Oct. 7, 1930. L. A. SPRINGER 1,777,585

DISAPPEARING SAFETY TRAFFIC BUTTON

Filed June 6, 1928

Fig. 1.

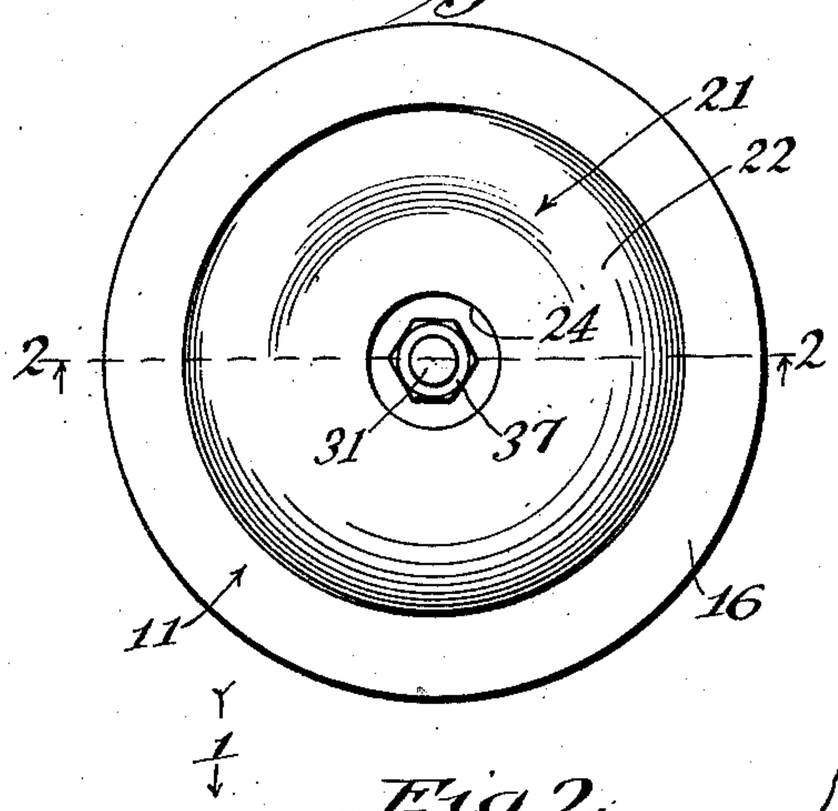


Fig. 4.

