C. ROBERTS.

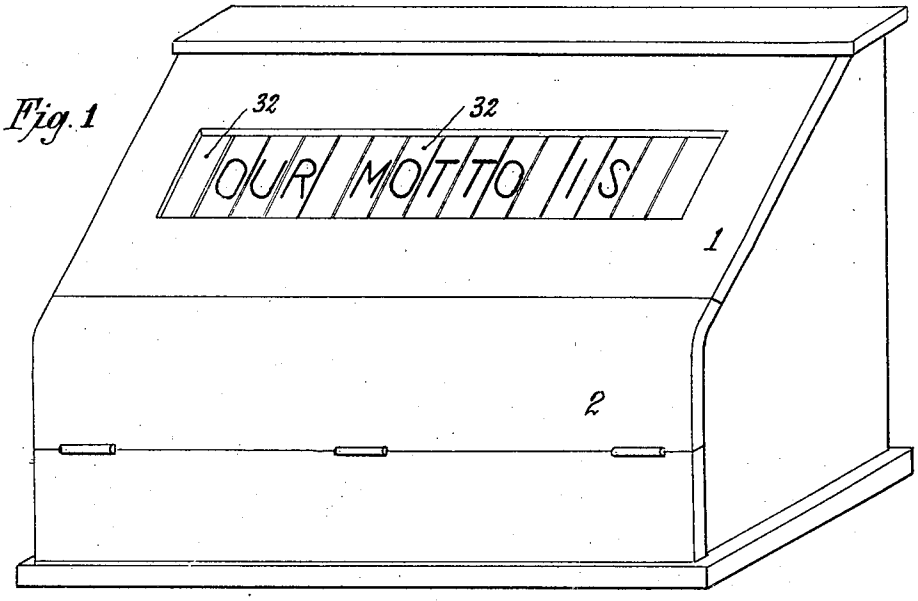
SIGN MECHANISM.

APPLICATION FILED JUNE 5, 1919.

