April 8, 1952 P. D. MACRIPO 2,591,844

STRIP HOLDER

Filed Feb. 3, 1950

FIG. 1.

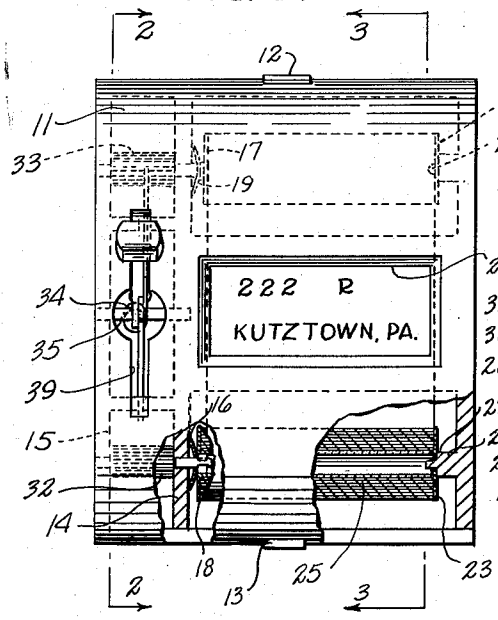


FIG. 2.

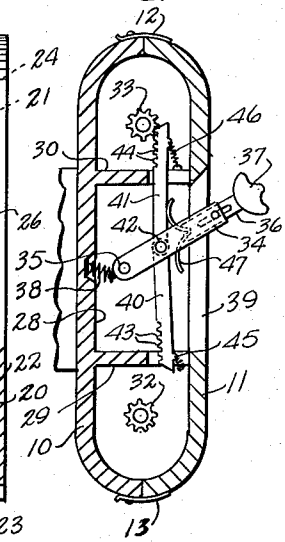


FIG. 3.

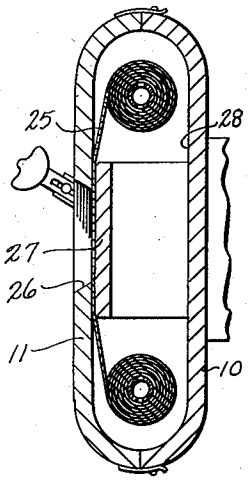


FIG. 5.

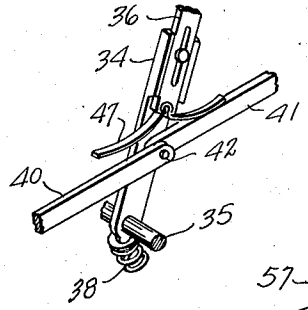


FIG. 4.

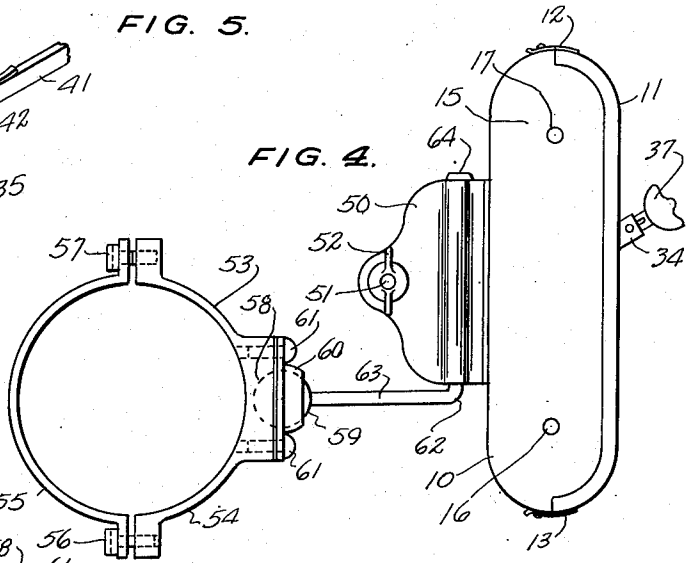
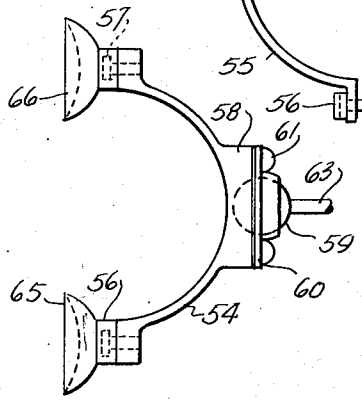


FIG. 6.



