G. A. COLE.

SIGNALING APPARATUS.

APPLICATION FILED JAN. 19, 1916.

1,231,331.

Patented June 26, 1917.

2 SHEETS—SHEET 1.

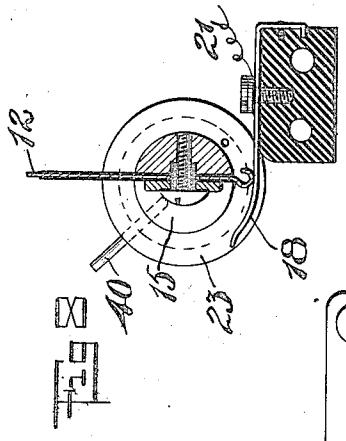


Fig. 3

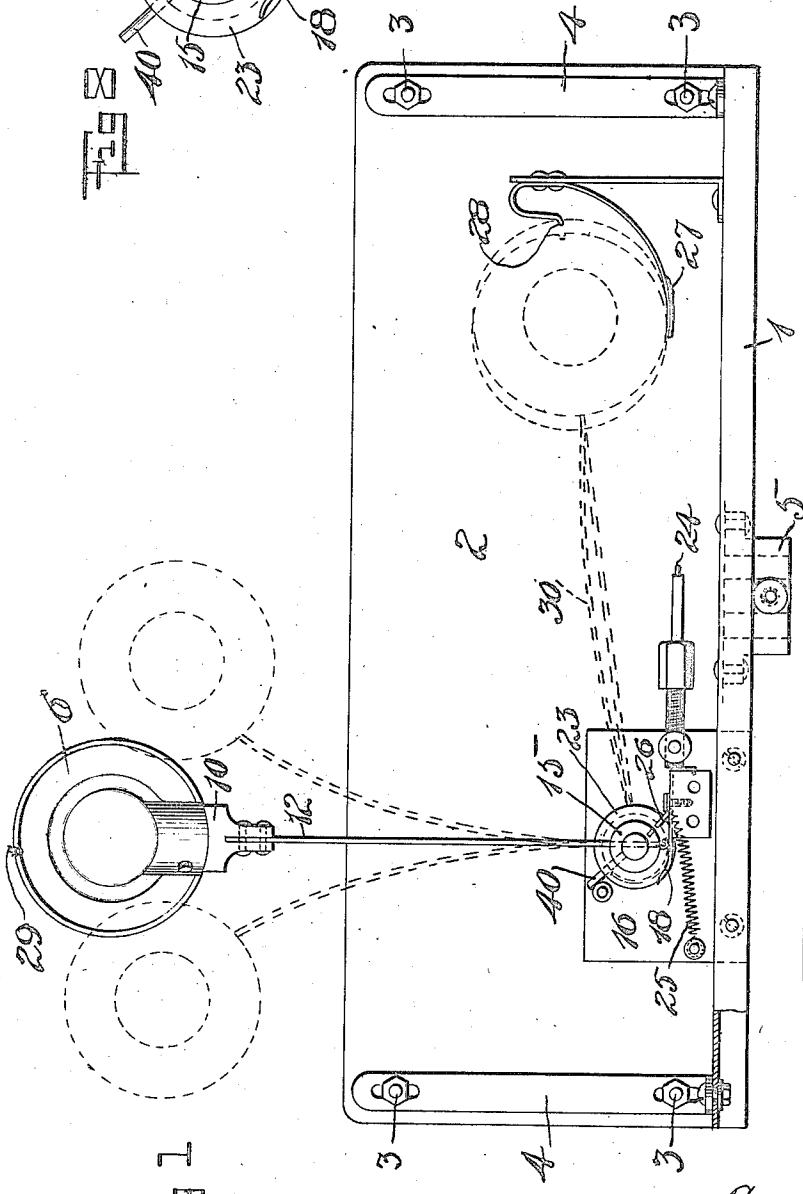


Fig. 1

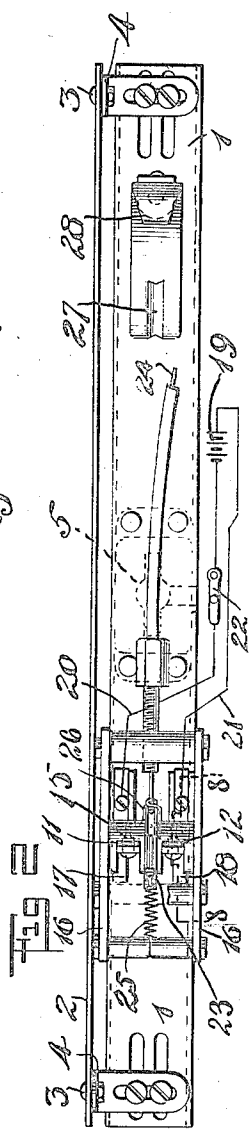


Fig. 2

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2 SHEETS—SHEET 2.

