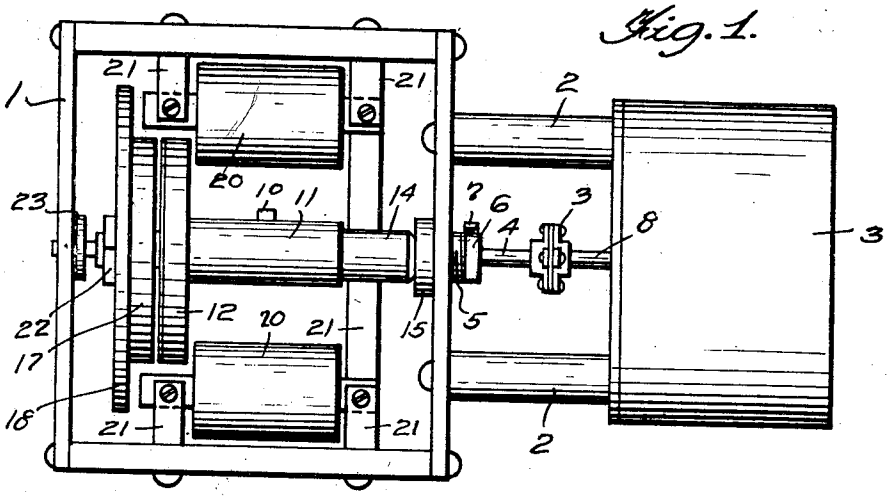
April 27, 1943. A. L. LAMAR 2,317,538

SIGNAL

Filed Oct. 25, 1941 3 Sheets-Sheet 1

Fig. 1.