INVENTOR.
PETER D. MACRIPO,
BY
McMorrow, Berman & Davidson
ATTORNEYS.

Patented Apr. 8, 1952 2,591,844

UNITED STATES PATENT OFFICE

2,591,844

STRIP HOLDER

Peter D. Macripo, Allentown, Pa.

Application February 3, 1950, Serial No. 142,209

3 Claims. (Cl. 40—86)

1

This invention relates to strip holders and more particularly to a device for holding and moving a rolled strip having information thereon such as route information, time schedule information or other information divided into items to be successively observed.

It is among the objects of the invention to provide a strip holding and moving device which can be detachably and adjustably mounted on a support, such as a vehicle steering column or instrument board, with no modification of the supporting structure, which is particularly arranged to facilitate the replacement of strips therein, which is effective to move the strip in a step by step manner in either direction by operation of a single toggle lever, and which is simple and durable in construction, economical to manufacture, easy to operate, and neat and attractive in appearance.

Other objects and advantages will become apparent from a consideration of the following description and the appended claims in conjunction with the accompanying drawing, wherein:

Figure 1 is a front elevation of a strip holding and moving device illustrative of the invention, parts being broken away and shown in cross section to better illustrate the construction of the device;

Figure 2 is a cross sectional view on the line 2—2 of Figure 1;

Figure 3 is a cross sectional view on the line 3—3 of Figure 1;

Figure 4 is a side elevation of the strip holding and moving device and a supporting bracket therefore;

Figure 5 is a perspective view of a fragmentary portion of the operating mechanism of the device showing structural details thereof; and

Figure 6 is a side elevation of a modified form of bracket for supporting the device.

With continued reference to the drawing, the strip holding device comprises an elongated, hollow housing 10 of generally rectangular shape and having an open side and a cover 11, also of elongated, generally rectangular shape releasably secured to the housing by suitable means, such as the clips 12 and 13 to cover the open side of the housing. The housing 10 and cover 11 are formed of a suitable moldable material, such as a synthetic resin plastic, hard rubber or metal, and when operatively assembled, provide a hollow body of elongated rectangular shape having substantially semicylindrical ends and having a length greater than its width and a width greater than its thickness.

2

A longitudinally extending partition 14 is provided in the housing 10 adjacent the side wall 15 of the housing and the partition 14 and side wall 15 are provided with registering apertures in which are journaled two shafts 16 and 17 which extend transversely across the space between the side wall 15 and the partition 14 near respectively opposite ends of the housing.

Spring washers 18 and 19 surround the shafts 16 and 17 respectively at the inner side of the partition 14 and each of the shafts 16 and 17 terminates adjacent the inner side of the corresponding spring washer and is provided with a through pin or similar torque transmitting structure at the inner side of the corresponding washer. Two pins 20 and 21 are carried by the side wall 22 of the housing opposite the side wall 15 and two spools 23 and 24, such as the metal spools ordinarily used to carry photographic film, are rotatably mounted in the housing one between the pin 20 and the shaft 16 and the other between the pin 21 and the shaft 17. The through pins are lug formations on the shafts 16 and 17 engaged in notches provided in the ends of the spools 23 and 24 to drivingly connect the spools to the shafts so that the spools will be rotated when the shafts are driven.

An elongated strip 25 of suitable material, such as paper, is wound on the spools 23 and 24 and is movable from one spool to the other when both spools are rotated in the same relative direction, the strip being movable in either direction depending upon the common direction of rotation of the two spools.

