March 6, 1928.

1,661,446

J. RANK ET AL

TRAFFIC SIGNAL

Filed April 23, 1926

Fig. 1

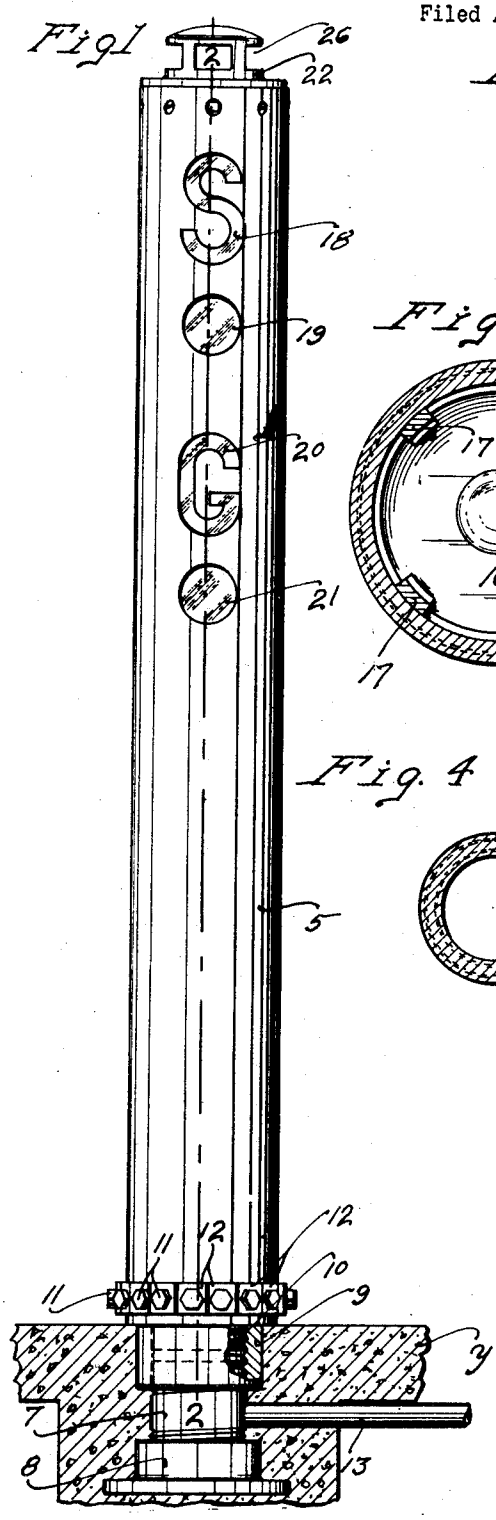


Fig. 2

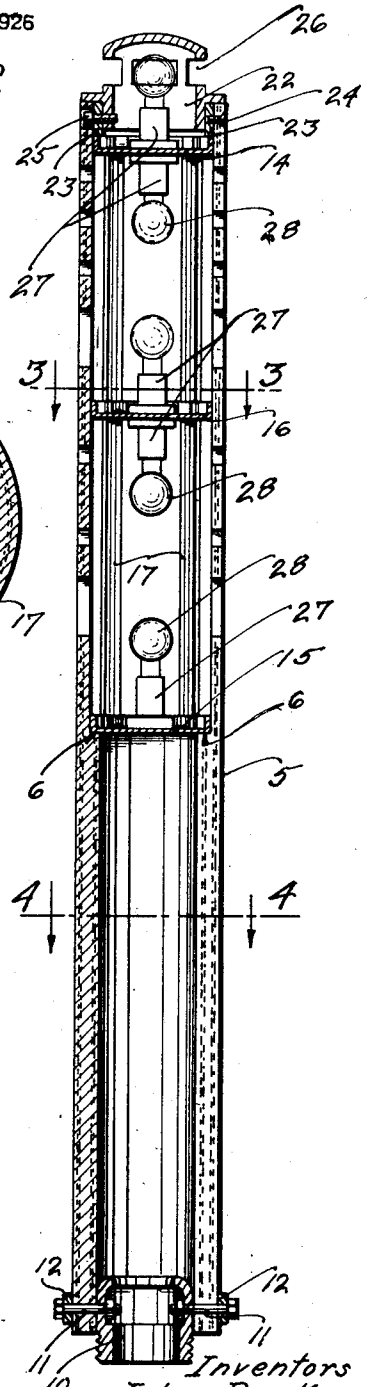


Fig. 3

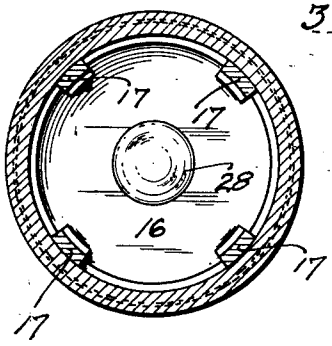
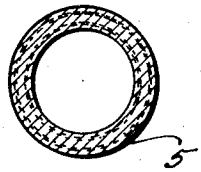


Fig. 4



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UNITED STATES PATENT OFFICE.

JOHN RANK AND HENRY W. RANK, OF MINNEAPOLIS, MINNESOTA.

TRAFFIC SIGNAL.

Application filed April 23, 1926. Serial No. 104,061.

Our present invention relates to traffic signals of the signal post type and especially to that type of signal post disclosed and claimed in our prior application Serial No. 54,240, filed September 3, 1925. The chief objects of the present invention are high efficiency, durability, ability to stand violent shocks, simplicity of construction and reasonably low production cost.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 shows the improved signal post in elevation, some parts being broken away;

Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged horizontal section on the line 3—3 of Fig. 2; and

Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 2.

The invention is capable of modifications, but in the preferred form illustrated in the drawings, the body of the signal post is formed by a heavy elastic tube or casing 5. This tubular body is made of rubber but preferably reinforced with fabric, much like the outer casing of a pneumatic tire, and it is of such stiffness that it will maintain itself normally in straight form. Preferably, the tube is a true cylinder, but it may be varied considerably in form. The lower portion of this tube, as shown, is much thicker than the upper portion, and at the junction of the relatively thick and thin portions, there is a stop shoulder or ledge 6. Said tube, at its lower end, is anchored to the road bed or pavement y and, as illustrated, this is accomplished by substantially the form of anchoring device described and claimed in our pending application Serial No. 63,995, filed October 21, 1925, and which anchoring device comprises an anchoring tube 7 threaded at both ends, the lower end thereof being screwed into a flanged anchoring base 8 and the upper end thereof being screwed into a pipe coupling 9.

