M. O. SMITH AND E. A. MAHANNAH.

AUTO SIGNAL.

APPLICATION FILED AUG. 15, 1921.

1,407,444. Patented Feb. 21, 1922.

2 SHEETS—SHEET 1.

Fig. 1

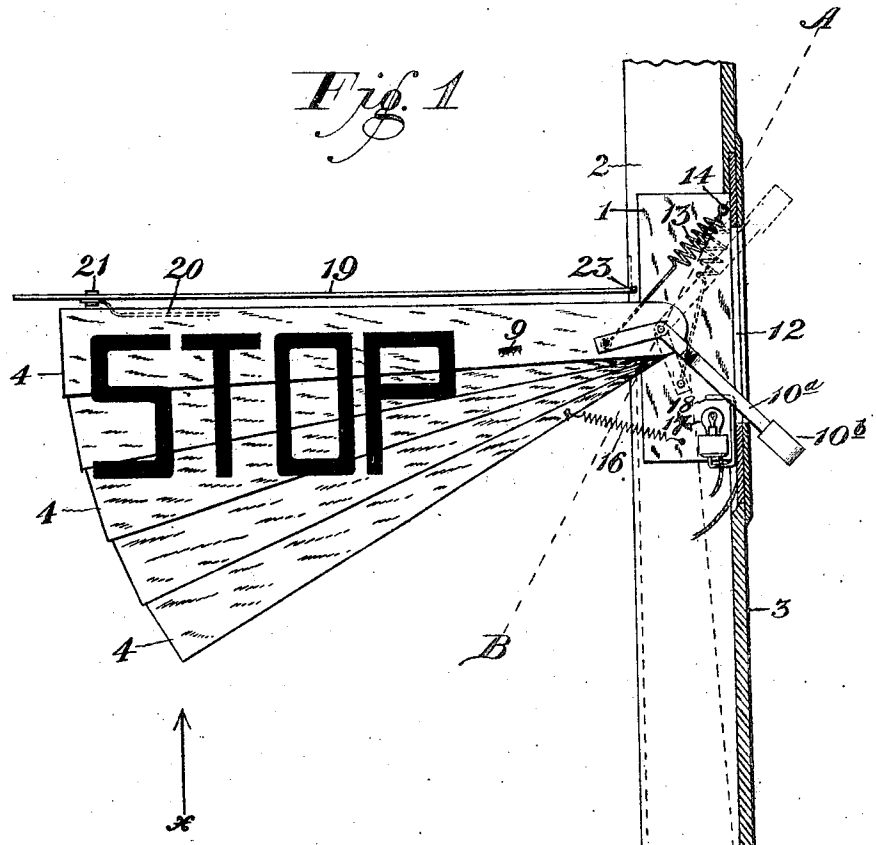


Fig. 2

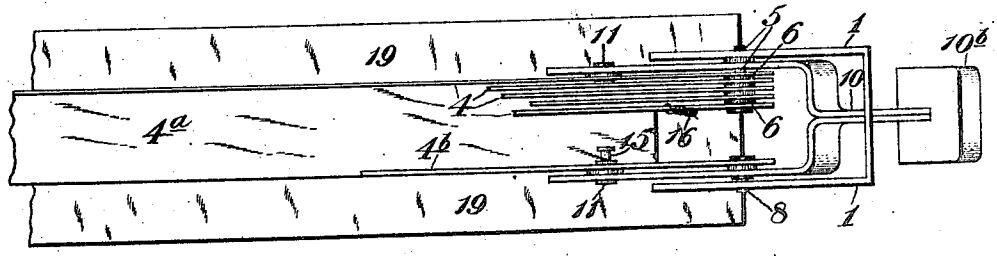
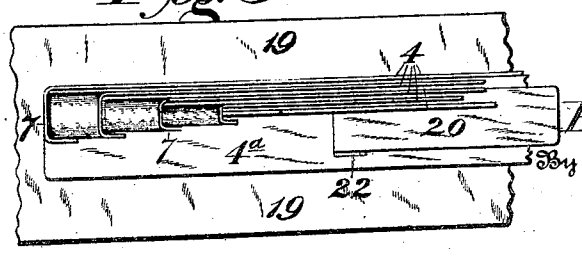


Fig. 3



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2 SHEETS—SHEET 2.

