Oct. 20, 1953 R. W. COOK 2,655,728

TELESCOPIC CHALK LINE DEVICE

Filed Dec. 10, 1951

FIG. 1.

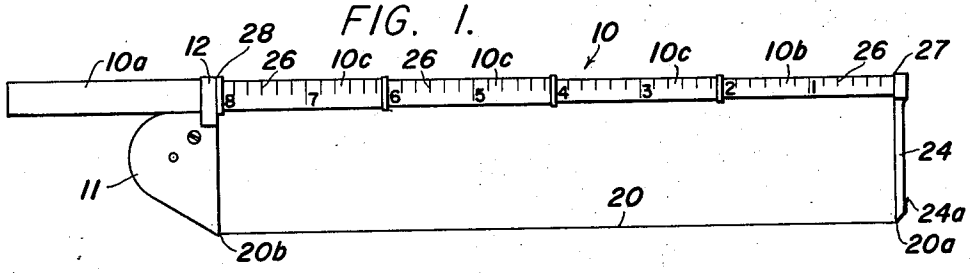


FIG. 2.

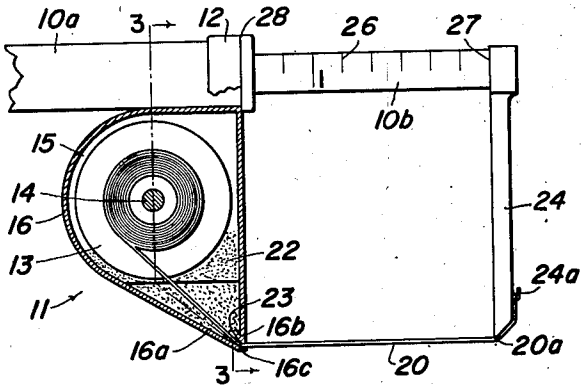


FIG. 3.

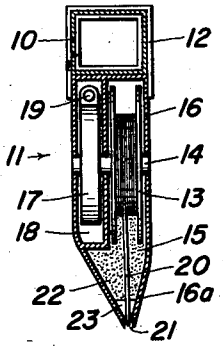


FIG. 5.

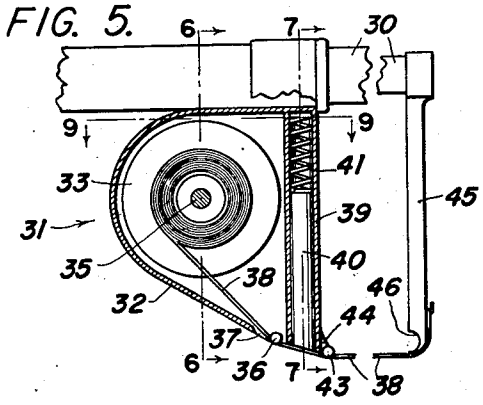


FIG. 6.

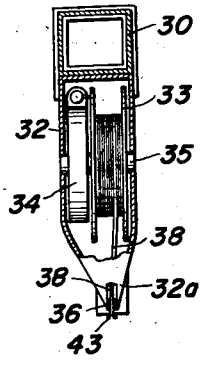


FIG. 7.

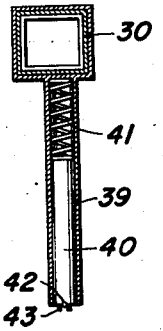


FIG. 4.

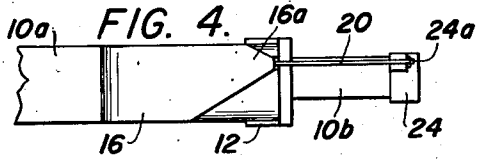


FIG. 8.

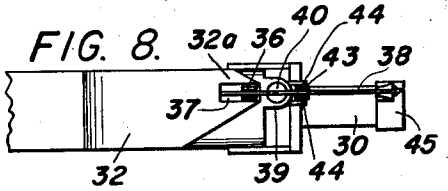
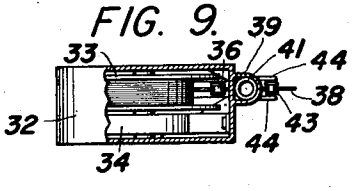


FIG. 9.



