No. 692,665. Patented Feb. 4, 1902.

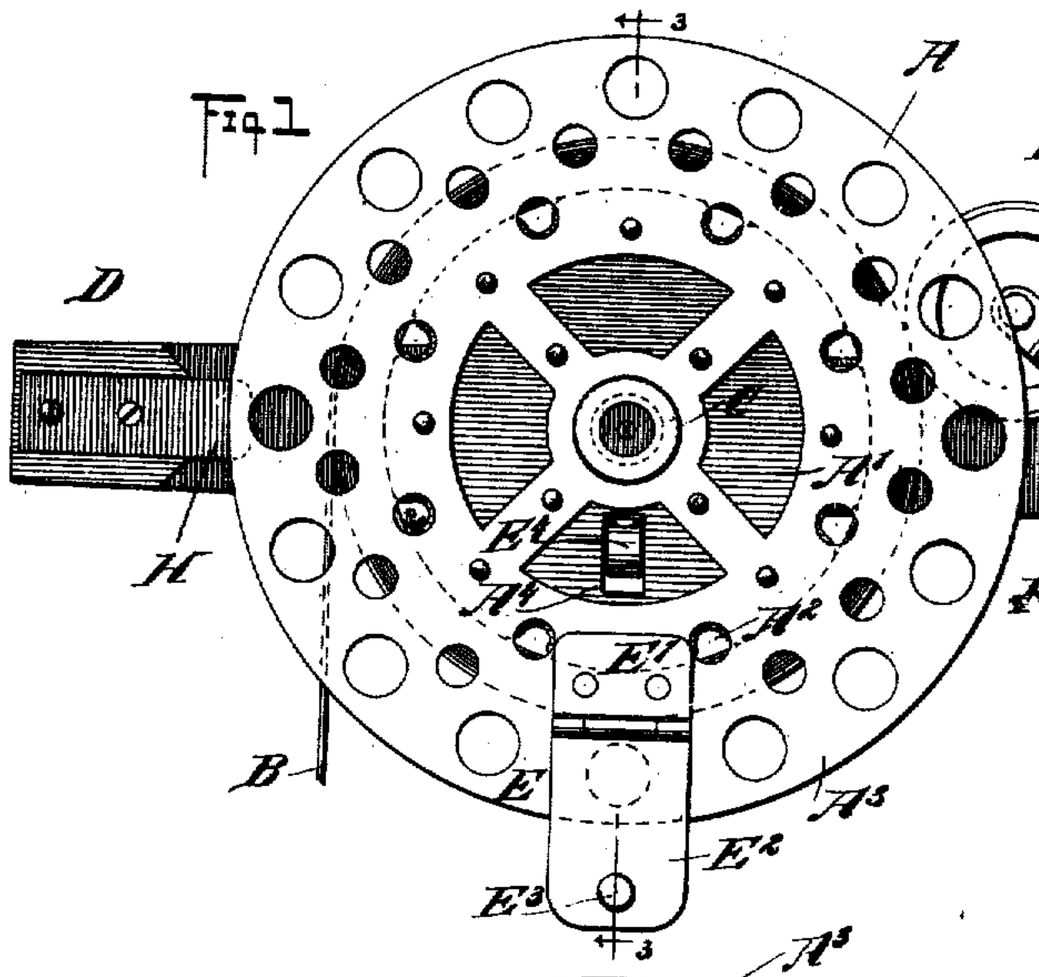
V. G. HILLS & J. E. CHAPSON.

REEL FOR TAPE MEASURES.

(Application filed Oct. 2, 1900.)

(No Model.)