The numeral 10 indicates a coupling sleeve that is telescoped into the lower end of the tubular body or casing 5 and is clamped thereto by nut-equipped bolts 11. The bolts 11 are circumferentially spaced and, as shown, square washers 12 are interposed between the heads of the bolts and the casing 5. These washers 12 are so assembled that, when the nuts on the bolts are tightened, a substantially continuous but sectional clamping ring is provided around the lower end of the casing. The numeral 13 indicates a wire conduit or pipe that leads into the anchoring base from a suitable distant point. The parts 7, 8, 9 and 13 are embedded in the concrete of the road bed y. With this arrangement, the post, as shown in Fig. 2, may be removed as an entirety from the base and applied as an entirety thereto. However, so far as the present invention is concerned, the post may be anchored at its lower end by any suitable anchoring means.

That portion of the tubular casing 5 that is above the shoulder 6 is adapted to contain the signal devices and to have light-emitting passages therein for signal purposes, and it is reinforced and stiffened by a metallic stiffening and reinforcing shell that is preferably in the form of a skeleton. This skeleton, as shown and preferably designed, is made of upper, lower and intermediate flanged metal spacing plates 14, 15 and 16, and circumferentially spaced longitudinally extended metal bars or slats 17 that are rigidly secured to the said spacing plates by rivets, spot-welding or otherwise, so that the skeleton reinforcing shell may be applied or removed as an entirety. This reinforcing skeleton or shell quite closely fits the interior of the upper or relatively thin-walled portion of the casing, and when inserted, its lower plate 15 will rest on the shoulder 6 thereof. Obviously, this reinforcing skeleton, when inserted into the tube, stiffens and holds the upper portion thereof, but does not interfere with the resilience or elasticity of the lower portion, and the lower portion of said tube, to wit: that portion that is between its anchored lower end and its reinforced upper portion, will have sufficient flexibility or elasticity to permit the post to be turned down to a horizontal position or against the road bed. This flexibility will adapt the post to yield and permit a vehicle to run over the post without breaking the same. The post, in its upper portion, is formed with various light-emitting passages for signal purposes. As shown, the post has a light passage 18 in the form of the letter S and a light passage 19 to indicate "stop", and a light passage 20 in the form of a letter G and a cooperating light passage 21 to indicate "go". In practice, the light passages 18 and 19 will have red celluloid or glass coverings and the light passages 20 and 21 will have green celluloid or glass cov-

