E. E. TRYON.

SIGNAL DEVICE.

APPLICATION FILED DEC. 5, 1919.

1,354,355. **Patented Sept. 28, 1920.**

Fig. 2.

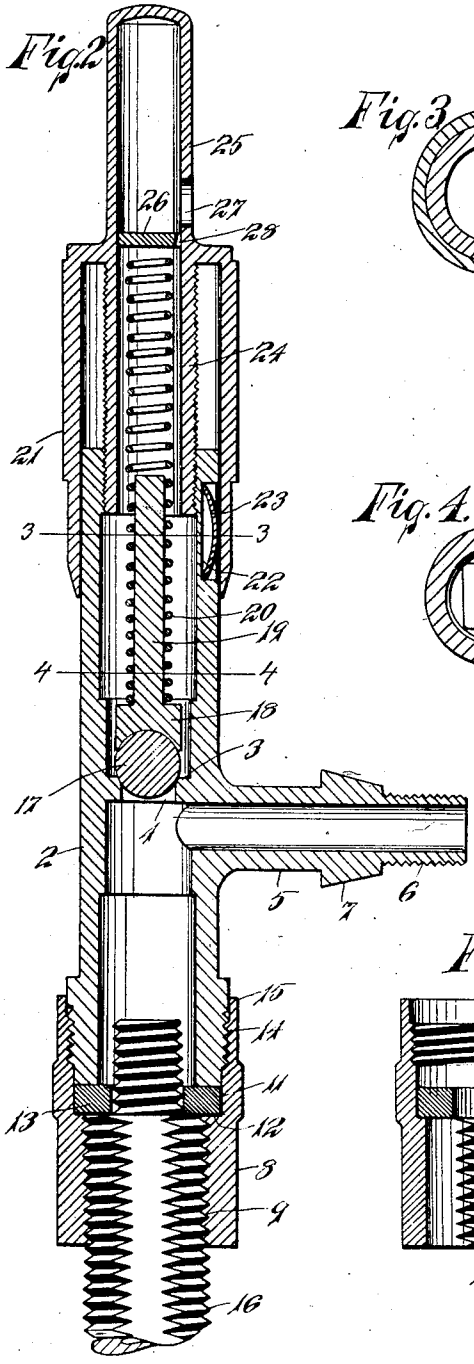


Fig. 3.

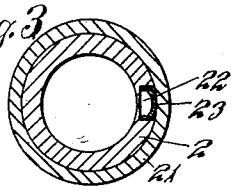


Fig. 4.

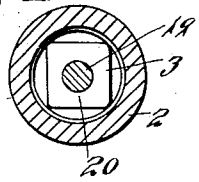


Fig. 5.

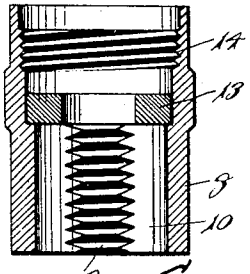
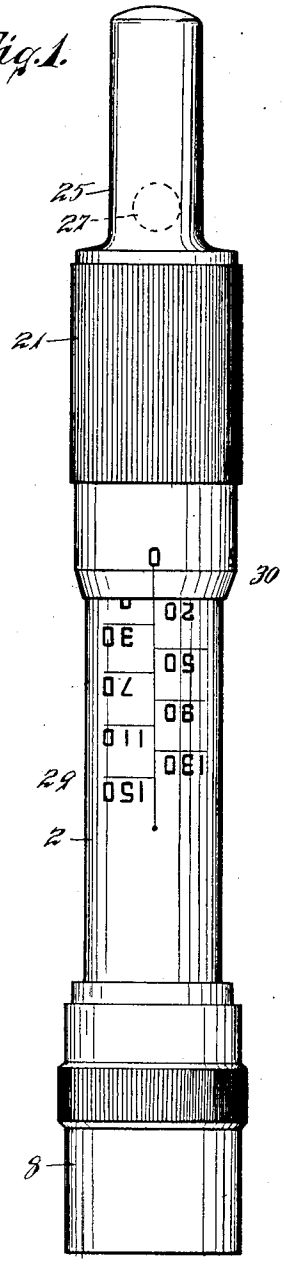


Fig. 1.