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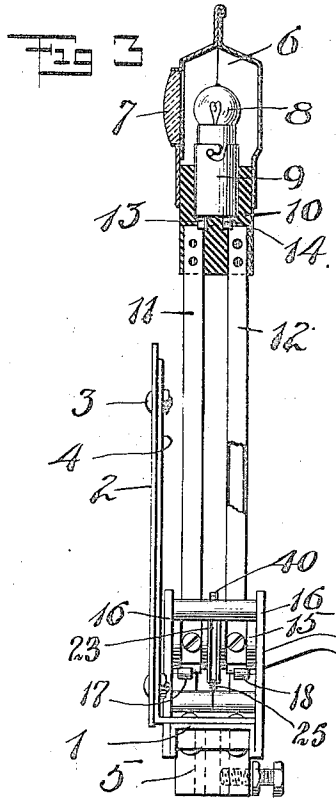


Fig 5

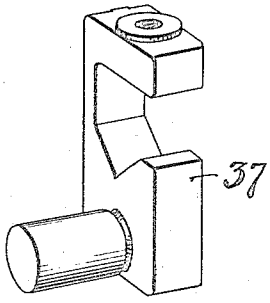


Fig 6

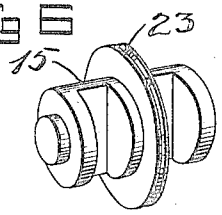


Fig 7



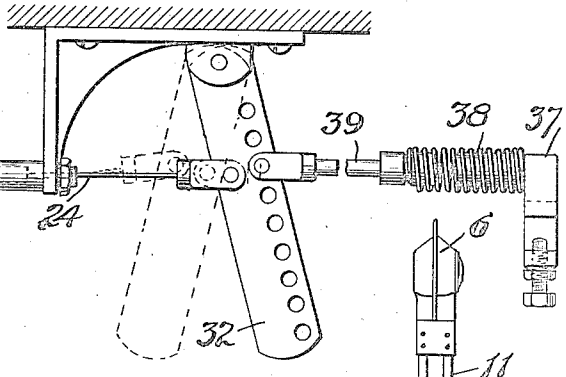
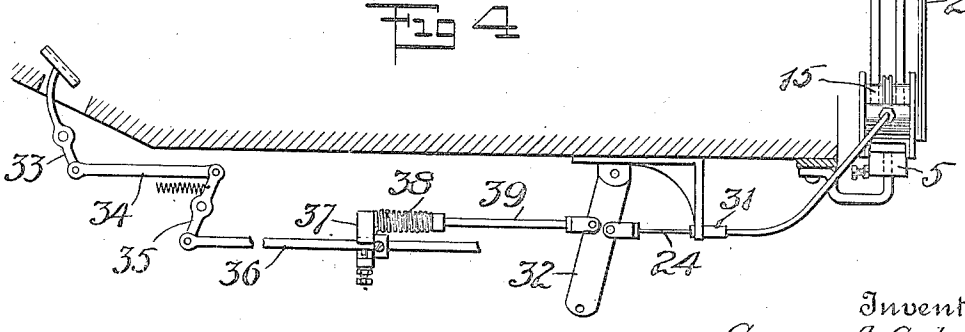


Fig 4



Inventor

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UNITED STATES PATENT OFFICE.