A rectangular opening or window 26 is provided in the cover 11 through which window the strip 25 may be viewed and a table 27 having an area somewhat greater than that of the window opening 26 is supported from the back wall 28 of the housing by the ribs 29 and 30 disposed at respectively opposite ends of the table. The outer surface of this table overlaps the inner surface of the wall of the cover surrounding the window opening 26 and is spaced from the inner surface of the cover wall a distance slightly greater than the thickness of the material of the strip 25. This table supports the strip in position substantially in the plane of the inner side of the window opening 26 so that the strip can be conveniently viewed and also provides a writing surface under the strip so that information can be written on the strip while the strip is mounted in the holder.

The information provided on the strip may relate to different successive stations along a

route to be followed by an automotive vehicle and may be obtained from a road map, from memory or by observation of a person following the route for use on a return trip or for the benefit of a person unfamiliar with the route.

An elongated drive gear 32 is secured on the shaft 16 between the partition 14 and the housing side wall 15 and a similar elongated drive gear 33 is secured on the shaft 17 between the partition 14 and the side wall 15.

A toggle lever 34 is pivotally connected at one end to the housing 10 at a location which is disposed substantially midway between the partition 14 and side wall 15 and substantially midway between the two drive gears 32 and 33. The pivotal connection between the toggle lever and the housing may be conveniently provided by a pivot pin 35 which extends through registering apertures in the side wall 15, the partition 14 and the lever 34. An extension 36 is adjustably connected to the lever 34 at the distal end of the latter and a thumb button or knob 37 is carried on the distal end of the extension 36.

A toggle spring 38 is disposed between the back wall 28 of the housing and the adjacent end of the toggle lever 34 to resiliently maintain the toggle lever in either of two ranges of operative movement disposed at respectively opposides of the midpoint of the total range of movement of the toggle lever.

The cover 11 is provided with an elongated slot 39 through which the toggle lever 34 extends and two rack bars 40 and 41 are pivotally connected at their adjoining ends to the toggle lever 34 at a location spaced from the pivot pin 35 by a pivot pin 42 which extends through registering apertures in the two rack bars and the toggle lever. The rack bars 40 and 41 extend in opposite directions from the toggle lever 34 toward the drive gears 32 and 33 respectively and the bar 40 has rack teeth 43 engageable with the teeth of the gear 32 while the rack bar 41 has rack teeth 44 engageable with the teeth of the drive gear 33.

Tension springs 45 and 46 are connected between the ribs 29 and 30 and the rack bars 40 and 41 respectively to resiliently urge the toggle lever 34 to its neutral position in either of the two ranges of operative movement in which the toggle lever is resiliently maintained by the toggle spring 38.

A leaf spring 47 is secured at its mid-length location to the toggle lever 34 at the side of the rack bars opposite the pivot pin 35 and has one end portion overlying the rack bar 40 and its other end portion overlying the rack bar 41.

When the toggle lever is manually moved from its neutral position in either one of its two ranges of operative movement, the corresponding end portion of the leaf spring 47 is brought to bear on the upper or outer edge of the associated rack bar 40 or 41 forcing the rack bar toward the corresponding drive gear and engaging the rack bar teeth with the teeth of the drive gear while the rack bar is moved longitudinally by the toggle lever thereby rotating the corresponding drive gear and turning the associated spool 23 or 24. Each movement of the toggle lever in one of its ranges of operative movement is effective to advance the strip 25 one step in the corresponding direction, while each movement of the toggle lever in its other range of operative movement is effective to move the strip 25 one step in the opposite direction.

A clamp structure 50 is secured to the back wall 28 of the housing at the outer side of the back wall and comprises two spaced apart lugs which project substantially perpendicularly from the back wall of the housing. These lugs are provided near their ends remote from the housing with registering apertures which receive a screw or bolt 51 having a wing nut 52 threaded thereon for pressing the lugs together to clamp a supporting arm therebetween.