1,336,585. **Patented Apr. 13, 1920.**

2 SHEETS—SHEET 1.

Fig. 1



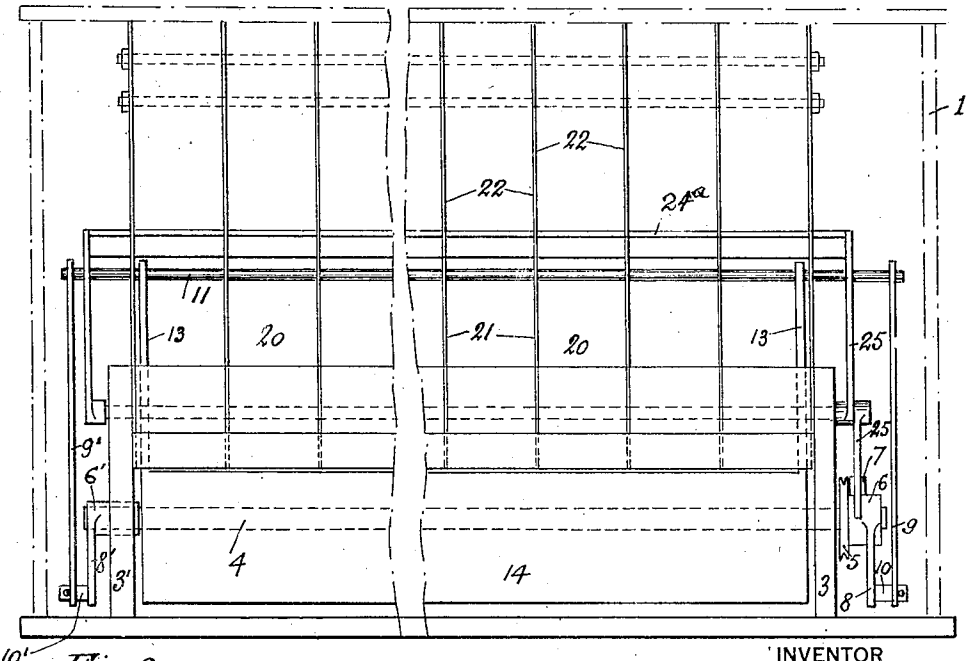


Fig. 2

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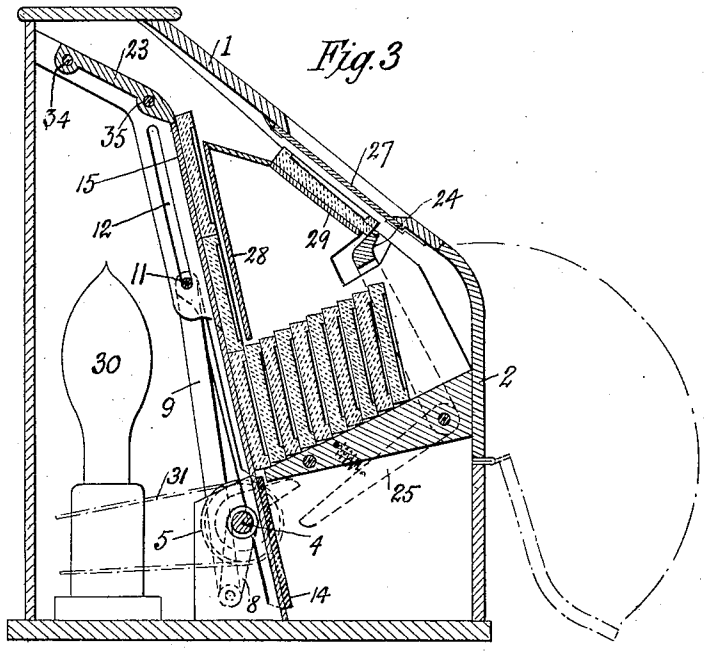


Fig. 3

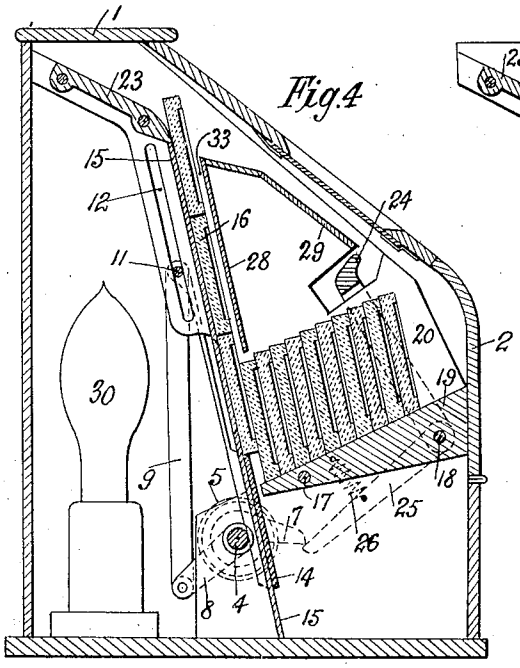


Fig. 4

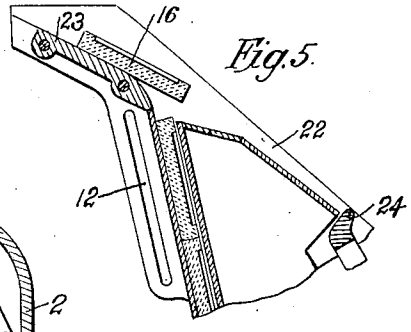


Fig. 5

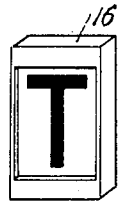


Fig. 6

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UNITED STATES PATENT OFFICE.

CHARLES ROBERTS, OF NEWARK, NEW JERSEY.

SIGN MECHANISM.

1,336,585. Specification of Letters Patent. Patented Apr. 13, 1920.

Application filed June 5, 1919. Serial No. 301,884.

To all whom it may concern:

Be it known that I, CHARLES ROBERTS, a subject of the King of Great Britain, and a resident of the city of Newark, county of Essex, and State of New Jersey, have invented a certain new and useful Improvement in Sign Mechanisms, of which the following is a specification, reference being had to the accompanying drawings, which form a part of the same.

An object of my invention is to provide a sign which will display in circuit successive reading matter or other characters.

Another object of my invention is to arrange the characters in rows and have each row travel as a unit.

Another object of my invention is to provide means for continuously automatically effecting the succession of display of each row of characters in its order.

Another object of my invention is to provide means for readily changing the matter to be displayed.