GEORGE A. COLE, OF NEW YORK, N. Y.

SIGNALING APPARATUS.

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Application filed January 19, 1916. Serial No. 72,951.

To all whom it may concern:

Be it known that I, GEORGE A. COLE, a citizen of the United States of America, residing at New York city, New York, have invented a new and useful Signaling Apparatus, of which the following is a specification.

My invention relates to a new signaling apparatus especially useful when employed in connection with vehicles for indicating, to overtaking vehicles, when the vehicle upon which it is mounted is slowing down for any reason, as for example, for the purpose of turning a corner. My object is to provide a comparatively simple and yet exceedingly effective and durable apparatus which is positive in action, said apparatus being so designed that it may be used either in the day-time or night-time.

In the drawings:

Figure 1 is a front elevation of the apparatus with certain parts removed.

Fig. 2 is a plan view thereof.

Fig. 3 is an edge elevation of the parts shown in Fig. 1 looking from left to right.

Fig. 4 is a similar view looking from right to left.

Figs. 5, 6 and 7 are detail views.

Fig. 8 is an enlarged sectional view on the line 8—8, Fig. 2.

In the preferred form of my invention I provide a suitable bracket or frame 1 which constitutes the main mounting for the signal. This frame 1 is provided with a suitable shield 2 which is preferably the license number plate of the vehicle. This plate may be secured in place in any well known manner as by bolts 3—3 which pass through standards 4—4 on the frame 1. 5 represents conventionally a socket on frame 1 which socket may be attached to the supporting post of the vehicle, whereby the frame may be easily attached thereto or detached therefrom. 6 represents a signal head which is preferably hollow and is provided at its rear side with a window or bull's-eye 7. Contained within the head 6 is an incandescent lamp 8 mounted in a suitable socket 9 which in turn is mounted in a plug or stopper 10 upon which said head 6 may be removably carried. This plug 10 is preferably made of insulating material. 11—12 are resilient flexible twin stay supports for the signal head 6. These supports are preferably formed of spring steel and may be provided with a suitable protective covering. These stays may be embedded in the plug 10 and may be in electrical connection with the terminals 13—14 respectively of the lamp socket 9. The parts thus described are located back of the shield or number plate 2 so that when the stays 11—12 are turned down back of said shield, the signal head will be concealed, and when swung up into the vertical position shown in solid lines in Fig. 1, the signal head 6 will be exposed. In swinging up the signal head to the exposed position, said signal head will, by reason of the flexible stay mounting, oscillate to the right and left within about the range of the two positions indicated in dotted lines above the shield 2 in Fig. 1. This oscillation of the signal head attracts the attention of any one approaching from the rear and will be understood as a warning signal. Any suitable means may be employed for swinging the signal head 6 up into the signaling position, and any suitable mounting may be employed for the lower ends of said twin stays. In the preferred form shown in the drawing the twin stays 11—12 are mounted upon a hub 15 which may be trunnioned between two supporting plates 16—16 back of the shield 2 and carried by the frame 1. The twin stays 11—12 are insulated from the hub 15 and from each other whereby said twin stays may act as electrical conductors for a current leading to the lamp 8. 17—18 are brushes or contacts located adjacent to the hub 15 and which are arranged to be respectively electrically connected with the ends of the twin stays 11 and 12 when the hub 15 is turned into the signaling position. When, however, the hub is turned into the non-signaling position, this electrical connection is broken. The brushes 17—18 may be suitably connected with a battery 19 by wires 20—21 respectively. 22 conventionally represents a switch in the electric circuit which may be off in the day-time and on in the night-time. On the hub 15 I preferably provide a grooved annular flange 23 and secured thereto is the end of a piece of so-called "Bowden" wire 24 which I by preference use for the purpose of operating the hub. One end of the "Bowden" wire may be wrapped partially around the grooved flange 23 of the hub so that when said wire is pulled the hub will be shifted in a direction to swing the signal head 6 up into the signaling position. When the pull on the wire 24 is released the signal may be