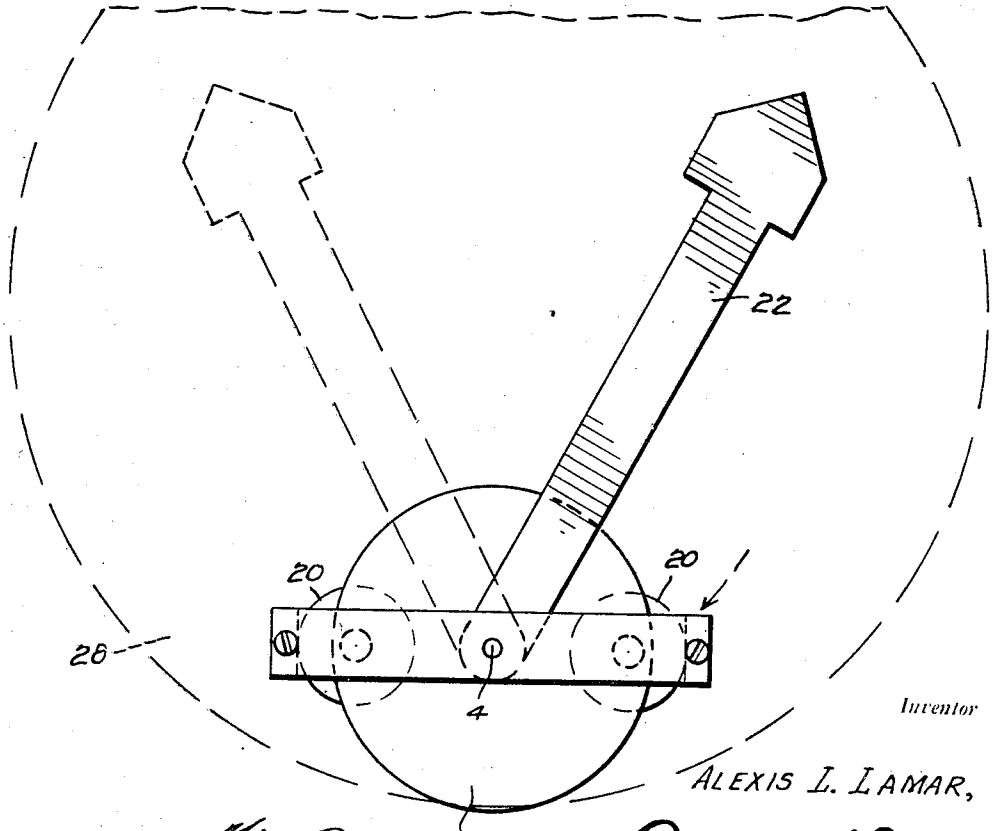


Fig. 2

Inventor

ALEXIS L. LAMAR,

By Clarence O'Brien

Attorney

April 27, 1943. A. L. LAMAR 2,317,538

SIGNAL

Filed Oct. 25, 1941 3 Sheets-Sheet 2

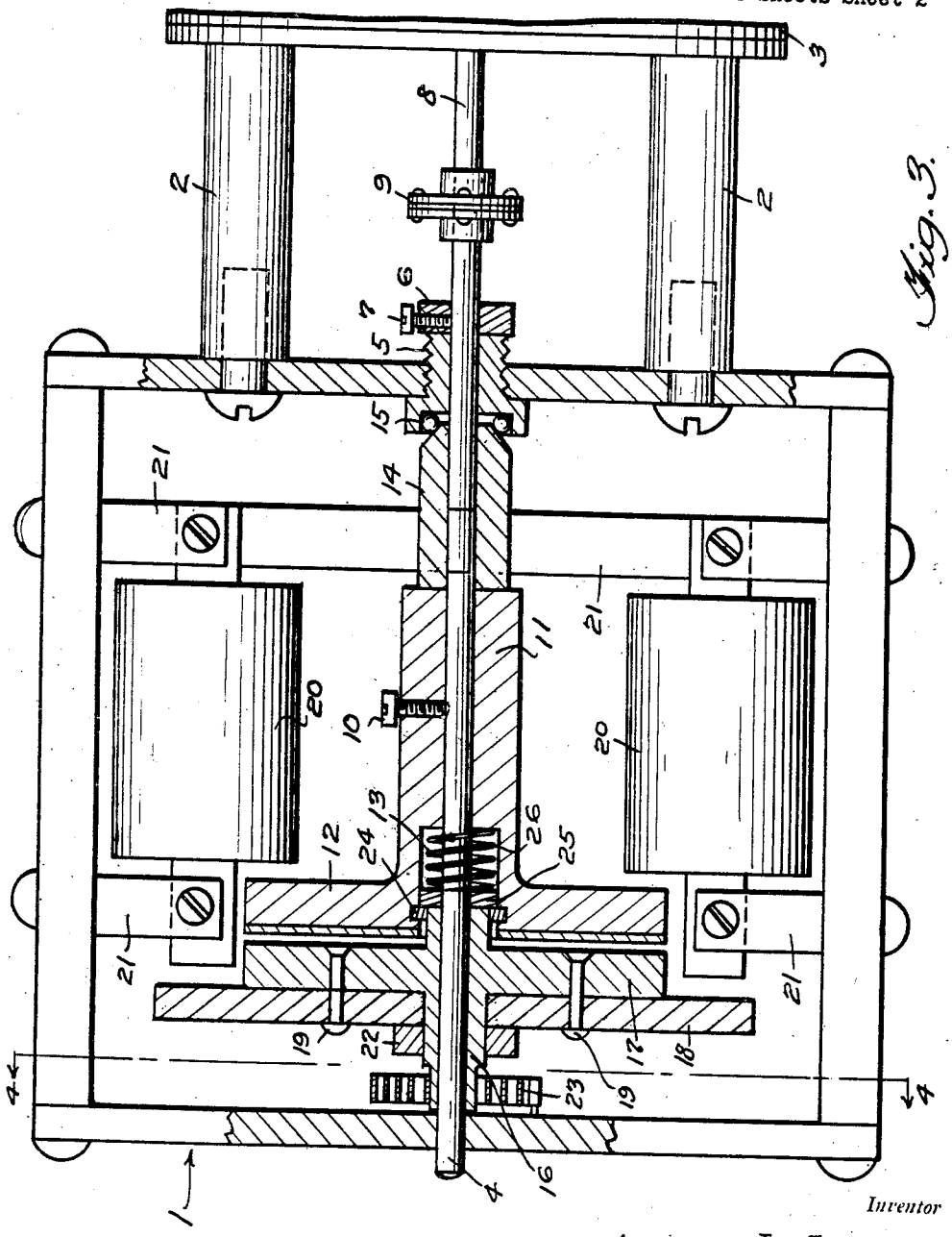


Fig. 3.

Inventor

ALEXIS L. LAMAR,

By Clarence A. O'Brien

Attorney

April 27, 1943. A. L. LAMAR 2,317,538

SIGNAL

Filed Oct. 25, 1941 3 Sheets-Sheet 3

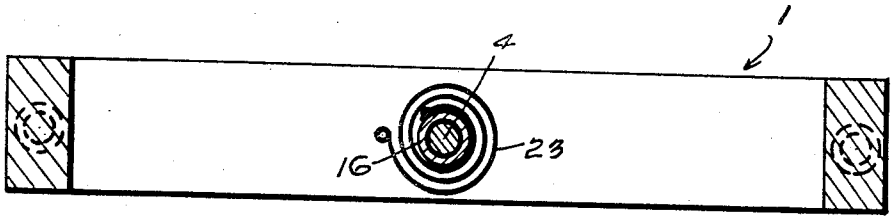


Fig. 4.