Fig. 4

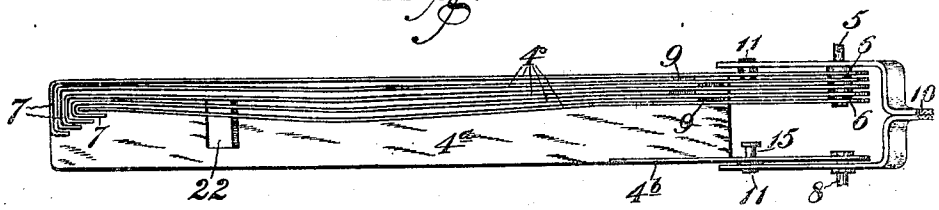


Fig. 5

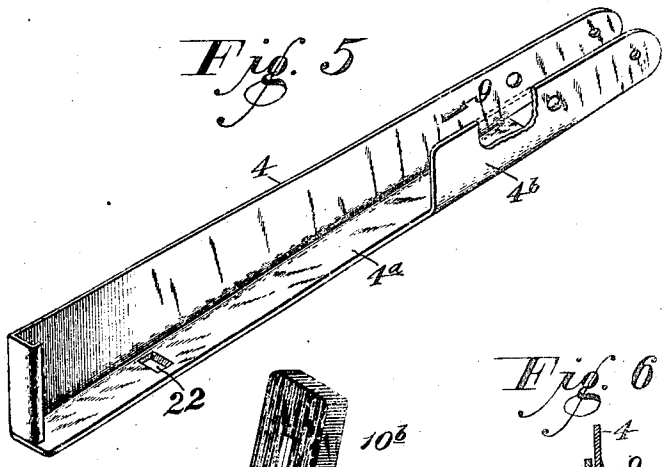


Fig. 6

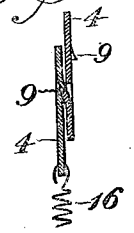
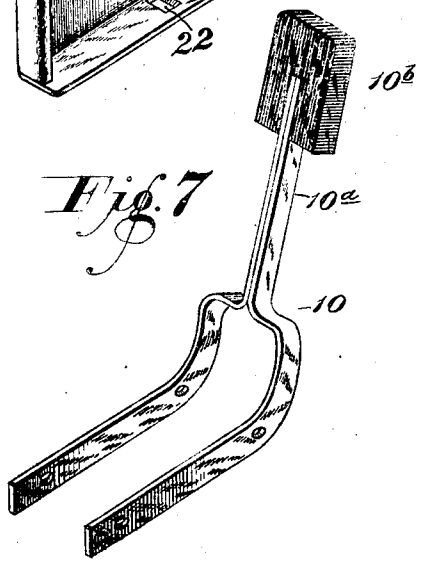


Fig. 7



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AUTO SIGNAL.

1,407,444. Specification of Letters Patent. Patented Feb. 21, 1922.

Application filed August 15, 1921. Serial No. 492,592.

To all whom it may concern:

Be it known that we, MARSHALL O. SMITH and EVERETT A. MAHANNAH, citizens of the United States, residing at Niagara Falls, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Auto Signals, of which the following is a specification.

Our invention relates to signals for automobiles and the like.

The object is to provide a device of this character specially suited for closed cars, limousines and the like, where it is inconvenient or impossible to extend the hand out at the side of the car to indicate the direction in which it is proposed to turn.

Other objects will appear in the subjoined description.

A leading feature of the invention consists of a semaphore formed of leaves or sectors pivotally mounted in a mortise or elongated cavity in the side of the car body, and adapted when not in use to be folded into said cavity and covered up from view, the device having an operating lever extending through the body to the inside of the car at the side of the driver.