Fig 1



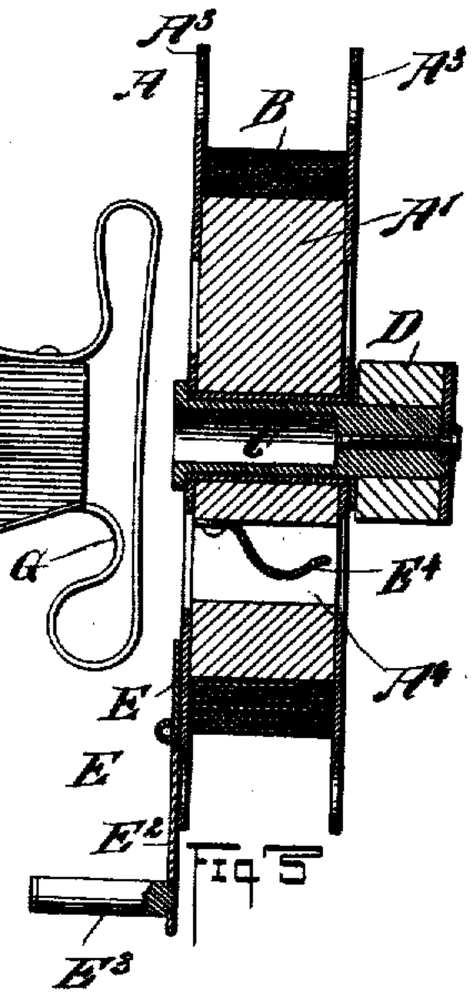


Fig 5

Fig 2

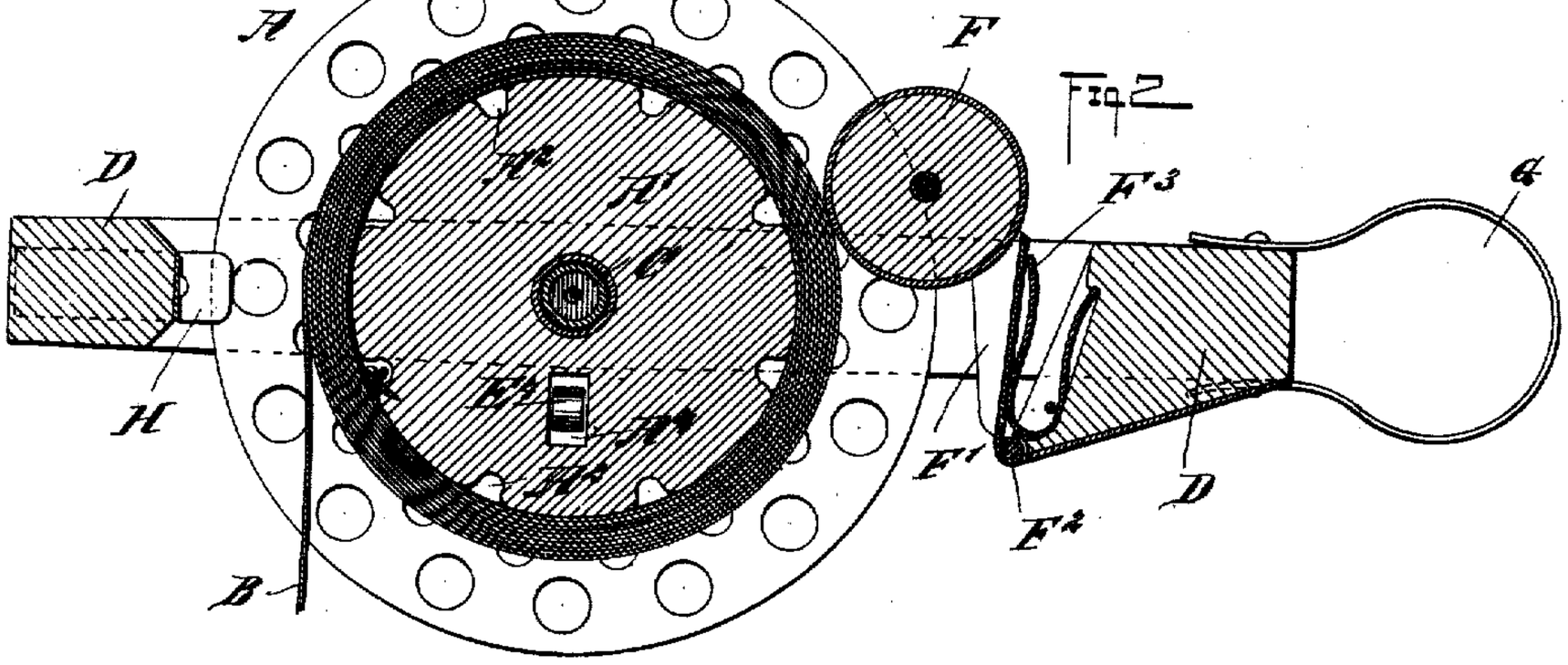
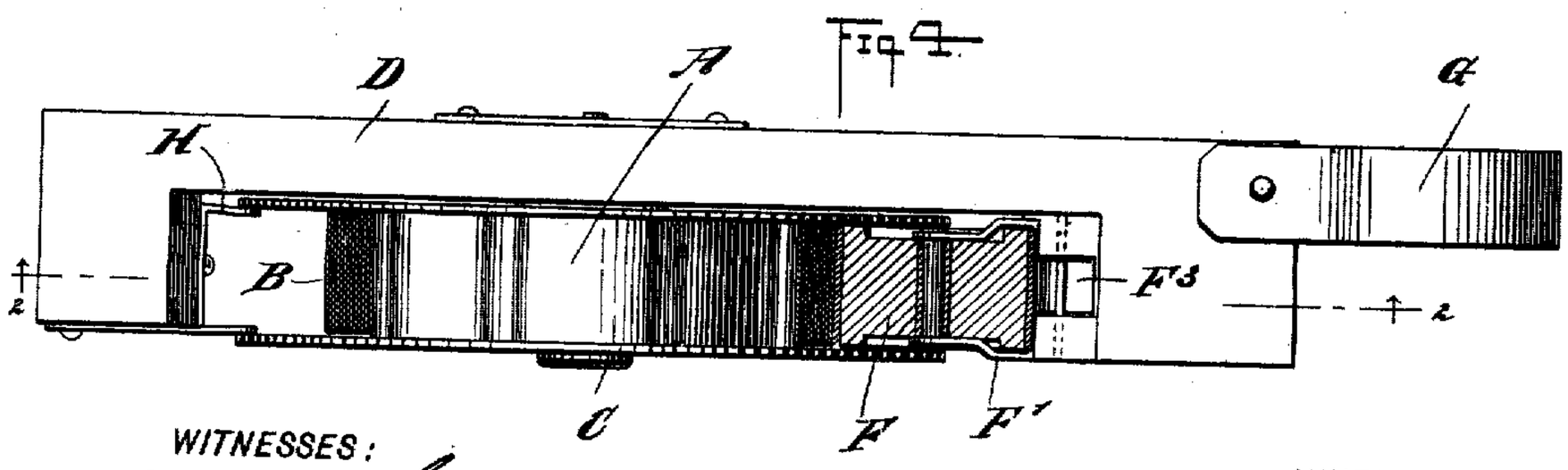