In the arrangement illustrated in Figure 4, a split clamp ring 53 is provided having two semicylindrical parts 54 and 55 each of which is provided at its opposite ends with outwardly extending, apertured lugs. The split ring is dimensioned to fit closely about the steering column of an automotive vehicle and screw 56 and 57 engaged in the lugs at diametrically opposite sides of the ring are effective to clamp the ring upon a vehicle steering column. The part 54 of the ring carries substantially at its mid-length location a socket formation 58 having therein a substantially hemispherical cavity. A ball 59 is disposed in the cavity 58 and retained therein by a cap plate 60 secured to the socket formation 58 by suitable means, such as the screws 61. An angle bracket 62 has two arms 63 and 64 disposed substantially at right angles to each other and the outer end of the arm 63 is secured to the ball 59 while the arm 64 is clamped between the two lugs of the clamp structure 50 secured to the housing 10. The mounting structure illustrated in Figure 4 is thus effective to adjustably support the strip holder on the steering column of an automotive vehicle or on a corresponding supporting structure.

In the modified arrangement shown in Figure 6 the clamp ring part 55 is discarded and two rubber suction cups 65 and 66 are secured respectively to the lugs at the opposite ends of the ring part 54 by the screws 56 and 57.

The suction cups 65 and 66 will attach the mounting device to a smooth surface, such as the surface of the instrument board or windshield of an automotive vehicle for adjustably supporting the strip holder in a position convenient to the operator of the vehicle.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are, therefore, intended to be embraced therein.

What is claimed is:

1. A strip holding and moving device comprising an elongated hollow housing having an open side, a cover detachably mounted on said housing to cover the open side of the latter, a pair of strip receiving spools disposed in said housing one at each end thereof, means releasably securing said spools in said housing for rotation about their individual axes, a drive gear drivingly connected with the mounting means of each spool, both drive gears being disposed at the same side of said housing, a toggle lever pivoted near one end on said housing between said drive gears, said cover having a slot therein through which said toggle lever extends, two rack bars pivotally connected at adjoining ends to said lever and extending in opposite directions from the latter so that one rack bar ex-

tends over one drive gear and the other rack bar extends over the other drive gear, a toggle spring disposed between said lever and said housing resiliently holding said lever in either one of two ranges of operative movement disposed at respectively opposite sides of the mid point of the total range of movement of said lever, springs connected between said rack bars and said housing resiliently urging said lever to its neutral position in each range of operative movement, and spring means connected between said lever and said rack bars for engaging either of said rack bars with the associated drive gear when said lever is manually moved from its neutral position in the corresponding range of operative movement of the lever to thereby advance a spool carried strip in the corresponding direction.

2. A strip holder comprising an elongated hollow housing having an open side, a cover covering the open side of said housing and having a window opening therein, a table carried by said housing within said cover at said window opening, a pair of spools rotatably mounted in said housing, one at each end of the latter, a strip carried by said spools and extending over said table and across said window opening, a toggle lever pivotally mounted on said housing between said spools and having two ranges of operative movement, and means connected to said lever and drivingly engaging one of said spools when said toggle lever is in one range of operative movement and drivingly engaging the other spool when the toggle lever is in the other range of operative movement to rotate said spools in opposite directions in accordance with the two ranges of operative movement of said lever to advance said strip in one direction when said

lever is moved in one of said ranges of operative movement and in the opposite direction when said lever is moved in the other of said ranges of operative movement.

3. A strip holder comprising an elongated hollow housing, a pair of spools rotatably mounted in said housing one at each end of the latter, a toggle lever pivotally mounted on said housing between said spools and having two ranges of operative movement, means connected to said lever and drivingly engaging one of said spools when said toggle lever is in one range of operative movement and drivingly engaging the other spool when the toggle lever is in its other range of operative movement to rotate said spools in opposite directions in accordance with the two ranges of operative movement of said lever, and spring means disposed between said housing and said toggle lever resiliently maintaining said toggle lever in either of said ranges of operative movement to which said toggle lever is manually moved.

PETER D. MACRIPO.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,312,445	Johnson	Aug. 5, 1919
1,667,967	Grimmins	May 1, 1928
2,175,926	Smith	Oct. 10, 1939
2,506,113	Sorrells	May 2, 1950

FOREIGN PATENTS

Number	Country	Date
112,834	Australia	Mar. 29, 1940