No. 873,471. PATENTED DEC. 10, 1907.

J. A. VIGER.

AUTOMATIC DISPLAY SIGN.

APPLICATION FILED JAN. 19, 1907.

3 SHEETS—SHEET 1.

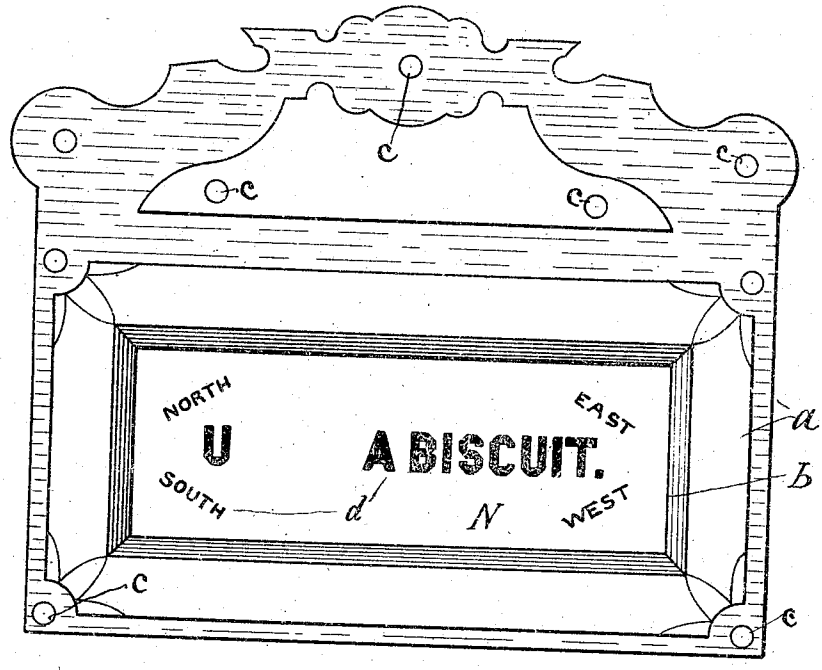


Fig. 1.

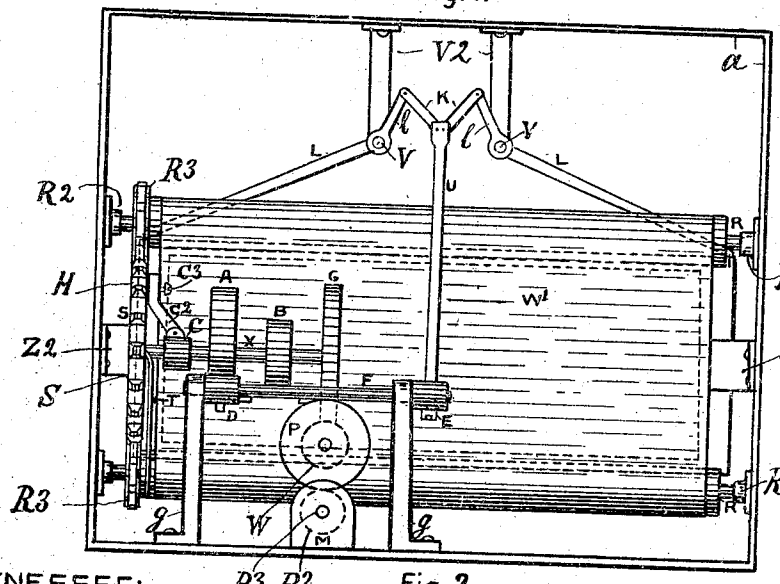


Fig. 2.

WITNESSES:

D. E. Carlsen.

E. C. Carlsen.

INVENTOR:

John A. Viger.

BY his ATTORNEY

A. M. Carlsen

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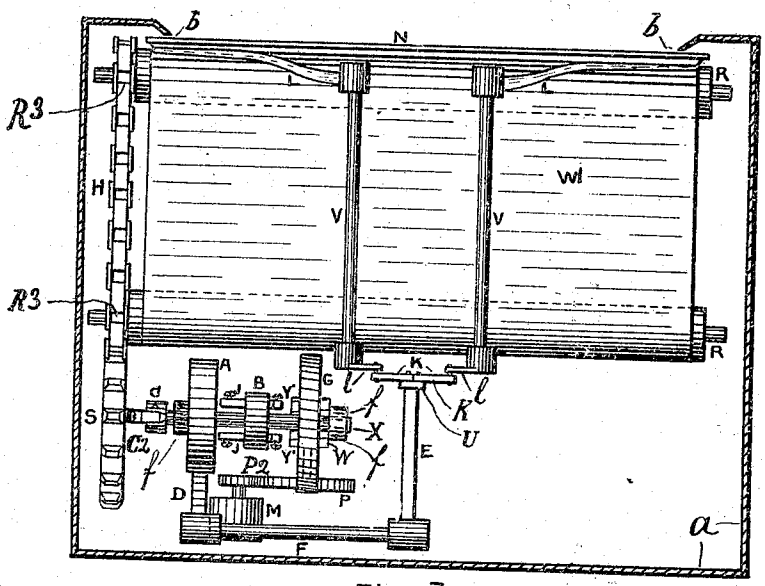


Fig. 3.