returned by gravity to the non-signaling position behind the shield 2 or, if desired, a suitable return spring 25 may be employed which may be secured to the hub 15 in any well known manner, as for example, by means of a wire connector 26. 27 is a buffer spring which receives the signal head 6 when it moves to the non-signaling position. 28 is a spring catch, the end of which is arranged to engage in a notch 29 in the edge of the signal head 6, so as to hold the signal against movement when not in operation. When the signal is about to be operated the first partial turn of the hub 15 will slightly bend the twin stays 11—12 as indicated at 30, Fig. 1. This will foreshorten the signal arm and hence will disengage the signal head 6 from the catch 29, as illustrated in dotted lines, whereupon the continued rotation of the hub 15 will swing the signal head 6 up to the signaling position where it will oscillate gently to and fro on said stays so as to attract the attention of anyone approaching from the rear. If at this time the switch 22 is closed the signal will be illuminated while in the operating position. It will be understood that while the signal is operating, the hub 15 will be stationary, any suitable stop means such a stop pin 40 being provided to cause the hub to stop in the signaling position so as to prevent wear on the brushes 17—18. The wire 24 may lead to any suitable operating lever which is capable of being manually controlled either by hand or foot. In the present instance, the said wire leads through a bracket supported guide 31 and is operatively connected with a lever 32 which may be mounted on the underside of the vehicle. This lever may be connected with the foot brake lever 33 by any suitable form of linkage, for example, in this instance I have shown one link 34 connected to a walking beam lever 35 which in turn is connected by a link 36 to a clamp 37 which is adjustable on the link 36. This clamp 37 is connected by a spring 38 to the link 39 which latter may be connected to the lever 32. The spring 38 is sufficiently strong to impart the movement of the brake lever 33 to the signaling apparatus, but if the range of movement of the brake lever 33 is greater than that necessary to throw the signal into the signaling position, the spring 38 will yield sufficiently to prevent bending or shearing off the stop 40 on hub 15. For the purposes of adjustment the lever 32 may have a series of holes, through any one of which the pin of the link 39 may be passed, the selection depending upon the throw of the particular brake lever with which the signal is associated.

As indicated at the outset I have shown and described herein only the preferred embodiment of my invention, appreciating that modifications and changes may be made therein without departing from the spirit and scope thereof. For example, it is preferred that a plurality of resilient flexible stays be provided to support the signal head, and in the drawings I have shown two, although of course, the number may be varied. Again, for the sake of simplicity it is preferred that these stays should operate as conductors for the electric current when it is desired to have an illuminated signal. Obviously it is not essential that the stays perform this added function. While I have shown an oscillating hub 15 as the means for imparting a catapult movement to the signal head through the medium of the flexible stay supports, this feature may likewise be modified. I contemplate that a suitable housing may be employed to protect the various parts from the dust of the road and the elements, although such an expedient is not essential for it is too obvious to require illustration. By my preferred arrangement shown herein I am enabled to combine as a unit a signal holder and a license plate carrier, the license plate performing in addition to its usual function the function of a shield to hide the signal when it is not operating.

What I claim is:

1. In a signal of the character described, a signal head, a resilient flexible support therefor and means to impart a catapult movement to the signal head in opposition to gravity to cause the latter to oscillate through the medium of the resilient flexible support therefor.

2. In a signal of the character described, a signal head, a resilient flexible support therefor and means to impart a catapult movement to the signal head in opposition to gravity to cause the latter to oscillate through the medium of the resilient flexible support therefor, said means having two fixed positions with a stop to limit its movement in the direction of the catapult throw and hold it stationary therein during the period of oscillation of the signal head.

