No. 889,570. PATENTED JUNE 2, 1908.

E. D. AYERS.

TAPE LINE.

APPLICATION FILED AUG. 16, 1907.

2 SHEETS—SHEET 1.

Fig-1-

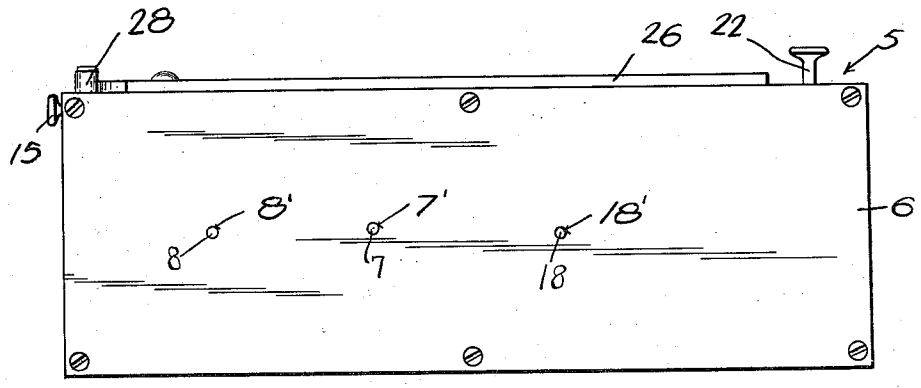
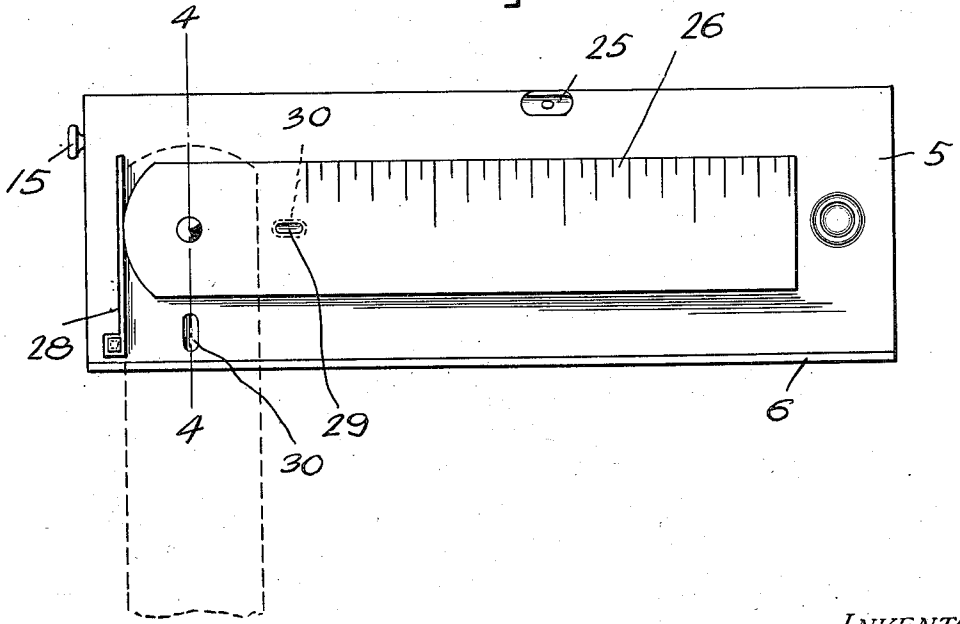


Fig-2-



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2 SHEETS—SHEET 2

Fig. 3.

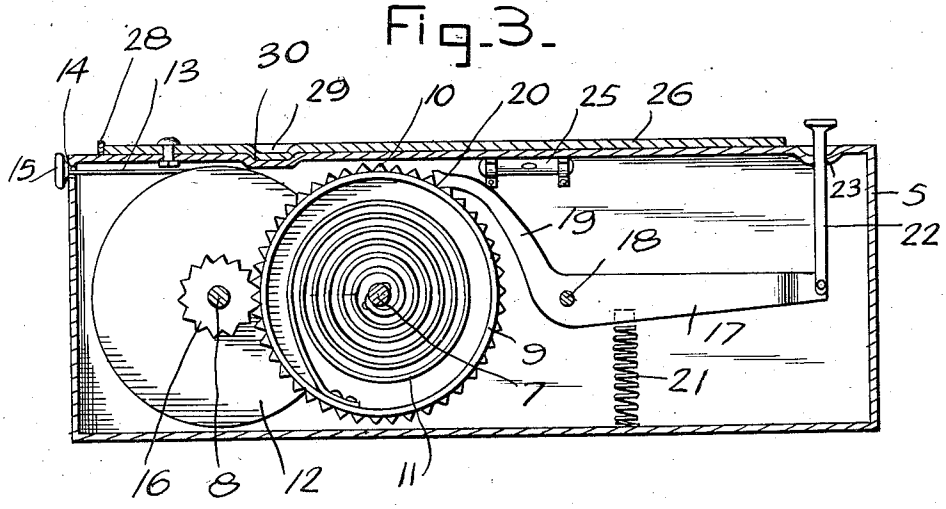
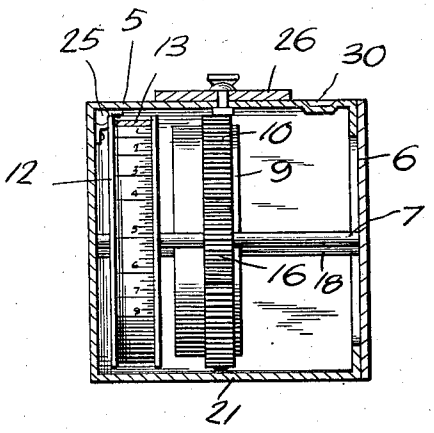


Fig. 4.