Other objects will be apparent upon the reading of this specification in conjunction with the drawings forming a part of the same, in which—

Figure 1 is a perspective view of a cabinet embodying my sign mechanism showing matter in display position;

Fig. 2 is a skeleton elevation view showing rods, levers and other detail used in the present embodiment of my invention;

Fig. 3 is an elevated cross section taken laterally through my device showing the slide in its lowermost position;

Fig. 4 is a similar view showing the slide in partially raised position and the other members in corresponding position;

Fig. 5 is a detail view showing a character block about to slide into display position; and

Fig. 6 is a perspective view of one of the character blocks used in this machine.

Referring now in detail to the drawings, in which similar numerals refer to similar parts throughout,

1 is a cabinet having a hingeable door 2. Attached to the floor of this cabinet, I have provided standards 3 and 3′, in which there is revolubly mounted the shaft 4 operated from the pulley 5 adapted to be connected to a source of power to continuously rotate said shaft and for this purpose this pulley 5 is keyed or otherwise integrally attached to the shaft 4 so as to drive the same. Also attached integrally to the said shaft 4 is a hub 6 having the trip lever 7. The links 8 and 8′, one on each end of the machine, are secured to the shaft 4 so as to travel therewith, and are connected to the links 9 and 9′ respectively through the pins 10 and 10′, the link 8 and pin 10 and the link 8′ and pin 10′ forming cranks which reciprocate the links 9 and 9′ respectively.

Carried at the upper ends of the links 9 and 9′ is a rod 11 which operates in the slots 12 located at opposite sides of the machine and is given a reciprocal motion through its connection with the links 9 and 9′ with the hub-cranks. Mounted on the rod 11 are links 13 which at their lower ends support the slide 14 which is carried thereby. I have provided a dulled transparent plate 15, frosted glass for instance, which is located between the standards 3 and 3′, which plate forms a support for the character blocks 16 hereinafter referred to.

Extending longitudinally through my machine are the supporting rods 17 and 18 on which is supported the inclined platforms 19. These platforms form the bottom of a series of magazines 20 designed to hold character blocks to be displayed until they are lifted therefrom by the slide 14 as hereinafter described. These magazines are provided with side walls 21 which are in alinement with the guides 22 and are shown as being made integral therewith. Any number of these magazines and guides may be provided depending upon the number of character blocks per line which it is deemed advisable to use.

The character blocks 16 are preferably made of glass or other transparent material. A platform 23 is mounted in the machine on the rods 34 and 35, which rods are suitably supported in the ends of the machine. Upon the slide 14 being raised, the line of characters at the bottom of the magazines 20 is carried with it to a point which clears the next succeeding characters in said magazines permitting them to fall against the slide 14 which is of less diameter than the diameter of the characters and thus effecting supports for the line of characters just moved upward when the support of the slide 14 is taken away from them. As the line of characters is raised to its channel 33, it finally arrives at a point where by gravity it falls back upon the platform 23 paralleling the same and by gravity slides between

the guides 22 until it is met by the stops 24 on the stop-bar 24ª. Upon the revolution of the shaft 4, the trip 7 operates against the spring held bell-crank 25 at the opposite end of which is the stop-bar 24ª. This stop-bar is normally held through the influence of the spring 26 in the position shown in Fig. 3 so as to place the stops 24 in the path of the character blocks behind the opening or glass 27. Upon the revolution of the rod 4, the trip 7 being carried with it engages one end of the bell-crank and presses the same downward withdrawing the stops 24 from the path of the displayed characters, allowing said characters to fall into position in the magazines 20 where by gravity they will continue a downward movement as other characters in the same magazine are removed therefrom as described until it is again engaged by the slide 14.

Between the dull transparent plates 15 and 28 is a passageway 33 in which the characters 16 are adapted to be raised. The plate or partition 29 is also dull and transparent, preferably made of glass or other suitable material. An electric lamp 30 or other suitable lighting medium is provided, the light from which penetrates through the plate 15, the characters 16 which rest thereon, the plate 28, the plate 29 and through the characters being displayed.

The pulley 5 is connected to a suitable source of power as for instance, an electric motor by means of the belt 31.