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UNITED STATES PATENT OFFICE.

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SIGNAL DEVICE.

1,354,355. Specification of Letters Patent. Patented Sept. 28, 1920.

Application filed December 5, 1919. Serial No. 342,621.

To all whom it may concern:

Be it known that I, EDWARD E. TRYON, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Signal Devices, of which the following is a specification.

This invention relates to what I will for convenience term a signal device. A signal device involving the invention may obviously with advantage be employed in widely different connections. I have found it, however, of particular advantage in conjunction with the supplying of compressed air to the inner tube of an automobile tire. In this particular use the purpose is to give a signal desirably audible, when the pressure developed reaches a certain point. I have several motives in view among them being the provision of an article of the character set forth which is accurate and precise and by which an alarm may be given when the pressure reaches a desired point in the tire. In the case of an automobile tire tube this would indicate to the user that the necessary inflation had been obtained and he would cease inflating action whether brought about by one of the different style pumps or otherwise.

In the drawings accompanying and forming a part of the present specification I have shown in detail one of the several forms of embodiment of the invention which to enable those skilled in the art to practise the same will be set forth fully in the following description, the novelty of the invention being incorporated in the claims succeeding said description. From this it will be apparent that I am not restricted to the showing made by said drawings and description. I may depart therefrom in several respects within the scope of the invention defined by said claims.

Referring to said drawings:

Figure 1 is an elevation of the signal device.

Fig. 2 is a longitudinal section of said device showing the same connected with the stem of a tire tube.

Fig. 3 is a cross section on the line 3—3 of Fig. 2.

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

Fig. 5 is a detail in section of a sleeve.

Like characters refer to like parts throughout the several views all of which are on an enlarged scale.

The article comprises in its construction a suitable body as that denoted in a general way by 2. This body is hollow or tubular so that obviously there is a passage or duct longitudinally in it for a reason that will hereinafter appear. About midway of the length of the body is an internal wall 3 having through it the port 4 functioning as I will hereinafter explain. Extending from the body 2 just below the wall 3 is a nipple as 5 having at the outer end external threads as 6 to which a pump may be detachably connected for the purpose of forcing air through the body 2 for delivery to an inner tube as I will later herein set forth. The nipple 5 back of the threaded surface 6 has an external frusto-conical collar or projection 7 the small end of which is out and which is adapted to receive an inflating device. The air passes through the nipple and, as I will later set forth, downwardly into the tube.

Associated with the lower end of the hollow body 2 is a coupling of suitable kind of which the sleeve 8 is a satisfactory kind. This coupling or sleeve is internally threaded as at 9 the threaded surface 9. however, being mutilated by grooving or channeling the same as at 10 longitudinally of the coupling or sleeve 8. The latter is internally of three diameters the portion of least diameter having the mutilated threads 9. The portion 11 of intermediate diameter is plain. At the junction of the portion 11 and threaded surface 9 there is formed an annular shoulder 12 which constitutes a seat for a washer as 13 of some comparatively soft or compressible material such as leather, rubber or composition. It will be understood that the diameter of the washer 13 is equal to that of the plain portion 11. The smallest diametrical portion of the coupling or sleeve 8 is threaded as at 14 to engage threads at the lower end of the body 2 as shown best in Fig. 2.

The coupling or sleeve 8 is provided at its upper end with a circular or annular lip or flange portion 15 the internal diameter of which is equal to the external diameter of the plain portion of the body 2 above the

threads 14. This annular portion 15 overlies the plain portion of the body and insures an air-tight connection at such point and it also compensates for wear. The parts as shown assembled in Fig. 2 in which view the threaded stem 16 of an inner tube has been introduced into the coupling or sleeve 8 with its smaller upper or outer end in the lower end of the body 2, the shoulder at the juncture of the large and small portions of the stem bearing substantially against the soft or yieldable washer 13 to insure an air-tight connection at this point. The threads of the stem 16 solidly engage those in the coupling or sleeve 8.