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UNITED STATES PATENT OFFICE.

ELMER D. AYERS, OF JONES STATION, PENNSYLVANIA.

TAPE-LINE.

No. 889,570. Specification of Letters Patent. Patented June 2, 1908.

Application filed August 16, 1907. Serial No. 388,837.

To all whom it may concern:

Be it known that I, ELMER D. AYERS, a citizen of the United States, residing at Jones Station, in the county of Allegheny, State of Pennsylvania, have invented certain new and useful Improvements in Tape-Lines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in tape measures and has more particular reference to a tape measure of that type which includes spring means for retracting the same into its casing.

The invention also comprehends a construction adaptable for use as a spirit level and a square.

In connection with a device of the above type the invention aims as its primary object to provide novel means for retracting the tapeline into its casing after use.

The invention aims as a further object to provide a novel construction, combination and arrangements of parts, the details of which will appear in the course of the following description, in which reference is had to the accompanying drawings forming a part of this specification, like characters of reference designating similar parts throughout the several views, wherein:—

Figure 1 is a side elevation of a tape measure constructed in accordance with the present invention, Fig. 2 is a top plan view thereof, Fig. 3 is a central longitudinal sectional view thereof, Fig. 4 is a section on the line 4—4 of Fig. 2.

In the accompanying drawings the numeral 5 designates a suitable casing having a detachable side wall 6. Between the side walls of the casing 5 are mounted transverse shafts or axles 7 and 8, the former being disposed rearwardly of the latter. Mounted for rotation upon the axle 7 is a cup shaped wheel 9 having its periphery provided with spur teeth 10 and a flat coil spring 11 is disposed within the wheel 9 and has one end secured thereto and its other end secured to the shaft or axle 7. The axles 7 and 8 have their ends reduced to form bearings which engage in openings 7′ and 8′, respectively, in the side walls of the casing.

Mounted on a shaft or axle 8 is a reel 12 which carries the tape measure 13, the latter working through a slot 14 provided in the front wall of the casing 5, and carrying at its free end a button 15 which affords a finger piece, and which at the same time prevents the line 13 from being drawn wholly within the casing. The reel 12 is formed in one side thereof with an integral pinion 16, in mesh with and driven from the teeth 10.

In the rear part of the casing 5 a lever 17 is pivoted as at 18, which latter has its bearings in openings 18′ in the side walls of the casing. Beyond its pivot said lever has an angularly extending finger 19 terminating in a locking spur 20. The spur 20 is normally held in engagement with the teeth 10 by the pressure of an expansible coil spring 21 bearing against the bottom wall of the casing and against the lever 17. For the purpose of forcing said lever downwardly against the tension of the spring 21, and to release the spur 20 from engagement with the teeth 10, a stem 22 is provided which is pivoted to the rear end of the lever 17 and which projects and works through an opening 23 in the top wall of the casing 5. The said top wall carries a countersunk spirit tube 25, which serves as a leveling device in the well known manner. Pivoted to one of the walls of the casing 5 is a calibrated ruler 26, which coacts with the said casing to afford a T-square and which adjacent its pivot has a rounded end. A leaf spring 28 has one end fixed to the said wall and with its free end bears against the round end 27 of the ruler 26, the function of this leaf spring being to sustain the ruler in either its folded or extended positions. The said ruler 26 inwardly of its pivot is constructed with a depression 29 which is shallow to accommodate a conformable raised lug 30, in the extended position of said ruler, it being understood that the pivot thereof has a slight play towards the attainment of this function.

In use the tape measure 13 is withdrawn from the casing against the tension of the spring 11, and the lever 17 engaging the teeth 10 in the manner stated, prevents said spring from accidental action to retract the line 13. The action of the spring 11 is permitted when the stem 22 is depressed in the manner above set forth.

The invention is simple in its structural details, inexpensive to manufacture, and practical and efficient in use.

From the foregoing description it will be seen that simple and efficient means are provided for accomplishing the objects of the in-

vention but, while the elements herein shown and described, are well adapted to serve the functions set forth, it is obvious that various minor changes may be made in the proportion shape and arrangement of the several parts, without departing from the spirit and scope of the invention as defined in the appended claims.

What is claimed, is:—

A device of the type set forth comprising a casing including a detachable side wall, axles mounted transversely of said casing, a toothed wheel mounted on one of said axles, a flat coil spring having connection with said wheel and said last named axle, a reel mounted on the other of said axles, a tape measure carried by said reel and movable into and out of said casing, a pinion carried at one side of said reel and in mesh with said toothed wheel, a spring pressed pivoted lever having an extension formed with a spur to engage the periphery of said toothed wheel, and a stem for moving said lever against the tension of said spring as and for the purpose set forth.

In testimony whereof, I affix my signature, in presence of two witnesses.

ELMER D. AYERS.

Witnesses:
WM. E. BURGE,
S. A. PHILIPS.