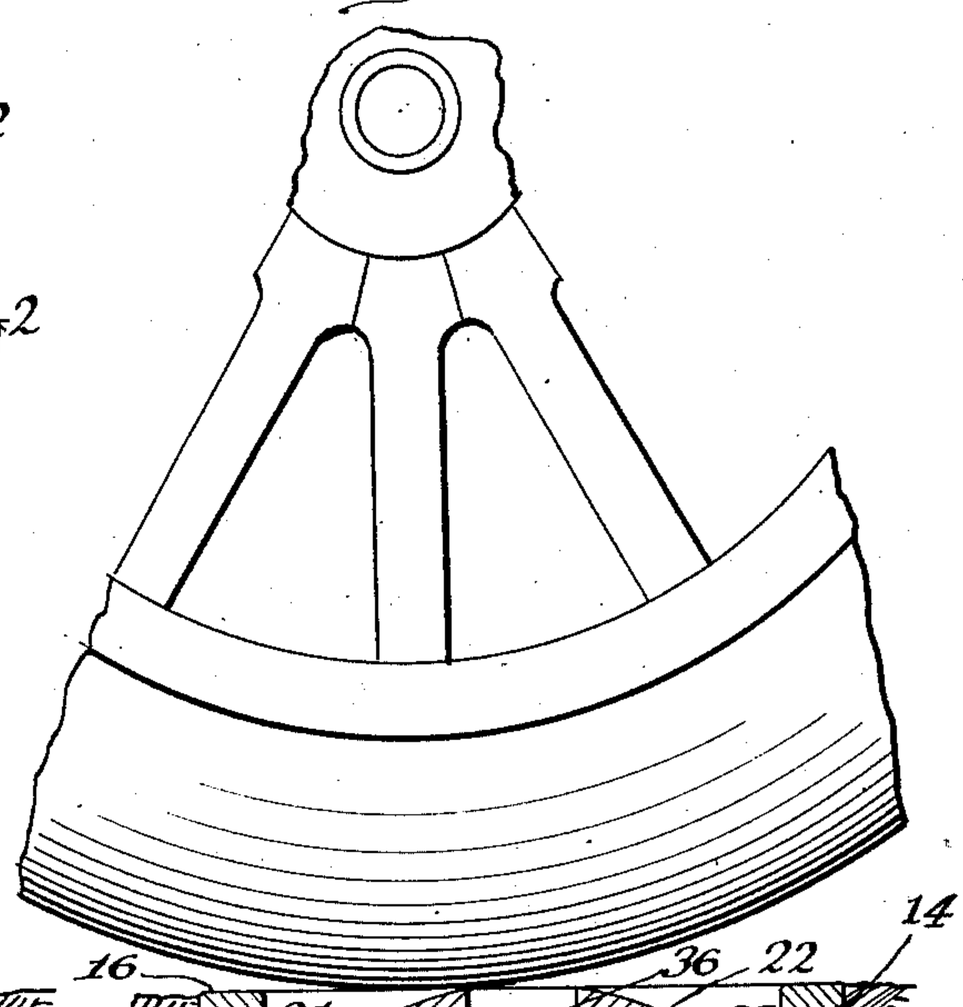
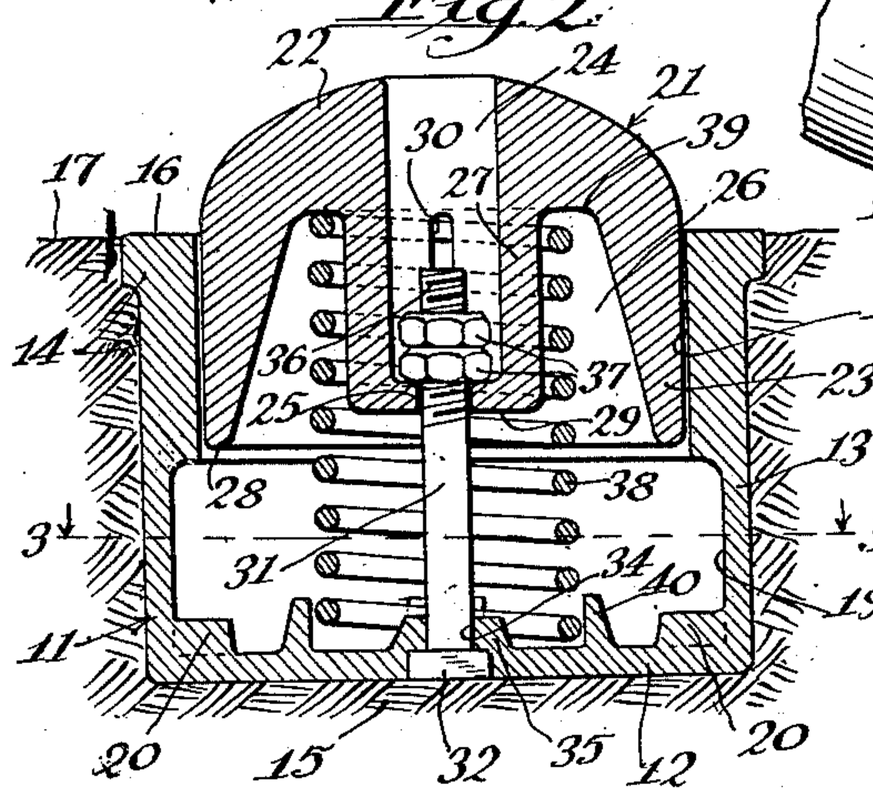


Fig. 2.