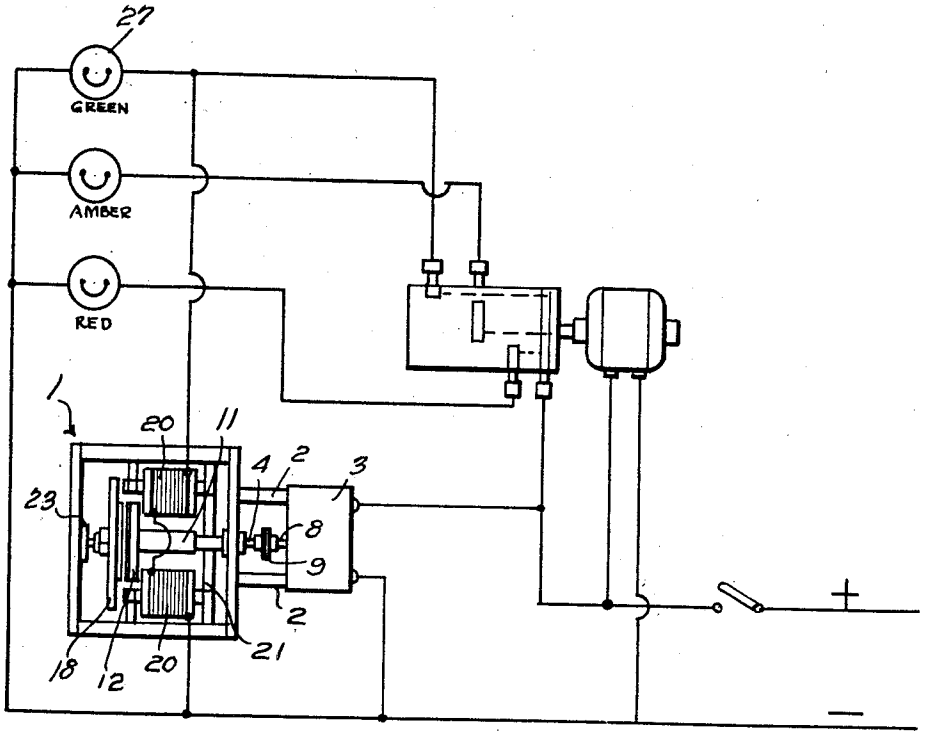


Fig. 5.

Inventor

ALEXIS I. LAMAR,

By Clarence A. O'Brien

Attorney

Patented Apr. 27, 1943

2,317,538

UNITED STATES PATENT OFFICE

2,317,538

SIGNAL

Alexis L. Lamar, Pittsburg, Kans.

Application October 25, 1941, Serial No. 416,550

2 Claims. (Cl. 161—15)

The present invention relates to new and useful improvements in signalling devices for use particularly in conjunction with traffic signals, although it will be understood, of course, that the device may be used for any other purpose for which it may be found adapted and desirable.

The primary object of the invention is to provide, in a manner as hereinafter set forth, a signal of the character described which is adapted to accurately indicate to pedestrians and vehicle operators moving with or on a "go" or green traffic signal how much time will elapse before the signal will change.

Another very important object of the invention is to provide a signal of the aforementioned character comprising novel means for putting the device in operation when the signal or other device with which it is being used is functioning.

Other objects of the invention are to provide a signal of the character described which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a top plan view of a signal device constructed in accordance with the present invention.

Figure 2 is a view in front elevation thereof.

Figure 3 is a top plan view of the device with portions thereof broken away in horizontal section.

Figure 4 is a cross-sectional view, taken substantially on the line 4—4 of Figure 3.

Figure 5 is a diagrammatic view.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a suitable frame structure which is designated generally by reference numeral 1. Mounted through the medium of supports 2 on the rear end of the frame structure 1 is a synchronous electric motor 3.

Journaled in the frame structure 1 is a longitudinal shaft 4. Threaded in the rear end portion of the frame structure 1 is a bushing 5 in which this end portion of the shaft 4 is journaled. A collar 6 is secured by a set screw 7 on the shaft 4 for abutting engagement with the bushing 5. The shaft 4 is connected, at its rear end, to the shaft 8 of the electric motor 3 by a universal joint 9.

Secured by a set screw 10 on the shaft 4 within the frame structure 1 is a tube 11. On the forward end portion of the tube 11 is a clutch disc 12. Also, the forward end portion of the tube 11 is counterbored in a manner to provide a chamber 13, the purpose of which will be presently set forth. A tubular spacing collar 14 is provided on the shaft 4 between the tube 11 and the bushing 5 and has its rear end engaged in a thrust bearing 15 on the forward end of said bushing.