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TELESCOPIC CHALK LINE DEVICE

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5 Claims. (Cl. 33—87)

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This invention relates to chalk lines as used for the marking of temporary guide lines on a variety of surfaces, for example, signboards in connection with the painting of signs.

The customary chalk line must be held by two people during use thereof in instances where the length of the marking is to be longer than the arm span of one person. This is true whether an ordinary length of cord be chalked and used for the purpose, or one of the customary chalk line devices embodying a reel be employed. One man holds one end of the proper length of chalked cord, while another holds the other end. The two ends are simultaneously applied to the particular surface concerned, with the length of the cord stretched taut therebetween. When the cord is plucked and allowed to sharply hit the surface along the length of the cord, a straight chalk line is marked on the surface as a guide for sign lettering or for a variety of other useful purposes, as in building construction or decorating.

Principal objects of my invention are:

To enable one person to make a chalk line impression on any suitable surface, and of length far exceeding that possible by one person using a conventional chalk line or chalk line device.

To enable exact measurement by one person of the length of a chalk line at the time of and incidental to the making of the impression.

To provide a device for the purpose, which is convenient to carry and use, and which is adaptable to practically all the needs of a chalk line user.

In accordance with my invention, I employ a telescopic rod in combination with a chalk line device embodying a spring-actuated reel for coiling up the line following any given use thereof. The free end of the line, which line may be any type of cord customarily employed for chalk line purposes, is secured at the freely extensible end of the telescopic rod, so that extension of the rod over any given distance will automatically accomplish a paying out of a corresponding length of chalk line from the reel, and will hold it in properly extended, taut condition for plucking by the person holding the device against the surface concerned. Chalking of the line is accomplished in any suitable and well known manner, preferably by the customary expedient of packing chalk dust about the reel, or of holding a stick of chalk against the line as it is being payed out.

Various structural details are significant in the construction and use of the device, as will appear hereinafter.

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Further objects and features of the invention will become apparent from the following detailed description of the particular preferred embodiments illustrated by way of example in the accompanying drawing.

In the drawing:

Fig. 1 represents a side elevation of the device in an extended position;

Fig. 2, a similar view partially in vertical section, and with certain portions broken out, the view being drawn to an enlarged scale and illustrating the device in only slightly extended position;

Fig. 3, a vertical section taken on the line 3—3 of Fig. 2;

Fig. 4, a bottom plan view taken from the standpoint of Fig. 2;

Fig. 5, a view substantially corresponding to that of Fig. 2, but showing a different arrangement for chalking the line;

Fig. 6, a vertical section taken on the line 6—6 of Fig. 5;

Fig. 7, a similar section taken on the line 7—7 of Fig. 5;

Fig. 8, a bottom plan view taken from the standpoint of Fig. 5; and

Fig. 9, a horizontal section taken on the line 9—9 of Fig. 5.

Referring to the drawing:

The embodiment of Figs. 1 through 4 is equipped with a chalk line device utilizing powdered chalk packed about the line, while the embodiment of Figs. 5 through 9 is equipped with a chalk line device employing a solid stick of chalk for chalking the line as it is payed out.

In the particular preferred form illustrated, the embodiment of Fig. 1 comprises a tubular, telescopic rod 10 made up of a base section 10*a* at one end of the rod, forming a handle therefor, and a terminal section 10*b* at the opposite or freely extensible end of the rod, with intermediate sections 10*c* being provided in number depending upon the desired over-all length of the rod, such sections being slideably interfitted for telescopic movement relative to one another.