erings, such as is the standardized custom for the respective "stop" and "go" signals.

Rigidly but detachably secured to the upper end of the tubular casing 5 is a head in the form of a hollow pilot dome 22, which is partly telescoped into said tube. Preferably, the lower portion of said dome 22 is directly telescoped into a metal ring 23 which, in turn, is directly telescoped into the upper end of the tube 5. At intervals, the ring 23 is secured to the upper end of the tubular casing 5 by screws 24 and at intervening intervals, the ring 23 is secured to the dome 22 by screws 25, the heads of which latter are shown as countersunk through openings in the casing. In this way, the pilot dome is detachably secured to the tubular casing, and when secured, holds the reinforcing skeleton within the upper portion of the tubular casing. The pilot dome is shown as provided with circumferentially spaced light-emitting passages 26.

The present invention is not directed particularly to the light-producing means, but it is important to note that the plates 14, 15 and 16 afford convenient supports for sockets 27 into which light bulbs 28 are screwed in the customary way and at the suitable places.

The light-controlling circuits and switches and timing mechanism constitute no part of the present invention and need not here be considered.

In the post herein described, a resilient or elastic rubber tube not only affords a casing, but the resilient means for supporting the post in an upright position. Moreover, such a tubular casing has not only that resilience required for permitting the post to be bent from vertical to horizontal position, but even the reinforced portion thereof affords a cushion that will absorb shocks and greatly reduce the strains put upon the inner parts of the tube. Moreover, the tube is given a very simple and neat appearance and the body of the post has no metallic parts exposed for contact with the vehicle. The tubular casing is of a character to resist moisture and to protect the interior mechanism from rain and moisture. The post may be painted in any desired color and is of such character that it may be reduced to the smallest possible cross-sectional dimensions and, hence, is extremely well adapted for use, for example, between street car tracks where the clearance is small. Moreover, the resilient exterior of the tube will not damage or mar a vehicle that might scrape against the same.

What we claim is:

1. A self-arighting signal post having a tubular body of elastic non-separable material anchored at its lower end, a stiffening and reinforcing shell in the form of a metallic skeleton fitted within the upper portion of said tubular body and affording a support for lighting means, a portion of said tubular body between its anchored lower end and said metal skeleton being flexible and adapting the post to be bent to an approximately horizontal position, said tubular body at its stiffened upper end having light-emitting passages for signal purposes.

2. A self-arighting signal post having a tubular body made of fabric reinforced rubber, anchored at its lower end, a stiffening shell fitted within the upper portion of said tubular body and affording a support for lighting means, said tubular body in its reinforced upper portion having light-emitting passages for signal purposes, said tubular body between its anchored lower end and said reinforcing shell being flexible and adapting the post to be bent into an approximately horizontal position.

3. The structure defined in claim 2 in which said stiffening shell is in the form of a metallic skeleton.

4. The structure defined in claim 2 in which said stiffening shell is in the form of a metallic skeleton, in further combination with a pilot dome applied to the upper end of said tubular body and having light-emitting passages.

5. The structure defined in claim 1 in which said tubular body is cylindrical in form and in which the stiffening shell within its upper portion is correspondingly formed.

6. The structure defined in claim 1 in which said tubular body is cylindrical in form and in which the stiffening shell within its upper portion is correspondingly formed, the said shell and tubular body having light-emitting passages for signal purposes.

7. The structure defined in claim 2 in further combination with a pilot dome applied to the upper end of said tubular body and having light-emitting passages.

In testimony whereof we affix our signatures.

JOHN RANK.
HENRY W. RANK.