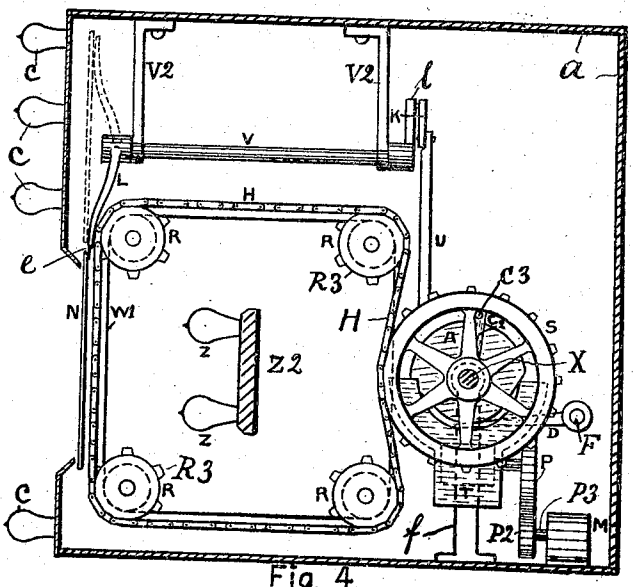


Fig. 4.

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3 SHEETS—SHEET 3.

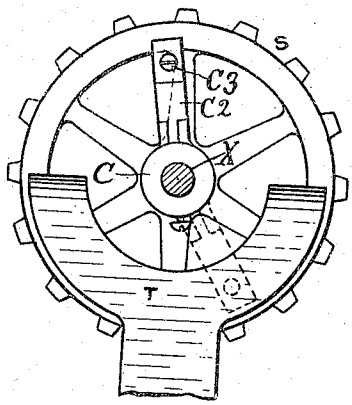


Fig. 5.

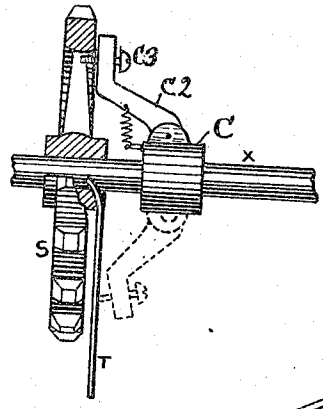


Fig. 6.

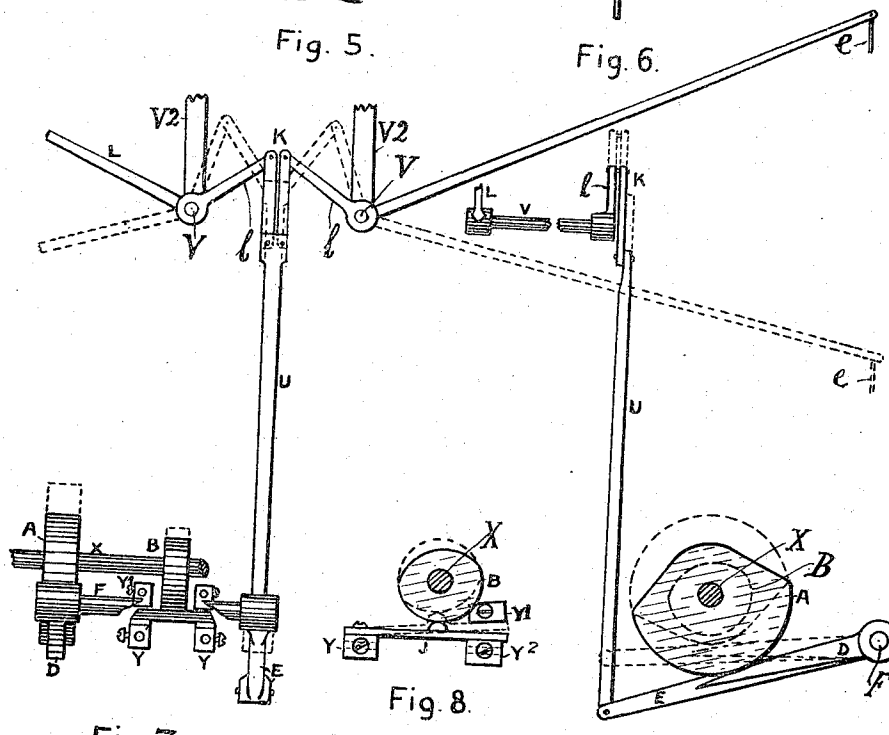


Fig. 7

Fig. 8.

Fig. 9.

WITNESSES:

D. E. Carlsen

E. C. Carlsen.

INVENTOR:

John A. Viger:

BY his ATTORNEY:

A. M. Carlsen.

UNITED STATES PATENT OFFICE.