Rotatably and slidably mounted on the forward portion of the shaft 4 is a sleeve 16. Formed on the sleeve 16, at an intermediate point, is a clutch disc 17 which is frictionally engageable with the disc 12 for connecting said disc 17 to the shaft 4 for actuation thereby. An armature 18 in the form of a disc of suitable metal is firmly secured, as at 19, on the front of the disc 17. It will be observed that the armature 18 is of greater diameter than the clutch disc 17.

Mounted in the frame structure 1 on opposite sides of the shaft 4 are electro-magnets 20. The electro-magnets 20 are adapted to attract thereto, when energized, the armature 18. Suitable supports 21 are provided in the frame structure 1 for the magnets 20. An indicator 22 is fixed on the sleeve 16 forwardly of the armature 18. A return spring 23 for the indicator 22 is operatively connected to the forward end portion of the sleeve 16.

The chamber 13 has mounted therein a stop ring 24 in which the rear portion of the sleeve 16 is slidable. A washer 25 is slidable on the shaft 4 in the chamber 13 and engageable with the stop ring 24 and the rear end of the sleeve 16. A coil spring 26 in the chamber 13 is engaged with the washer 25 for moving the disc 17 away from the disc 12 when the electro-magnets 20 are de-energized.

It is thought that the operation of the device will be readily apparent from a consideration of the foregoing. In Figure 5 of the drawings, the electro-magnets 20 are shown electrically connected with a green or "go" traffic signal 27. The electric motor 3 rotates the shaft 5 constantly and at a given speed. When the traffic signal 27 is not functioning the magnets 20 are de-energized and elements 17 and 18 are at rest in the position shown to advantage in Figure 3 of the drawings. When the traffic signal 27 goes on the electromagnets 20 are energized and the

armature 18 is attracted thereto thereby engaging the disc 17 with the disc 12. Thus, the sleeve 16 is frictionally connected to the shaft 4 for actuation thereby. In this manner the indicator 22 is swung slowly for showing how much time will elapse before the traffic signal 27 again goes off. As the indicator 22 is thus actuated the spring 23 is wound. Then, when the magnets 20 are again de-energized the spring 26 disengages the disc 17 from the disc 12 and indicator 22 is returned by the spring 23. As suggested in Figure 2 of the drawings, the device may be mounted in a suitable housing or casing 28.

It is believed that the many advantages of a signal or indicator constructed in accordance with the present invention will be readily understood and although a preferred embodiment of the device is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

1. A signal of the class described comprising a frame structure, a shaft journaled in said frame structure, means for actuating said shaft, a tube fixed on the shaft, said tube having a chamber extending longitudinally thereinto from one end thereof, a clutch member fixedly mounted on said one end of the tube, a clutch member rotatably and slidably mounted on the shaft in opposed relation to the first-named clutch member, a flat, circular armature fixed on the second-named clutch member and having its marginal portion projecting therebeyond, electromagnets mounted on the frame structure for attracting thereto the armature for engaging the second-named clutch member with the first-named clutch member, an indicator fixedly mounted on the second-named clutch member, a washer slidably mounted on the shaft in the chamber and operatively engaged with the second-named clutch member, a coil spring in the chamber engaged with said washer for disengaging the second-named clutch member from the first-named clutch member when the electromagnets are de-energized, and a return spring operatively connected to said second-named clutch member.

2. A signal of the class described comprising a frame structure, a shaft journaled in said frame structure, an electric motor mounted on the frame structure and operatively connected to said shaft, a tube fixed on the shaft in the frame structure, said tube having a chamber extending longitudinally thereinto from one end thereof, a clutch member fixed on said one end of said tube, a sleeve slidably and rotatably mounted on the shaft and having one end portion projecting into the chamber, a clutch member on said sleeve at an intermediate point in opposed relation to the first-named clutch member, a flat, circular armature fixed on the second-named clutch member and projecting outwardly therebeyond, electromagnets mounted in the frame structure for attracting thereto the armature for engaging the second-named clutch member with the first-named clutch member for frictional actuation thereby for connecting the sleeve to the shaft for rotation therewith, an indicator fixed on the sleeve, a ring in the chamber slidably encircling the sleeve, a washer slidably mounted on the shaft in the chamber and engaged with the sleeve, a coil spring in the chamber engaged with said washer for disengaging the second-named clutch member from the first-named clutch member when the electromagnets are de-energized, and a return spring for the indicator connected to the sleeve.

ALEXIS L. LAMAR.