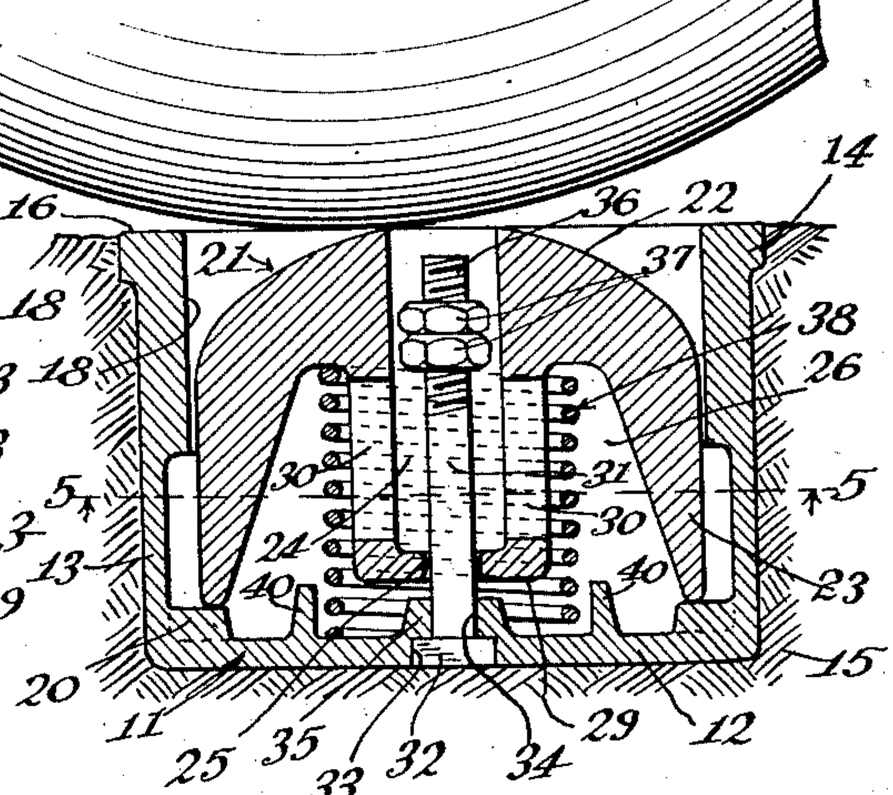


Fig. 3.

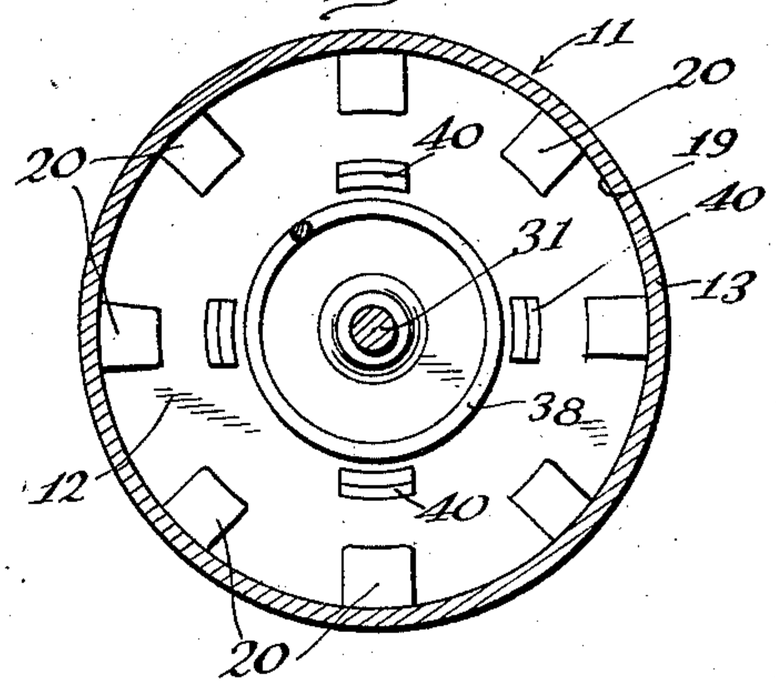
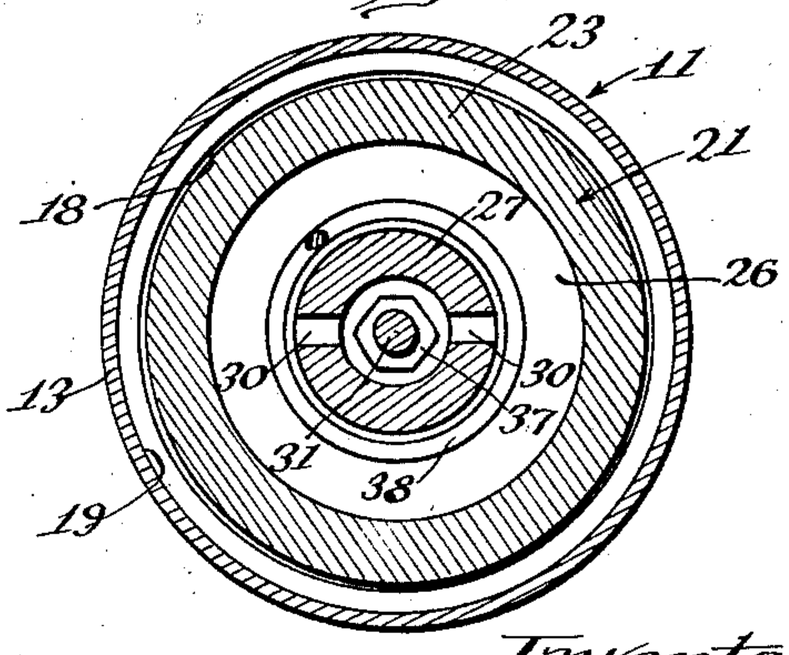


