H. J. RICE.

ADVERTISING RIBBON-REELS.

No. 183,480. Patented Oct. 17, 1876.

Fig 1

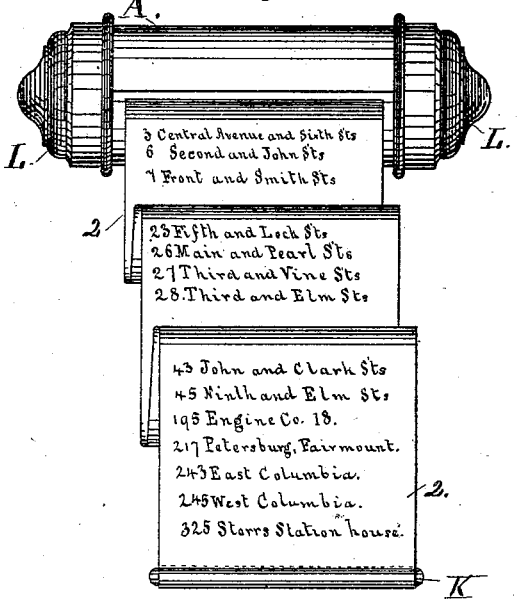


Fig. 2

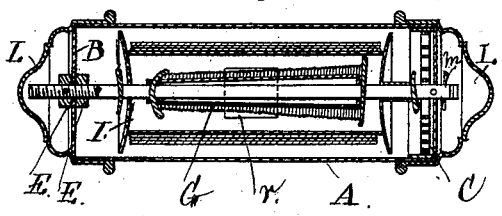


Fig. 3.

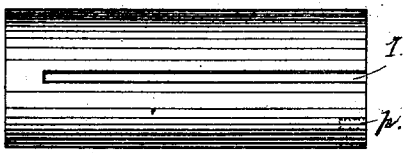


Fig 4

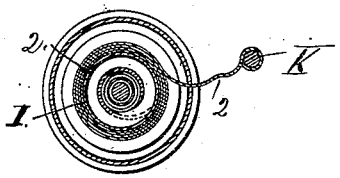


Fig. 5.

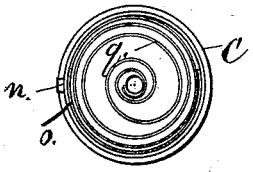


Fig. 6.

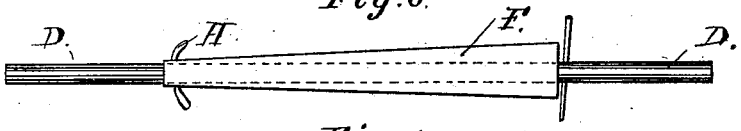
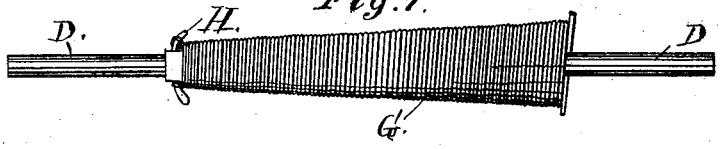


Fig. 7.



Witnesses
Chas. Earle.
W. R. Edelen.

Inventor.
Henry J. Rice.
by
John J. Halsted
his atty.

UNITED STATES PATENT OFFICE.

HENRY J. RICE, OF CINCINNATI, OHIO.

IMPROVEMENT IN ADVERTISING-RIBBON REELS.

Specification forming part of Letters Patent No. **183,480**, dated October 17, 1876; application filed September 11, 1876.

To all whom it may concern:

Be it known that I, HENRY J. RICE, of Cincinnati, in the State of Ohio, have invented new and useful Improvements in Apparatus for Advertising Fire-Alarms, and which are fully set forth in the following specification, reference being had to the accompanying drawings.

My invention relates to a pocket or other apparatus for containing within it a wound table or schedule indicating the locality or district in which a fire occurs in towns or cities, as announced by the bells or signals of the fire-alarms; and it consists in certain specific details of construction, as hereinafter set forth, such details relating to the construction and mode of attaching the end pieces or caps in which the shaft is supported, and the manner of securing the shaft fixedly thereto; and, also, in connection with a conical bed for the support or lining of a conically-wound spiral spring, the manner of securing such spring in relation to other parts of the apparatus.

In the drawings, Figure 1 is a plan; Fig. 2, a longitudinal section; and Figs. 3, 4, 5, 6, and 7, details of an apparatus constructed in accordance with my invention.

I would remark at the outset that I am aware that in tape-measures and window-curtains, and in other articles, the tape or curtain has been automatially wound up, after being distended, by means of a coiled spring inclosed within a casing, and that my present invention relates only to the specific features hereinafter set forth and claimed as new.

A is the outside case, having a longitudinal slot or opening, 1, open at one end, and through which the advertisement or schedule 2, for the fire-alarm, passes, that it may be pulled out or unwound and distended for inspection. B is one end of this case and affixed thereto, and it forms a bearing for one end of the axle, D, which, as hereinafter described, is secured tightly to one of the end bearings—preferably to B—so that it shall not revolve. The other bearing for this axis is made in the removable cap-piece C, which is inserted within the case A at one end, and is held to its place on the shaft by a pin. E E are two nuts, one within and one outside of the end B, and by the tightening of these nuts toward each other upon the threaded end of the axle D, they are made to gripe tightly upon the end B, and thus hold the shaft fixedly to the case, and at any position desired relatively to the conical spring hereinafter named.