Another feature consists in having the sectors controlled by a spring, one end of which swings across a dead centre as the semaphore is moved from operative to inoperative position, so that the spring holds the semaphore in whichever of said positions it is caused to assume.

The invention consists in certain novel features of construction and arrangement of parts, as will be hereinafter described and claimed, reference being had to the accompanying drawings, in which:—

Fig. 1 is a side elevation of our device in operative position, with the supporting casing shown in section. Fig. 2 is a broken view on an enlarged scale showing in bottom plan, the inner ends of the sectors in their relation to the protecting cover and the operating lever. Fig. 3 is a broken view on a similar scale showing the outer end of the semaphore viewed in the direction of the arrow x in Fig. 1. Fig. 4 is a bottom plan view of the sectors in their folded relation to each other, showing how they are held together at their ends and held wider apart intermediate their ends.

Fig. 5 is a perspective of the top sector in inverted position. Fig. 6 is a sectional view, on an enlarged scale, showing the lower sector and the one next above it, to illustrate how the sectors are prevented from moving entirely past each other when the semaphore is opened; and, Fig. 7 is an inverted perspective of the operating lever of the semaphore.

The numeral 1 indicates a plate, U-shaped in cross section, upon which the semaphore is supported. This plate is suitably secured preferably in an outwardly facing mortise or cavity 2, in the car body 3, at the left side of the driver's seat.

The semaphore is formed of a plurality of leaves or sectors 4 mounted at their inner ends on a pivot 5 which is suitably anchored in the U-shaped plate 1. The sectors are held slightly spaced apart on the pivot 5 by the interposed washers 6, and at their outer ends have telescoping connection with each other by means of the bent ends 7, as shown particularly in Figs. 3 and 4.

The second sector, between its ends is given a lateral inward curvature which holds it spaced inwardly from the first sector, and the other sectors are each likewise given a successively greater curvature, so that they are all held spaced from each other, whereby to permit the portion of the sectors on which the words "Stop" is displayed from being scratched or abraded or dimmed in any way by the sides of the sectors rubbing against each other as the semaphore is opened and closed.

The top sector is provided at its upper side with a longitudinally extending right-angled section 4^a which acts as a stiffening rib and renders the sector rigid against lateral bending: and inasmuch as all the sectors are held at each end against undue lateral movement relatively to each other, it follows that the section 4^a of the upper sector serves to render the whole semaphore more rigid laterally, thus adapting it to easily resist the air pressure in a fast-moving car, or when a stiff wind is blowing.

At the inner end of the upper sector is an integral section 4^b parallel with the main section of the sector; and while the main section of the sector is pivoted to one side of the U-shaped bar by the pivot 5, as already set forth, the section 4^b is pivoted to the opposite side of the U-shaped bar by means of the pivot 8 suitably anchored therein in alinement with the pivot 5; so that the upper sector is pivoted at both its sides to the corresponding sides of the U-shaped bar, and thus serves to hold the whole

semaphore against lateral movement at its outer end.

The sectors are provided with struck-out portions 9 suitably arranged to limit the movement of the sectors relatively to each other when the semaphore is opened.

The operating lever 10 of the semaphore is bifurcated with the two sides of its bifurcated portion mounted to rock in the U-shaped bar 1 on the pivots 5 and 8, said bifurcated portions near their ends being also riveted to the two parallel sides of the upper sector as indicated at 11, so that said lever practically constitutes an extension of the upper sector of the semaphore. The end 10^a of the operating lever extends through a slot 12 to the inside of the car, in convenient proximity to the hand of the driver.

A spring 13 is secured at its upper end to the U-shaped bar at 14, and at its lower end to a pin 15 rigidly secured to the section 4^b of the upper sector. The parts are so arranged that the lower end of the spring moves over a dead centre (indicated by the line A—B in Fig. 1) as the signal is moved from operative to inoperative position. So that the spring serves to hold the signal in whichever of said positions it is caused to assume.