Fig. 5.



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UNITED STATES PATENT OFFICE

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DISAPPEARING SAFETY TRAFFIC BUTTON

Application filed June 6, 1928. Serial No. 283,412.

My invention pertains to a disappearing safety traffic button.

Considerable objections are had to the traffic buttons used by various municipalities in their roadways as an indication or direction for the movement of vehicle traffic. These permanently raised buttons above the road level have been the cause of many serious accidents due to the vehicles striking the buttons and being thrown off their course. In addition to this there have been many complaints and a great deal of damage done to pneumatic tires due to the vehicles striking the solid button extending above the roadway and causing tire bruises.

An object of my invention is the construction of a disappearing and a safety traffic button which will have all the effectiveness of a button raised above the road level to indicate the line of travel and turning of vehicles and yet when struck by a vehicle will disappear; that is, be pressed downwardly below the road level allowing the vehicle to pass without throwing it off its course and without injury to the tires.

A more detailed object of my invention is the construction of a traffic button which is resiliently supported so that in a normal position it projects above the road level and mounted so that when a vehicle wheel strikes the button the button will be depressed and give a support for the vehicle in rolling over the button without a sufficient jolt to affect the steering of the vehicle or to injure the tires.

A still further object of my invention is a construction by which the button may be adjusted to project different distances above the road level and to provide a mounting so that when fully pressed down the button will have a rigid support allowing it to carry a heavy vehicle without injury.

In constructing my invention I utilize an outer casing or housing formed with side walls and a base and open at the top, this being adapted to be positioned in a roadway in a hole made therein and firmly secured in position. A dome-shaped button is fitted in the housing so as to telescope therein and is supported by a spring normally maintaining the button elevated. The button is maintained at the desired elevation through the medium of a stud secured to the base and having adjusting nuts which engage in a socket in the button, thus allowing the button to project different distances above the roadway. I also provide slots leading from the socket into the hollow housing to allow free flow of air in the up and down movement of the button and for the free passage of water when the housing becomes filled with water during the rain storms.

My invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a plan view of the button and housing taken in the direction of the arrow 1 of Fig. 2,

Fig. 2 is a cross section on the line 2—2 of Fig. 1 in the direction of the arrows, with the button elevated,

Fig. 3 is a horizontal section through the housing on the line 3—3 of Fig. 2 in the direction of the arrows,

Fig. 4 is a section similar to Fig. 2 showing the button depressed by a vehicle wheel passing thereover,

Fig. 5 is a horizontal section on the line 5—5 of Fig. 4 in the direction of the arrows.