The axle D has mounted upon it a conical piece or bed, F, made of sheet metal, and which is designed for a support for the conically-wound spring G, which is in the form of a close-wound conical tube, the bed F being a lining within the same, and serving to preserve the spring against damage or derangement when being unwound or wound in the use of the implement. This spring, at its smaller end, is secured to the axle by means of a hook-pin, H, which passes through the smaller end of the conical "liner" F, and also through the axle, thus holding all three together, the end of the wire of which the spring is composed being wound around the ends of this pin, which thus serves, also, as a brace. This conical liner F is very light, and also much cheaper to construct than a solid cone, for suitable solid cones cannot be found in the market, and if they could be, it would be necessary to turn down a journal at each end, at considerable labor and cost, and even then they would add too much to the weight. With sheet metal, also, any intensity of cone shape may be given to suit circumstances.

I is a hollow reel or spool, placed within the case A, and free to be revolved upon the fixed shaft or axle D. It encompasses the spring G, the end of which (at the larger end of the cone) is secured to this spool, and to the exterior of the spool is secured the textile or flexible table or schedule 2; hence, when the schedule is pulled out for inspection it revolves the spool, which winds the spring G more tightly upon the conical bed F, and upon releasing the schedule from the hand, the reaction of this spring draws it in again and rewinds it, a rod or bar, K, at the outer end of the schedule preventing its being drawn entirely within the case.

The nuts E E permit the adjustment of the power of the spring, by allowing of winding it tighter or looser, as may be desired, the turning of the case A upon the axle (when

the loosened nut or nuts permit) tightening the spring or relaxing it, depending upon the direction in which the case is so turned.

The end caps L L are ornamental finishing-pieces, all the mechanism being within the case A; hence my construction allows of making the apparatus very compact and quite small, so as to be carried in the pocket, and ready at all times, when an alarm of fire is given by any predetermined system printed upon the schedule within the case, to indicate to the holder the locality of the fire without any risk of mistake.

This apparatus is much preferable to a mere card or loose paper schedule, which is apt to get mixed with other papers in the pocket, or to become torn or defaced, and soon becomes useless. It is also readily taken apart and put together, by taking off one nut and withdrawing one pin, and in case of a change of the table or schedule another can easily be substituted, and in taking it apart there is little or no liability of injuring or breaking the spring, as the pressure or power of the same may be gradually taken off or reduced, as heretofore stated with regard to the adjustment of its tension.

The removable end piece C is adjustable; yet, when in place, it is practically as firm as the permanent end B, a pin, *m*, through the shaft holding it thereto, and a spur, *n*, projecting from its rim or shoulder *o*, and entering a notch, *p*, in the end of the case, preventing it from turning.

A coiled spring, *q*, may be fastened within the cap or bearing C, and in case of the possible breaking of the conical spring G it may be brought into requisition by loosening the nuts E E and pinning the spool or roller to the axle at one end through holes provided therein for this purpose, and then fastening the inside end of this coiled spring *q* to the axle. In such case the spool or inner cylinder and the axle would both turn coincidently.

The spring G (made of ordinary round wire) I consider the best and most practical, and far preferable; the other one, *q*, should be made of flat metal, like a watch-mainspring. The nuts E E also permit the lengthwise adjustment of the axle or shaft relatively to the case and other parts.

The winding of the spiral barrel-spring G in the form of a cone gives the advantage of leverage, and, also, one end being at its smallest coils fastened to the stationary axle, and its other end adjacent to its largest coils being fastened to the revolving spool or roller, the spring winds close to itself, as well as close upon its cone bed or barrel, and, consequently, great security and strength of spring are attainable from a small wire. This, therefore, allows of a large space between the axle and the spring, particularly at its larger end or spirals, and, in connection with the tubular cone-bed, there is but little if any liability of the kinking of the wire. The fine wire which I can use also helps to make the device compact.

An opening or window, *r*, in the spool I affords a ready means for inspecting the spring G, and discovering whether at any time it has become disarranged or needs a little more "set," by simply drawing out the tape or ribbon T until it uncovers this opening.

The back of the ribbon may be used for ordinary business advertisements. This cloth or ribbon, if soiled, can be taken off and washed.

The implement may instantly, by the sense of touch, be distinguished and selected from other articles in the pocket as readily as a pocket-knife; and it is not, like a paper card or schedule, damaged or rendered illegible by water, to which firemen are so much exposed.

I claim—

1. In a fire-alarm advertiser, the combination, with the case A and the revolving cylinder or spool I, of the fixed cap B and removable cap C, and the stationary axle D and its nuts E E, as and for the purpose set forth.

2. In combination with the stationary axle D, the conical tube or bed F and the conical wire spring G, secured at its smaller end to the hook-pin H, and at its larger end to the revolving spool or barrel I, as and for the purpose set forth.

3. In combination with the outer case A, provided with the longitudinal slot 1, the spool I within such case, provided with the opening *r* therein, all as and for the purposes described.

HENRY J. RICE.

Witnesses:
JOHN MILLER,
WILLIAM LEE.