The top section 4^a of the upper sector is partly cut away at the inner end of the sector, as illustrated in Figs. 2 and 5, to prevent interference with the lower end of the spring in passing between the two side sections of the sector.

A tension spring 16 is connected at one end to the U-shaped bar 1 and at the other end to the lower sector, so that when the semaphore is moved to its uppermost position, as indicated in Fig. 1, the spring 16 will pull sufficiently on the lower sector to open the semaphore as far as the struck-out portions 9 of the sectors will permit.

The recess 2 may be provided with an incandescent lamp 17 adapted for suitable connection with a battery, and a contact 18 connected with the lamp is arranged to be engaged by the lever 10^a when in its lowermost position to complete the electrical circuit, so that at night the light will shine out on the signal when it is in its displayed position. The battery, of course, would be controlled by a suitable switch to cut off the connection in daylight.

A suitable handle 10^b of insulating material is provided at the inner end of the lever 10^a.

A cover 19 is provided for closing the recess 2 in which the folded sectors are received when not in use. This cover carries a flat spring 20 riveted thereto at one end as indicated at 21 in Fig. 1, said spring being arranged to extend down through an opening 22 in the top section of the upper sector and along underneath said section to form a connection between the cover and the upper sector, so that the cover will be controlled through said sector by the operating lever 10^a.

The cover 19 is hinged at its inner end to the car body at 23; and the arrangement just described permits the cover and the top sector to move longitudinally relatively to each other, and yet remain operatively connected together as the semaphore is moved up and down.

In operation, when it is desired to display the semaphore, the lever 10^a is moved downwardly till the dead centre indicated by the dotted line A—B is passed, and then the spring 13 completes the operation opening the semaphore. In like manner, when the inner end of the lever 10^a is elevated to move the semaphore downwardly to its inoperative position, the spring again acts as soon as the dead centre is passed, to draw the semaphore into the recess or cavity of the car body and to hold said cover over said recess to protect the signal from the weather.

Having thus described our invention, what we claim as new and desire to protect by Letters Patent is:—

1. In a device of the character described, a semaphore formed of sectors pivoted at their inner ends and adapted to fold upon each other, said sectors between their ends being each given a different lateral configuration adapted to hold the intermediate portions of the sectors spaced from each other.

2. In a device of the character described; a semaphore formed of sectors pivoted at their inner ends and adapted to fold upon each other and provided at their outer ends with means for limiting the lateral movement of the sectors relatively to each other, the upper one of said sectors having a top section bent at right angles to its main section to brace said top sector against lateral strain, and said top section at its inner end having a shorter section bent at right angles thereto to lie parallel with the inner end of the main section of the sector, said parallel sections being provided at their inner ends with alined bores for suitable pivotal connection with the sector support; whereby the top sector serves to brace all the sectors against undue lateral strain; and means at a point spaced from the inner end of said shorter section of the inner sector for engaging the sector to hold it in its upper and lower positions.

3. In a device of the character described, a semaphore formed of sectors pivoted at their inner ends and adapted to fold upon each other; an operating lever for moving the sectors to their operative and inoperative positions; a spring for engaging the upper sector of the semaphore to hold the same in its uppermost position; and a weaker spring for engaging the lower sector of the sema-

phore to resist the upward movement of the stronger spring; whereby to hold the sectors unfolded when the upper sector is in its upward position.

4. In a device of the character described, a semaphore formed of sectors pivoted at their inner ends and adapted to fold upon each other; the body of the car having an outwardly facing recess into which the sectors are received when folded into inoperative position; a cover for said recess hinged to the body of the car above the sectors and extending out over the top sector in parallel relation thereto; and means at the outer end of said top sector for holding the cover in spaced relation thereto while permitting longitudinal movement of the sector and cover relatively to each other.

In testimony whereof we affix our signatures.

MARSHALL O. SMITH.
EVERETT A. MAHANNAH.