May 8, 1945. T. E. STORY 2,375,393

SIGNAL SWITCH

Filed Jan. 13, 1942

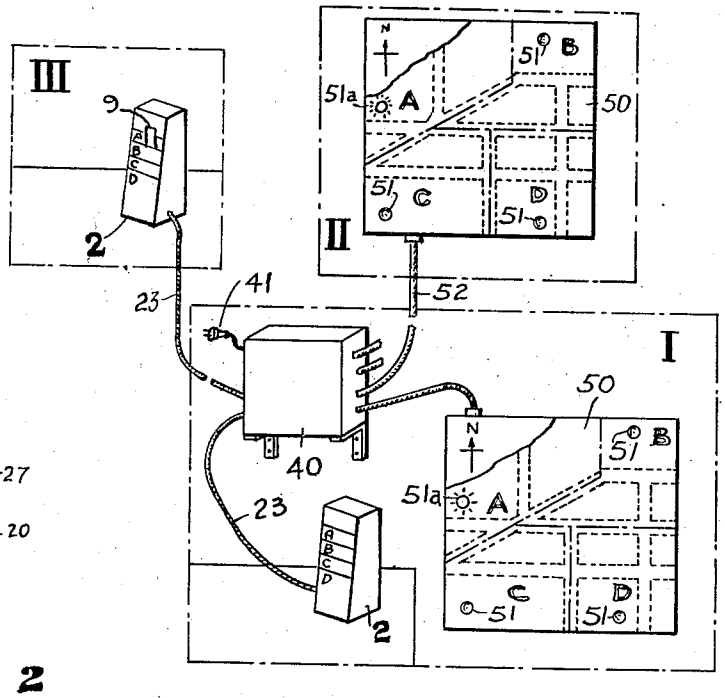


Fig. 1

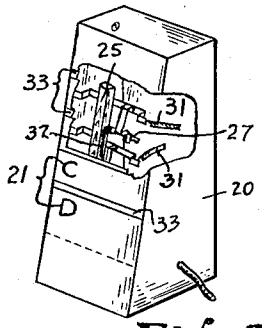


Fig. 2

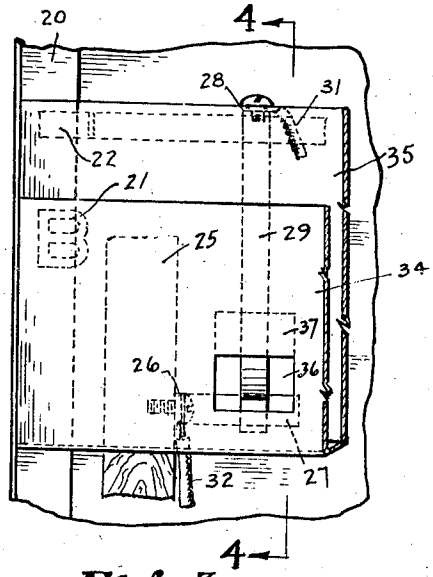


Fig. 3

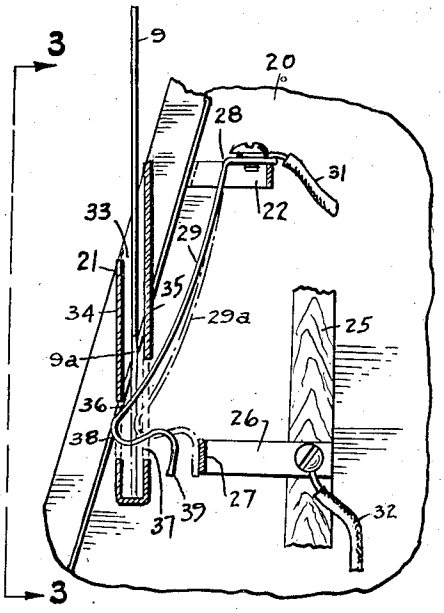


Fig. 4

INVENTOR.
THOMAS E. STORY
BY Morton S. Brockman

Patented May 8, 1945 2,375,393

UNITED STATES PATENT OFFICE

2,375,393

SIGNAL SWITCH

Thomas E. Story, Cleveland, Ohio

Application January 13, 1942, Serial No. 426,610

1 Claim. (Cl. 200—52)

This invention relates to signal devices and particularly to automatically operated electric signals.