In the construction illustrated the housing is designated generally by the numeral 11 preferably having a flat base 12 and cylindrical side walls 13, the side walls having a slight rim 14 adjacent the top. The housing is buried in the roadway designated 15 with the upper surface 16 in alignment with the road surface 17. Internally the button has an upper bore 18 preferably cylindrical and a larger bore or cored out section 19 adjacent the bottom, with a series of bosses 20 spaced peripherally on the base.

The button designated generally by the numeral 21 has a head portion 22 preferably domed and with side walls 23 having an outer cylindrical surface. A socket 24 is formed in the button, this being open at the top and having a perforation 25 at the bottom. There is an annular cored out portion 26 between the side walls and the hub structure 27 forming the socket. The bottom edge 28 of the side walls extends downwardly below the

bottom of the base 29 of the socket. There are a pair of slots 30 extending through the hub structure forming the socket into the annular cored out portion 26.

A stud 31 has its head 32 fitted in a recess 33 in the base, the stud extending through an aperture 34 in a boss 35 extending upwardly from the base. The upper end of the stud is screw threaded as indicated at 36 and has a nut and a lock nut 37 threaded thereon. The stud extends through the perforation in the base of the socket, this having a loose fit, and the nut is adapted to engage the upper surface of the base portion 29 of the hub structure forming a socket.

A coil spring 38 fits on the base 12 and engages the under surface 39 of the head portion 22 of the button, this spring extending up into the cored out portion 26. The spring is maintained centered by a series of lugs 40 on the base 12.

The manner of operation and functioning of my invention is as follows: It will be apparent that the spring normally tends to elevate the button structure and thrust it upwardly in the housing. The upward movement, however, is limited and adjustable through the medium of the stud 31 and the adjustable nut and lock nut thereon. The top of the stud is positioned below the road surface. Thereby, by this construction, and using a suitable socket wrench, the position of the button relative to the road surface may be readily adjusted so that this may be only slightly above the road surface if desired or may be elevated to a considerable extent.

If a vehicle wheel strikes the button as indicated in Fig. 4 it is depressed, compressing the spring 38 so that the lower edge 28 of the side walls 23 of the button strike the top of the bosses 20, thus giving the button a rigid support when fully depressed. There is sufficient space between the side wall of the button and the upper bore 18 of the housing to allow free flow of air in the up and down movement of the button, and also air may pass through the perforation 25 in the base of the socket. To accommodate the flow of water, however, when the housing becomes filled with water during rain storms, I provide the slots 30 communicating between the socket 24 and the cored out portion 26 of the button, thus allowing free in and out flow of the water trapped in the button.

It will be seen by the above description together with the drawings that I have developed a traffic button which has all the effectiveness of a permanent raised button above the road surface and indicating the line of traffic movement and of traffic turns for vehicles and, yet, when the button is struck or run over by a vehicle wheel it is depressed below the road surface so that the vehicle is not thrown off its path of travel and so that the tires are not injured.

It will be noted by my construction that if the spring 38 breaks the button will drop until it rests in its lowermost position and hence does not form an obstruction of traffic, but supports the vehicle passing thereover. My form of traffic button also is readily replaced and cleaned as by removing the nuts 37 the button may be taken out of the housing and this latter cleaned out. If the housing is not badly filled with dirt this may be cleaned out by the use of a hose injecting the water in the open socket 24 and working the button up and down allows the water to flow through the lateral slots 30 and flush out the housing.

An important feature of my invention is that the telescoping button 21 may be inserted from the top of the roadway into the upper bore 18 of the housing 15 and that after insertion of the button it may be secured in place by threading the nuts 37 on the stud 31. Therefore to install and to remove the button it is not necessary to dig the housing out of the roadway.

The button and the upper bore 18 may be given a sufficient sliding fit so that but little dirt will enter between the button and this surface. The free passage of air on the telescoping of the button, is however, accommodated by the slots 30 in the socket portion 24 of the button. These slots also allow the free discharge of water which may enter the housing in a rain storm or in flushing the roads and that the moving traffic moving over the button automatically keeps the housing clean.