Fig 4



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VICTOR GARDINER HILLS AND JOHN EDWARD CHAPSON, OF CRIPPLE-CREEK, COLORADO.

REEL FOR TAPE-MEASURES.

SPECIFICATION forming part of Letters Patent No. 692,665, dated February 4, 1902.

Application filed October 2, 1900. Serial No. 31,765. (No model.)

To all whom it may concern:

Be it known that we, VICTOR GARDINER HILLS and JOHN EDWARD CHAPSON, citizens of the United States, and residents of Cripple-creek, in the county of Teller and State of Colorado, have invented new and useful Improvements in Reels for Tape-Measures, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved reel more especially designed to permit the use of a long narrow piece of steel tape, band, or a wire and arranged to allow a ready unwinding or winding of the tape, band, or wire without danger of the wound-up portion accidentally uncoiling from the reel, as it has a tendency to do from its own elasticity or otherwise when tension is relaxed from the unwound portion.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement. Fig. 2 is a sectional side elevation of the same on the line 2 2 in Fig. 4. Fig. 3 is a transverse section of the same on the line 3 3 in Fig. 1, and Fig. 4 is a plan view of the same with the tape and the follower in section.

The reel A, on which winds a tape B, is mounted to turn on a solid or hollow spindle C, projecting from a frame D, preferably in the shape of a bar extending along the rear face of the reel, so that the front face thereof is free and completely unobstructed by said frame to permit the attachment to and the use of a crank E on the front face of the reel A for winding up or unwinding the tape B on said reel A. The reel A is provided with a cylindrical body A′, formed in its peripheral surface with grooves A^2, and said reel is also provided with perforated flanges A^3 to allow circulation of air in the reel, and thereby prevent the tape B from rusting in case it is wound up when moist or wet. This is of particular importance when the tape is narrow and has several coils laid side by side on the cylindrical body of the reel. It will be understood that the portion of the tape which engages the body A′ of the reel bridges or spans the grooves A^2, thus leaving transverse air-channels, as indicated in Fig. 2. The inner end of the tape B projects into one of the grooves A^2 and is secured to the wall thereof, as is plainly indicated in Fig. 2.