Since it is necessary in the use of the device that the rod 10, when extended, be rigid and without tendency to bow, I have found it advantageous to make the tubular sections 10*a*, 10*b*, and 10*c* of the rod polygonal in cross section, advantageously square or rectangular, as shown, and of suitable rigid material, such as steel or plastic tubing of sufficient wall thickness for the purpose, the wall thickness in any given instance depending largely upon the over-all length of the rod when extended.

Attached to the forward end of the base or handle section 10*a* of the telescopic rod 10 is a chalk line device 11. Such device 11 is preferably attached at one side of such base or handle section 10*a*, so as to project laterally of the rod a sufficient distance to keep the chalk line well spaced from the body of the section 10*a*, serves to tightly attach the device 11 to the rod.

In the particular form shown, the chalk line device 11 comprises a reel 13 fixed on a rotatable shaft 14 within one side of closed compartment 15, Fig. 3, of an enclosing casing 16. A spiral spring 17 is mounted on an opposite portion of the shaft 14 within a separate closed compartment 18 of the casing 16. The inner end of such spring 17 is fixed to the shaft 14, while the outer end thereof is fixed, as by means of a rivet 19, to one of the defining walls of the casing. Thus, the reel 13 is adapted to be rewound automatically, following any paying out of the chalk line 20 coiled thereon.

In addition to the closed compartmentation of the interior of the casing 16, whereby the reel is separated from the reel-actuating spring, so that powdered chalk may be packed around the reel without interfering with the action of the spring, the casing 16 is preferably formed with a tapered line-emitting portion 16*a* provided with a restricted passage 21, of diameter only slightly greater than the diameter of the chalk line 20, whereby such chalk line is guided during paying out and reeling in, and the powdered chalk 22, packed within the reel chamber 15, is effectively retained within such chamber, except insofar as particles thereof cling to the surface of the line as it is payed out through the passage 21. As an additional means for preventing loss of powdered chalk from the compartment 15, packing material 23, Fig. 2, of felt or the like is advantageously placed at the inside entrance to the line-emitting passage 21, so that the line passes therethrough as it is payed out.

For the purpose of facilitating the paying out and reeling in of the chalk line 20, and to prevent fraying thereof during these operations, those portions of the casing walls which define the passage 21, and over which the line passes, are preferably turned back, as in the instance of the line-emitting lip 16*b* and the opposite wall terminus 16*c*, Fig. 2, or other suitable means for the purpose are provided.

In order to place the chalk line, as payed out, at a suitable distance from the rod 10 to enable it to properly perform its marking function, an arm 24 is provided at the free terminus of the terminal section 10*b* thereof, such arm advantageously projecting laterally of the rod a distance substantially equal to the distance over which the chalk line device 11 extends from the extended rod. This means that the rod can then be effectively employed as a measure or rule in determining the length of the chalk line payed out, and, consequently, the length of the line to be marked on the surface concerned.

For this latter function, one or more of the outer surfaces—preferably the upper and side surfaces—of each of the intermediate sections 10*c* and of the terminal section 10*b* of the telescopic rod 10 are marked with measurement graduations 26, providing a scale representative of distance from a zero point of reference 27, which is coincident with the extended end 20*a* of the chalk line, to a second reference point 28, which is coincident with the point of emergence, see 20*b*, Fig. 1, of the line from the device 11. Thus, any distance, short or long, within the capacity of the telescopic rod 10, may be exactly measured as the rod is extended for use. Obviously, the scale graduations may be applied in any other suitable manner to or in connection with the telescopic rod.

A convenient way of attaching the free end of the line 20 to the arm 24 is provided by a hook 24*a*. The free end of the line need merely be tied in a loop, and hooked in place.

The embodiment of Figs. 5 through 9 is essentially similar in structure and function to the previously described embodiment, the only changes made being those necessitated by the use of a rigid stick of chalk instead of a loose mass of powdered chalk.

The telescopic rod may be identical with the previously described rod 10. It is here designated by the numeral 30.

The chalk line device, here indicated 31, comprises an enclosing casing 32, which, in this instance, need not be and is not shown as compartmented. The reel 33 and spring 34 are mounted side by side on a common rotatable shaft 35 without any partition walls between them.