In practice, the cover of the cabinet is opened as indicated in dotted lines in Fig. 3 and if it is desired to put a talking sign into the machine, the letters of the words are arranged in order so that they will be projected in the manner shown in Fig. 1. Each of the character blocks 16 shown in cross section in Figs. 3 and 4 is one of a line of characters each of which is in a separate magazine, Fig. 1 indicating that there are fifteen such magazines in the machine therein shown, each magazine being represented by one of the subdivisions 32. Upon examination of Figs. 1 and 2, it will be seen that there are thirteen such rows, the row opposite the glass 27 in Fig. 3 corresponding to the row displayed in Fig. 1 of the drawing.

The desired wording having been arranged by the insertion of characters in the various magazines, the cover 2 is then closed and power is applied to the pulley 5 so as to continuously revolve the same. Upon the revolution of this pulley the cranks 8—10 and 8′—10′ are carried with it and reciprocate the links 9, 9′ in the slots 12. One of these cranks and link assemblies is located at each end of the machine and both are connected by the rod 11, which is given a reciprocal movement with the said cranks. The slide 14 connected to the rod 11 by the links 13 is also given a reciprocal movement with the said rod. Upon the upward movement of this slide, it engages the row of characters in the magazines adjacent the plate 15 and carries the same upward to a point beyond the top of the next succeeding row of characters upon which event the latter row falls into place against the slide and under the row which has just been raised effecting a support for the same. As the slide recedes below the characters in the magazines the lower row of characters will fall against the plate 15 and be in position to be raised by the slide upon its succeeding upward movement. Upon the third upward movement in the embodiment of my invention shown, the top row of characters will change their position by falling back upon the ledge 23 when the center of gravity of said row of characters has been passed giving the said row the position shown in Fig. 5. By gravity, this row of characters slides until it reaches the stops 24 and is held by said stops until the trip 7 controlled by the shaft 4 engages and presses downward the spring held bell-crank 25 and thus withdraws the support of said stops 24 from the row of characters in display position permitting them to slide down to their respective magazines and take their proper position therein waiting for their turn to be again raised and forwarded to display position as described.

In the present embodiment of my invention, I have shown a lamp 30 which sends its rays through the plates 15, 28 and 29, which are preferably made of glass, the plates 28 and 29 being dulled as by sand-blasting or frosting so as to prevent the characters in the passage-way 33 from being projected onto the characters in display position behind the glass 27, and interfering with the reading thereof.

I have shown and described what I believe to be the best embodiment of my invention, but I do not wish to be confined in patent protection to the embodiment shown, but what I desire to cover by Letters Patent is set forth in the appended claims.

Claims.

1. In sign mechanism, a series of magazines arranged in a row and adapted to hold character blocks, the floor of said magazines being in inclined position, a slide adapted to raise the lowest row of character blocks in said magazines to a point above the top of the adjacent row of characters in said magazines, said slide being adapted to return to a point below the lowest point of the row of character blocks held in said magazines, means for reciprocating said slide, and subject them to a changed plane, inclined chutes down which said character blocks are adapted to slide, stops in said chutes adapted to hold said character blocks in said chutes and

means for withdrawing said stops and permitting the said character blocks to slide into said magazines.

2. In sign mechanism, a front transparent plate and a rear transparent plate, a plurality of partitions arranged in parallel between said plates, said plates and partitions forming chutes down which transparent display blocks are adapted to slide, stops at the bottom of said rear plate and extending into said chutes, which stops are adapted to hold said display blocks in position therein, means for withdrawing said stops from said chutes, and a lamp located behind said rear transparent plate adapted to project its rays therethrough.

3. In sign mechanism, a front transparent plate and a rear transparent plate, a plurality of partitions arranged in parallel between said plates, said plates and partitions forming chutes down which transparent display blocks are adapted to slide, stops at the bottom of said rear plate and extending into said chutes, which stops are adapted to hold said display blocks in position therein, a bell-crank carrying said stops at one end and means for rocking the same at the other end to withdraw said stops from the pathway of said chutes, and a lamp located behind said rear transparent plate adapted to project its rays therethrough.

4. In sign mechanism, a transparent plate along which rows of character blocks are adapted to be raised, a second transparent plate forming a passageway with the first first mentioned plate and a slide adapted to raise character blocks into said passageway and means for operating said slide.

5. In sign mechanism, a slide for raising character blocks and means for reciprocating the same consisting of a revoluble shaft, cranks carried thereby, a rod, slidable links mounted on said cranks at one end and on said rod at the other end, the said rod being adapted to slide with said links in guides, and links connected to said rod and adapted to support said slide.

CHAS. ROBERTS.