The valve is designated by 17 and as shown is in the form of a sphere or ball which when closed as indicated in Fig. 2, is seated within the port or opening 4. This valve fits a spherical cavity in the head 18 at the lower end of the stem 19. The head 18 is ordinarily integral with the stem 19, is spaced from the inner surface of the barrel and as shown is engaged by the coiled spring 20 which yieldingly holds the valve 4 to its seat, the tension of the spring being regulatable as I will hereinafter explain, to permit the valve to open under the variable pressures of air and the action of the signal to which I have referred.

Surrounding the upper end of the body 2 and rotary and longitudinally movable thereon is a barrel 21. I provide means of a suitable nature a form of which I will now set forth, which prevents accidental movement of the barrel. The body near the upper end and externally thereof has a longitudinal channel or groove 22 closed at its ends, and in which is seated the spring 23 longitudinally and transversely bowed, the outer bowed surface of the spring engaging the inner wall of the barrel 21 to prevent accidental movement of the barrel. From the closed top of the barrel 21 the tube 24 depends. Said tube is externally threaded in the opening in the upper end of the body 2 as seen in Fig. 2. From the closed top of the barrel 21 the tube 25 rises, it being about the same diameter as the pendant tube 24 and its upper or outer end being closed. The fixed wall 26 is situated practically at the junction of the coaxial tubes 24 and 25 and the upper end of the valve-closing spring 20 to which I have referred engages against this wall or partition 26. Slightly above the wall is a perforation or hole 27 for the escape of air, the wall 26 being slotted at 28 to produce a whistle tongue, the air escaping causing the action of the whistle.

It will be assumed that the valve 17 has been adjusted, as I will hereinafter explain, and that it has been opened under pressure of the air. The air escaping upwardly through the opening or port 4 passing the opened valve 17 will escape to atmosphere by way of the opening 27, first however encountering the whistle tongue to which I have referred and naturally sounding the whistle.

The body 2 externally thereof, has a scale as 29, the longitudinal or central line of which is longitudinal of the body. From this longitudinally disposed line, extend graduations denoting pressures in tens of pounds. The barrel also has a scale 30, the zero mark of which may be brought opposite the longitudinal central line of the scale 29. In Fig. 1 the zero mark of the barrel 21 is opposite the graduation denoting 20 on the scale 29 which indicates that the spring 20 is so tensioned as to hold the valve 17 closed against its seat against all pressures under twenty pounds. If however a pressure of twenty pounds is exceeded, the valve is opened and the escaping air passing around the rectangular head 18 will escape to atmosphere in the manner indicated and cause the sounding of the whistle.

What I claim is:

1. A device of the class described comprising a hollow body provided with means for its detachable connection with the stem of a tire tube and also provided with means for the lateral connection therewith, of a tire inflating device, the body being provided interiorly with a wall having a port, a spherical valve when closed to fit against the wall and covering the port, an elongated stem having at its inner end a rectangular head spaced from the inner wall of the body and furnished with a concavity to receive said valve, a barrel surrounding the upper end of the body and having its outer end closed and also having co-axial tubes extending oppositely from the closed end thereof, a spring surrounding the stem and bearing at one end against said head, and a partition in one of the tubes against which the other end of the spring bears, the outer of the tubes having an opening, the wall of which is slotted to produce a whistle tongue.

2. A device of the class described comprising a hollow body provided with means for its detachable connection with the stem of a tire tube and also provided with means for the lateral connection therewith, of a tire inflating device, the body being provided interiorly with a wall having a port, a spherical valve when closed to fit against the wall and covering the port, an elongated stem having at its inner end a rectangular head spaced from the inner wall of the body and furnished with a concavity to receive said valve, a barrel surrounding the upper end of the body and having its outer end closed and also having co-axial tubes extending oppositely from the closed end thereof, a spring surrounding the stem and bearing at one end against said head,

a partition in one of the tubes against which the other end of the spring bears, the outer of the tubes having an opening, the wall of which is slotted to produce a whistle tongue, and a longitudinally and transversely bowed spring, the body having a longitudinal channel to receive the spring, the outer bowed surface of the spring engaging the inner wall of the barrel to prevent accidental movement of the barrel.

In testimony whereof I affix my signature in the presence of two witnesses.

EDWARD E. TRYON.

Witnesses:

ELSIE M. RABENSTEIN,

HEATH SUTHERLAND.