As in the previously described embodiment, the casing is here shown as provided with a tapered, line-emitting portion, indicated 32*a*. This is a convenient construction where the casing is molded or pressed into shape, and, in this instance, affords an advantageous mounting for a small pulley 36 which is journaled within the line-emitting passage or opening 37 of the casing for the purpose of guiding and protecting the line here indicated 38 in its passage out of and its return into the casing.

As an auxiliary portion of the casing 32, placed immediately forwardly thereof, a tubular retainer 39 for a stick of chalk 40 is provided. Its open lower end lies directly within the path of emergence of the line 38 from the casing 32, so that, as the line is payed out, the stick of chalk 40 is forcibly pressed against the line under the urging of a spring 41.

It is preferable that the open end of the tubular casing 39 be grooved as at 42, Fig. 7, to accommodate the line 38 in its traversal of the chalk 40. As an additional guide and means for preventing fraying of the line, a second pulley 43 is journaled between a pair of ears 44 projecting forwardly from the tubular retainer 39 at the open end thereof, and serves as a line-emitting lip corresponding to the lip 16*b* of the first embodiment. Such pulley 43 is aligned with the pulley 36 and with the groove 42, thereby providing for smooth and substantially frictionless travel of the line, except for the actual chalking operation.

As in the previously described embodiment, an arm, here indicated 45, is provided at the free end of the terminal or extensible section of the telescopic rod 30, but, in this instance, the inner face of such arm is recessed, as at 46, Fig. 5, for the purpose of accommodating the pulley 43 and ears 44 in nesting fashion when the rod 30 is completely retracted, thereby placing the effective terminus 38*a* of the chalk line contiguous to the chalk 40 in such completely retracted position. This insures chalking of the line over the complete extent of its effective length upon each use of the device.

It should be particularly noted that in both embodiments, the line-emitting lip is disposed in substantial registry with that end of the rod base section from which the rod is extended, and,

furthermore, is spaced laterally of the rod so that it may be accurately positioned relative to the work against which the chalk line is to be applied.

Whereas this invention is here illustrated and described with respect to certain preferred embodiments thereof, it should be understood that various changes may be made without departing from the scope of the following claims.

I claim:

1. Apparatus of the nature described, comprising the combination with a self-chalking chalk line device having a line-emitting lip substantially coincident with one side of the device, of a telescopic rod having its base section formed as a handle to which said chalk line is attached so that its said one side is spaced laterally of the rod and its said line-emitting lip lies in substantial registry with that end of said base section from which said rod is extended; and means at the free terminus of the terminal section of said rod for holding the free end of said chalk line.

2. The combination defined in claim 1, wherein the telescopic rod is polygonal in cross-section.

3. The combination defined in claim 1, wherein the telescopic rod is marked longitudinally with a distance scale, as a measurement rule.

4. A chalk line device of the nature described, comprising in combination, a reel containing a chalk line; means for actuating the reel; a casing in which said reel and said actuating means are housed, said casing having a line-emitting portion tapered to a lip; means immediately in advance of said lip, for applying chalk to said chalk line; a telescopic rod, to the base section of which

said casing is attached with its line-emitting portion projecting outwardly remote from said rod and with its lip in substantial registry with that end of said base section from which the rod is extended; and an arm attached to said rod at the free terminus of the terminal section thereof and projecting outwardly into substantial alignment with said line-emitting lip, the free end of said chalk line being attached to said arm, so that the amount of line payed out is substantially identical in length with any given extended portion of the telescopic rod.

5. The combination defined in claim 4, wherein the chalk-applying means comprises a receptacle for chalk, said receptacle having walls defining a chalking orifice immediately in advance of the line-emitting portion of the reel casing; wherein guide means for the chalk line is disposed immediately in advance of said chalking orifice; and wherein the arm to which the free end of said chalk line is attached is contoured to receive said guide means in nesting fashion when the telescopic rod is completely retracted.

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