has its halves assembled for inclosing the whole mechanism, and said space permits movement of the arms *o*, *o'* of the releasing mechanism, hereinafter more fully described, from the face of the  
 40 piece *n*. The cup-shaped piece *n* is also provided with a plurality of projections *p* disposed in circular arrangement, as shown by Fig. 6, and smaller than the projections *n'* and with which the arms *o*, *o'* engage  
 45 when the said piece *n* is in normal position, the said arms *o'* engaging the projections *p* until released therefrom by pressure thereon. By this latter means also the cup-shaped piece *n* is maintained in position  
 50 during the winding of the spring *l* by the rotation of the said cup-shaped piece in the direction of the arrow, as shown by Fig. 6, by pulling out the end *o'* of the tape, cord or wire *c* when unwinding the latter. As  
 55 the tape, cord or wire *c* is pulled outwardly, the projections *p* pass under and impinge on the sides of the arms *o* and *o'* at the points *s*, *s'* or at diametrically opposite points, the engagement by the arms *o*, *o'*  
 60 with the different projections *p* progressing regularly in accordance with the length of the tape, cord or wire drawn outwardly from the case or from the piece *n* which forms the reel for carrying the tape, cord

or wire *c*, and as a consequence the tension 65 of the spring *l* is correspondingly increased. It is preferred that a tape be used as the measuring means in view of the advantages incident to applying scale marks thereto. When it is desired to rewind the tape *c* on 70 the piece or reel *n* within the case *a*, the arms *o*, *o'* may be released or pushed out of contact with the projections *p* engaged thereby by pressing on the push-piece *t* between which and the fixed screw-socket *u*, 75 applied to the other half or removable side of the case *a*, is introduced a spring *v* which offers resistance to the inward pressure of the said arms *o*, *o'* or the push-piece *t* and serves to restore the said push-piece and 80 its arms to normal position after the reel through the action of the spring *l* has fully wound thereon the tape *c*.

The device will be found exceptionally 85 convenient for the purpose for which it has been devised and such changes in the proportions and dimensions as well as the minor details will be adopted as fairly fall within the scope of the claims.

What is claimed as new is: 90

1. In a device of the class specified, the combination with a case and a measuring device movable into and outwardly from the case, of flexible clamps disposed on opposite sides of the outlet of the case and 95 operative by manual compression to hold the measuring device against movement either outwardly from or inwardly into the case.

2. In a device of the class specified, a case 100 having a flexible measuring device movable outwardly therefrom and inwardly therein into and adapted to be wound in the said case, flexible clamps disposed on opposite sides of the point where the measuring device passes outwardly from and inwardly 105 into the case, the clamps being manually compressible to engage the measuring device, and a peg attached to the end of the measuring device and insertible between the 110 clamps when not in use.

3. In a device of the class described, the combination of a case, a flexible measuring device movable into and outwardly from the case and adapted to be wound within 115 the latter, a peg carried by the case, a peg secured to the free end of the measuring device, and flexible clamps disposed on opposite sides of the point in the case where the measuring device moves outwardly from 120 and inwardly thereinto, the said clamps being manually compressible to engage the measuring device to hold the latter against movement.

4. In a device of the class specified, the 125 combination of a case, a flexible measuring device movable outwardly from and into the case and adapted to be wound within

the latter, flexible clamps disposed on the case on opposite sides of the point where the flexible measuring device passes outwardly from and into the said case, and a  
5 guide bar on a portion of the case for engagement by the flexible measuring device.

In testimony whereof we have hereunto

set our hands in presence of two subscribing witnesses.

FREDERICK FITTON.  
EDWARD MILNES.

Witnesses:

MALCOLM SMETHURST,  
JOHN HENRY BUTTEURTH.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."

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