3. In a signal of the character described, a signal head, a resilient flexible support therefor and means to impart a catapult movement to the signal head in opposition to gravity to cause the latter to oscillate through the medium of the resilient flexible support therefor, a cushion to normally support the signal head when not in signaling operation.

4. In a signal of the character described, a signal head, a resilient flexible support therefor and means to impart a catapult movement to the signal head in opposition to gravity to cause the latter to oscillate through the medium of the flexible support therefor, a cushion to normally support the signal head when not in signaling operation, and a catch to hold said head on said cushion.

5. In a signal of the character described, a support, a hub trunnioned therein for partial rotation with means to limit the rotation of said hub relatively thereto, a signal head, a resilient flexible stay support connecting said head with said hub and means for imparting to said hub a partial rotation to in turn impart movement to said head in opposition to gravity in the signaling direction.

6. In a signal of the character described, a signal head, a resilient flexible support therefor and means to impart a catapult movement to the signal head in opposition to gravity to cause the latter to oscillate through the medium of the resilient flexible support therefor, and an electric illuminating device carried by said head with means for operating said illuminating device when said signal is in operation.

7. In a signaling device of the character described, a signal head, a plurality of resilient flexible stay supports therefor with means capable of limited movement for imparting a catapult action to said head in opposition to gravity through the medium of said stay supports.

8. In a signaling device of the character described, a signal head, a plurality of flexible stay supports therefor with means capable of limited movement for imparting a catapult action to said head through the medium of said stay supports, with an electric illuminating device in said head having two electric terminals respectively in electrical contact with two of said stay supports, said stay supports being insulated from each other.

9. In a signal of the character described, a frame with means for detachably holding a shield, a signal head arranged to be normally supported in the non-signaling position behind said shield, means for connecting said head to said frame comprising a resilient flexible stay support and a device for imparting a catapult movement to said head in opposition to gravity through the medium of said stay support.

10. In a signal of the character described, a frame with means for detachably holding a shield, a signal head arranged to be normally supported in the non-signaling position behind said shield, means for connecting said head to said frame comprising a resilient flexible stay support and a device for imparting a catapult movement to said head in opposition to gravity through the medium of said stay support, said device comprising a hub trunnioned on said support and having a limited rotary movement with means for imparting to said hub said limited rotary movement.

11. In a signal of the character described, a frame with means for detachably holding a shield, a signal head arranged to be normally supported in the non-signaling position behind said shield, means for connecting said head to said frame comprising a resilient flexible stay support and a device for imparting a catapult movement to said head in opposition to gravity through the medium of said stay support, said device comprising a hub trunnioned on said support and having a limited rotary movement with means for imparting to said hub said limited rotary movement, means for holding said hub substantially stationary during the signaling period, during which period said head may oscillate on the resilient flexible stay support.

12. In a signaling device of the character described, a signal head, a plurality of resilient flexible flat stay supports therefor arranged in substantially the same plane, with means for imparting a catapult throw to said head in opposition to gravity through the medium of said supports.

13. In a signaling device of the character described, a signal head, a plurality of resilient flexible supports therefor with means for imparting a catapult throw to said head in opposition to gravity through the medium of said supports, an electric light for said head, an electric circuit, one of said resilient flexible supports comprising part of said circuit.

14. In a device of the character described, a combined signal and license plate carrier, a signal mounted on said carrier comprising a head with resilient flexible connections between said head and said carrier and with means for supporting a license plate in position to form a shield when said signal is not in operation and means for imparting a catapult throw to said head in opposition to gravity through the medium of said connections.

15. In a signal of the character described, in combination a signal head, an electric lamp therefor, a plurality of resilient flexible supports connected to said signal head, said supports adapted to act as electrical conductors for said lamp, means connected to the opposite ends of said supports capable of positively receiving a limited rotated motion and imparting to said head, an oscillating movement through the medium of said resilient member.

GEORGE A. COLE.