Various changes may be made in the principles of my invention without departing from the spirit thereof, as set forth in the description, drawings and claims.

I claim:

1. In combination an open-topped housing adapted to be installed in a roadway, a traffic button slidably mounted therein, a compression spring supporting the button, and a stud connected to the housing and to the button to adjust the height of the button.

2. In combination an open-topped housing adapted to be installed in a roadway, a traffic button slidably mounted therein, a spring bearing on the base of the housing and supporting the button, a stud secured to the housing and having an adjustable connection with the button to vary the height of the button above the roadway, and interengaging means between the button and the housing to take the pressure of the button when depressed by a vehicle.

3. In combination an open-topped housing adapted to be installed in a roadway, a traffic button slidably mounted therein, means to resiliently support the button in an upper position, the button having a socket, and a stud secured to the base of the housing

and extending into said socket with an adjustable connection therein.

4. In combination an open-topped housing as claimed in claim 3, the button having openings from the socket and connecting with the interior of the housing.

5. In combination an open-topped housing having a base with a stud extending upwardly therefrom, a traffic button having a dome-shaped top and side walls, the side walls being slidably mounted in the upper part of the housing, there being a central socket, the stud extending into the said socket and having adjusting nuts thereon to engage the base of the socket, and a compression spring between the button and the base of the housing.

6. In combination an open-topped housing as claimed in claim 5, the base having a supporting structure adapted to contact with the lower edge of the side walls of the button to rigidly support the button when depressed by a vehicle.

7. In combination an open-topped housing as claimed in claim 5, the button having an annular cored-out portion with a spring fitted therein, and passages between the socket and the cored-out portion.

8. A traffic button having an open-topped housing adapted to be installed in a roadway and having a series of bosses adjacent the bottom, a stud secured to the base and extending upwardly and having adjusting nuts on the top, a traffic button having a dome-shaped top, side walls to conform to the upper inside surface of the housing and having a sliding fit, the button having a socket in the center from the top and an annular cored-out portion extending upwardly from the bottom, there being an opening into the socket for the said stud, and a spring bearing on the base of the housing and engaging the button, the said bosses forming a supporting structure engaging the lower edge of the side wall of the button when depressed by a vehicle.

9. A traffic button as claimed in claim 8, there being passages from the interior of the housing to the outer portion of the button to allow free flow of air and water contained in the housing.

10. In a device as described, an open top housing adapted to be installed in a roadway, a traffic button slidably mounted therein, a resilient support for the button, and means operable from the surface of the roadway without removing the housing, to secure the button in the housing.

11. In a device as described, an open top housing adapted to be installed in a roadway, a traffic button slidably mounted therein, a resilient support for the button and means operable from the surface of the roadway without removing the housing and interconnecting the housing and the button to retain the button in the housing and to adjust the upward lift of the button.

12. In a device as described, the combination of an open top housing adapted to be installed in a roadway, a traffic button slidably mounted therein and having a resilient support, means to retain the button in the housing and said button having passages to allow free flow of air and water from and to the interior of the housing on depression and elevation of the button.

13. In a device as described, the combination of an open top housing adapted to be installed in a roadway, a traffic button slidably mounted therein and having a resilient support, means interconnecting the button and the housing to retain the button in the housing, said means being engageable to the button from the surface of the roadway without removing the housing, and means operable through the body structure of the button to allow free flow of air and water from and to the interior of the housing on the depression and elevation of the button.

14. In combination an open top housing adapted to be installed in a roadway, a traffic button slidably mounted therein, said button having a passage to allow free flow of air and water to and from the interior of the housing on elevation and depression of the button.

15. In combination an open top housing adapted to be installed in a roadway, a traffic button slidably mounted therein and having a resilient support, means to adjust the height of the button above the level of the roadway, said button having a passage to allow free flow of air and water from and to the interior of the housing on the depression and elevation of the button.

In testimony whereof I have signed my name to this specification.

L. A. SPRINGER.