The primary object of this invention is to provide a series of sensitive activating switches in a unitary cabinet which are capable of signalling certain information, simultaneously on many identical maps which are located at different places and which information is in accordance with the particular switch of the series used.

Another object is to provide electric switches for a receptacle or filing cabinet which function efficiently and automatically when a thin slip of paper is inserted therein.

These and other objects and features of the invention will become apparent from a reading of the following description and claim together with the accompanying drawing in which like parts are designated by like reference characters and wherein:

Figure 1 is a schematic view of the signal device;

Figure 2 is a perspective view of a card file of the device with portions broken away to reveal switch assembly;

Figure 3 is an enlarged front elevation of a portion of the file, the view taken along the line and in the direction of the arrows 3—3 of the Figure 4; and

Figure 4 is a vertical side sectional view of a portion of the card file taken along the line and in the direction of the arrows 4—4 of the Figure 3.

The instant invention consists of one or more files 2 containing a series of electric switches, a terminal or junction box 40 and one or more signs or maps 50 having indicia thereon and respective light bulbs which are electrically responsive to the said switches. Each of the aforesaid parts will be described in detail hereinafter and in the order just set forth.

As conducive to a clearer understanding of this invention, it may be pointed out that the device is designed primarily for use by police and fire departments to enable various officers in different locations or in different departments of a city to keep in touch with and observe the activities of their outside forces, the operations of which are reported to district headquarters from many precincts or outlying stations or by radio from district patrol cars. In operation, a record of a call is made on a slip of paper which is promptly inserted in the slip receptacle designated for the particular district from which the call came at the receiving headquarters. As long as the call is alive and the slip 9 remains in one of the pockets 33, immediately all of the other district headquarters or precincts throughout the city or county having maps 50, are informed of the activities of the department by the indicia on the illuminated map.

Many other and obvious uses may be made of this particular system. For example, it has been found also that the device is particularly adaptable for air raid observation and alarms. Air raid wardens or observers whose duty it is to constantly record and watch the movements of enemy planes or ships can, with this signal device, promptly notify the many important branches of the government and inform officials at various locations.

The file 2 consists of a metal cabinet 20 which has an orderly series of receptacles or pockets 33 arranged in a stepped or somewhat staggered manner so that a substantial portion of any or all of the cards 9 which may be placed therein are clearly visible at all times. The pockets or receptacles 33 are located on the front of the cabinet 20 and are individually marked or designated, such as by the letters "A," "B," "C" and "D" particularly indicated by the reference character 21. The cabinet 20 is built so that any number of them may be ganged or connected together in the event that more signals are needed than what is provided for by a single file cabinet 2.

Inside the cabinet 20 and in back of the front portion of the file having receptacles 33 therein, there is a set of fixed electric poles or contacts 27 which are electrically connected together at their support 26 by the ground wire 32. The supports 26 are mounted on the upright wood support member 25 which is rigidly affixed to the top and bottom portions of the cabinet 20. Above the fixed contacts and mounted on the walls of the cabinet 20, there is a series of movable springy contact members or poles 29. These have rigid brackets 22 and horizontal portions 28 thereacross to which the independent electric conductors 31 are attached. The lower portion 29a of the movable poles 29 are curved hook-like arms which move inward when a very light pressure is applied thereto. Each spring arm 29 is so mounted that the free end 39 below the curved portion 29a is normally a slight distance from the aforesaid fixed electric terminal 27.

The file pockets or receptacles each have slots or openings 36 and 37 in their front and rear walls 34 and 35 respectively, which openings are aligned and receive the curved portion 38 of the

movable switch terminal 29. The said curved portion 38 normally extends through both openings 36 and 37 as shown in the Figure 4 and is so balanced and so positioned therein that when a small slip of ordinary letter paper is sufficiently inserted in the opening 33 of the pocket, the curved or U-shaped nose-like portion 38 of the movable terminal 29 is forced outwardly of the receptacle and the movement of which causes the free end 39 of the arm 29 to contact the fixed pole 27 of the switch. In the Figure 4, the broken lines show and the character 29a indicates the alternate position of the switch member 29 when the electric circuit is closed. Other broken lines show and the character 9a similarly indicates the alternate position of the slip of paper 9 at that time.