The tape B is preferably of long narrow steel; but other suitable material may be employed, it being understood, however, that the reel is more especially designed for tapes of three hundred feet and upward. When the tape is made of long narrow steel, it is liable to uncoil by its own elasticity or otherwise when tension is relaxed from the unwound portion, and in order to prevent this a follower F is employed, preferably in the shape of a roller journaled in an arm F′, fulcrumed at F^2 to one end of the frame B, a spring F^3, which may be either in the form shown or in form of a coil-spring, or both, pressing said arm F′ to hold the follower-roller in frictional contact with the outermost coil of the tape winding on the reel A, said follower-roller extending between the flanges A^3 of the reel without, however, touching the reel to avoid undue friction. By this arrangement the spring-pressed follower prevents uncoiling of that portion of the tape wound on the reel A without, however, exerting any material resistance to the unwinding of the tape when the tape is used in the usual manner. It is expressly understood that the roller F exerts sufficient pressure on the tape to prevent the same from uncoiling, even if made of very stiff material.

The crank E consists, preferably, of a plate E′, riveted or otherwise fastened to the outer face of the front reel-flange, and on this plate E′ is hinged an arm E^2, from which projects at a right angle a crank-pin E^3, adapted to be taken hold of by the operator for turning the reel when winding or unwinding the tape. The arm E^2 is adapted to swing into an innermost position and carry the crank-pin E^3 into a transverse recess A^4, formed in the reel-body A′, and this pin E^3 when in the said

recess A^4 is engaged by a spring E^4 to hold the pin E^3 and its arm E^2 against accidental outward movement. Thus when the crank E is folded it presents no obstruction on the outer face of the reel, and when extended it can be readily taken hold of by the operator to turn the reel and wind up or unwind the tape, as previously mentioned.

One end of the frame D is provided with a handle G, of leather or other suitable material, for conveniently carrying the reel about, and on the end of the frame D opposite the follower F are secured guide-arms H, fitting against the inner faces of the reel-flanges A^3 to steady the reel when winding or unwinding the tape and to prevent the tape or the unwound portion thereof from escaping from the reel.

From the foregoing it is evident that the reel is very simple and durable in construction, combines lightness with utility and durability, insures ventilation of the tape to prevent rust when the tape is wound up wet, and holds the tape automatically against accidental uncoiling.

Although the reel is more especially designed for tape of the kind described, it is evident that the reel may be used for winding elastic bands or wires of any kind or for other purposes without deviating from the spirit of our invention.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A reel for a tape-measure, having a frame, a spool journaled therein, a steel tape winding on said spool, and a spring-pressed follower pressing on said tape, to hold the tape from uncoiling, but to allow a comparatively free unwinding from or winding up of the tape on the spool, said follower comprising a roller arranged to engage the tape, an arm fulcrumed on said frame and carrying said roller, and a spring pressing said arm, as set forth.

2. A reel comprising a frame open at one side and carrying a spindle, a flanged reel mounted to turn on said spindle, a tape winding on said reel, a spring-pressed frame pressing said tape on the reel, and guide-arms carried on said frame and engaging the flanges of the reel on their opposing or inner sides, as set forth.

3. A reel formed with perforated flanges, and a cylindrical body having a series of transverse grooves in its peripheral surface, said grooves terminating in the perforations of said flanges, as set forth.

4. A reel for a tape-measure, comprising a frame, a revoluble spool journaled therein, a normally straight spring-tape free to wind upon and unwind from said spool, a pivoted member provided with a wheel for engaging the spring-tape, and a resilient member engaging said pivoted member for the purpose of pressing said wheel against the said spring-tape.

5. A reel for a tape-measure, comprising a frame, a revoluble spool journaled therein, a guide mounted upon said frame for steadying said spool, means for rotating said spool, a normally straight spring member free to wind upon and to unwind from said spool, a wheel free to roll upon the surface of said spring member and thereby maintain the position of the windings thereof, a pivoted arm carrying said wheel, and an elastic member having a tension opposed to the tension of said normally straight spring member, for the purpose of holding said wheel in engagement with the same.

6. A reel for a tape-measure, comprising a frame, a spool journaled therein, means for actuating said spool, a spring-tape free to wind upon and unwind from said spool and tensioned so as to normally unwind therefrom, a wheel engaging said tape for the purpose of maintaining the position of the windings thereof, a movable arm supporting said wheel, and a resilient member engaging said movable arm and so tensioned as to oppose the tension of said spring-tape.

7. A reel for a tape-measure, comprising a frame, a revoluble spool journaled therein, means for manually actuating said spool in either direction, a resilient spring member free to wind upon and unwind from said spool and tensioned to normally unwind from the same by its own elasticity, a member loosely pivoted upon the frame and carrying an anti-friction device for engaging the windings of said spring member, and a resilient member for engaging the pivoted member.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

VICTOR GARDINER HILLS.
JOHN EDWARD CHAPSON.

Witnesses:
HENRY E. HILLS,
FRANK G. WILLIS.