The several movable switch arms 29 are positioned midway between the side walls of the cabinet 20 and are of light springy metal so that relatively little force is required to make the necessary electric contacts. When a card or paper slip 9 is drawn out or removed, the movable electric switch member immediately resumes its normal position and the switch is again automatically opened. However, the particular circuit may still be closed if a corresponding switch in another file is closed at that particular time.

The conduits 23 extending from the cabinet 20 contain one ground wire 32 for all of the fixed or non-movable electric members 27 and one wire or conductor 31 for each of the movable poles 29. These conduits 23 all lead to the terminal or junction box 40.

The terminal or junction box 40 is a conventional insulated box containing a number of convenient mountings for the ground wires 32, the individual signal wires 31 and for the various wires in the conduit 52 which leads to the sign or map 50 hereinafter described. The terminal box is constructed so that any number of tickler switches and incoming signal lines or sets of files can be connected to it and from which may run any number of outgoing signal lines or conduits 52. As details of the construction of junction boxes of this type are well known in the art and as no invention is herein claimed in the junction box per se, specific details of the construction of a suitable junction box is, therefore, omitted in these specifications.

The signs 50 consist broadly of maps or similar indicia, which for the purpose of illumination and explanation, are divided into districts "A," "B," "C" and "D," each of which has an animative symbol or signal light 51 mounted thereat. One pole of each of the light receptacles is grounded and is connected to a single conductor which leads to the terminal box 40; the other pole of each of the light receptacles have independent conductors running to the terminal box 40. The signs are so wired that each signal 51 thereon is responsive to a corresponding "A," "B," "C" or "D" switch 21 in the file cabinet 2.

The entire electric circuit is so arranged that certain light signals 51 on all of the signs or maps 50 will be illuminated simultaneously by the operation of tickler switches in the receptacles 33 having corresponding indicia 21 in any or all of the cabinets 20. For example, in the Figure 1, a paper slip or document 9 is shown inserted in the receptacle marked "A" in one of the files 2, whereas, the signal light 51a for the district "A" is illuminated on all of the maps 50. It is also wired so that several tickler switches of a single file 2 may be used simultaneously.

In the Figure 1, the portion thereof indicated by the Roman numeral I designates a room or building containing together the tickler switch file cabinet 2, the junction box 40 and the map 50. The portion of the figure marked II designates one of the many separate rooms in which only the maps 50 are located, and the portion marked III designates one of many separate rooms containing the files 2 only.

The described device may be easily constructed economically and rigidly out of simple available materials. The entire signal system may be enlarged, extended or contracted as needed without interrupting the operation of any of the existing operating members. It makes possible a permanent accurate record of the activities of the department where it is used, is fool-proof and requires no exceptional skill to operate, to install or to maintain.

While the invention has been disclosed in its preferred form, it is to be understood that the embodiment of the invention as described and illustrated herein is not to be considered in a limited sense as there may be many other forms or modifications of the invention which might also be considered to be within the scope of the appended claim.

I claim:

A device of the character described comprising a casing the front of which is inclined upwardly and rearwardly, a plurality of substantially vertically disposed open-top closed-bottom card or sheet receptacles of substantially equal depth disposed in stepped relationship to each other successively behind and above one another at the front of said casing so that the upper front face portion of no one of any plurality of cards or sheets of substantially equal depth and of greater depth than said receptacles disposed in any of the latter, respectively, is covered by any portion of any other of said cards or sheets, each receptacle including a bottom wall and front and rear walls, each of the front and rear walls having an opening therein, a plurality of fixed electric switch contacts within said casing individual to said receptacles, respectively, a plurality of cooperating switch arms very sensitive to flexure within said casing individual to said receptacles, respectively, means fixedly mounting each switch arm at one end, the other end portion of each switch arm being free and extending through the openings in the front and rear walls of the related receptacle into the path of a card or sheet deposited into the latter so as to be deflected thereby, and a contact at the free end of each arm for switch opening and closing cooperation with the related fixed contact by flexure of said arm.

THOMAS E. STORY.