JOHN A. VIGER, OF ST. PAUL, MINNESOTA, ASSIGNOR TO JAMES D. LOTZ, OF STILLWATER, MINNESOTA.

AUTOMATIC DISPLAY-SIGN.

No. 873,471. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed January 19, 1907. Serial No. 353,050.

To all whom it may concern:

Be it known that I, JOHN A. VIGER, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Automatic Display-Signs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to moving display signs of the class usually mounted in or over store windows, or more frequently suspended from or held by a bracket projecting out from the wall; and the object is to provide an electrically operated and electrically lighted automatically changed, display sign of said class. The mechanism is inclosed in a casing. Said object we attain by the novel construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the apparatus. Fig. 2 is a rear elevation thereof with the back of the casing removed. Fig. 3 is a top view of the sign with the top part of the casing removed. Fig. 4 is an end elevation of the apparatus looking from the left end of Fig. 3 with the end of the casing intersected. Figs. 5 and 6 are detail views of the sprocket wheels S and adjoining parts. Fig. 7, 8 and 9 are details of cam motion for lifting and lowering a shutter and switching the lights.

Referring to the drawing by reference letters, *a* designates the casing or frame of the apparatus; it has a front opening *b* and near the same electric lights *c* adapted to throw light upon a permanent sign represented in the drawing by *d*, painted upon a shutter N, which is suspended by links *e*, rocker-arms L, rock shafts V, journaled in hangers V^2, rocker arms *l*, links K and rod U; the latter being reciprocated by a rocker arm E fixed on a shaft F, journaled in bearings *g* and having an arm D rocked by a cam A, fixed on a shaft X journaled in bearings *f* (shown in Fig. 3 and 4) and rotated by a worm gear G, worm screw W, and gear wheel P, driven by a pinion P^2 fixed on the shaft P^3 of an electric motor M run by electric wires (not shown). Owing to the shape of the cam A it is obvious that the shutter will periodically occupy alternately a lowered position so that the sign *d* may be read, and an elevated position holding it out of sight while a transparent sign W^1 may be read against the electric lights *z* fixed to a bar Z^2 back of it. Said sign W^1 is an endless piece or strip of canvas stretched over and moved by four rollers R, journaled at R^2, (see Fig. 2), and having sprocket wheels R^3 driven by an endless chain H and the sprocket wheel S which is loose on the shaft X.

Several different signs of different colors may be printed on the canvas, and each of them is exposed for a sufficient period to be read, and then the next one is exposed. During such changing of the signs they are covered by the shutter and single sign, which is then lowered and exposed to reading in the light of the outer lamps.

The motion of the signs just described is caused by the means already described as to sign *d*, and as to the endless canvas sign by the following mechanism: On the shaft X is fixed a collar or head C, carrying a pivoted spring-pressed arm C^2, having a peg or a screw C^3 engaging an arm or spoke of the sprocket wheel S and turning it a predetermined part (about one half) of a revolution, whereupon the arm is thrown out and held out of engagement with the wheel during the balance of the revolution by a stationary cam plate T, (see Figs. 5 and 6); and during such disengagement a cam B, fixed on shaft X (see Figs. 7 and 8), holds the spring-arm J of an electric switch downward, whereby the terminals Y and Y^2 close a circuit causing the lights Z^2 behind the canvas to shine; and when said cam turns in the opposite position the spring arm closes the contact between the terminals Y and Y^1, whereby the outside lights C are lighted and the inside lights Z^2 are extinguished.

From the above description it will be understood that the motor is running constantly, but the clutch arm C^2, the fixed cam T and the various other cams and mechanisms described cause the two signs and their lights to operate automatically intermittingly, and thereby draw attention to the sign and make the alternate reading interesting.

What I claim is:—

1. In a sign of the class described, a housing or casing having a display opening, a se-

ries of parallel rollers mounted in the casing and a transparent endless canvas stretched over and moved by the rollers and having various signs upon it to be displayed at the opening; electric lights back of the canvas displayed, a constantly running electric motor, means driven by the motor for turning the rollers intermittingly, means for extinguishing the lights while the rollers turn and change the signs; lights outside the casing near the opening, a shutter closing the opening during the moving of the canvas signs, and means operated by the motor for moving the shutter intermittingly and means for extinguishing the outer lights during the periods the shutter is open; said shutter having upon it a sign adapted to be displayed in the light of the outer lamps while the shutter is closed.

2. In a sign of the class described, a frame or casing having a display opening, an endless transparent canvas sign adapted to display various advertisements periodically at the opening; rollers moving the canvas, an endless chain and chain wheels on the rollers to rotate them in unison, a sprocket wheel moving the chain, a shaft revolving in the sprocket wheel, a pivoted clutch arm carried by the shaft and adapted to engage and turn the wheel, a stationary cam-plate disengaging the arm from the wheel during a part of each turn of the shaft; the cams A and B fixed on said shaft, a worm wheel fixed on the shaft, a worm screw turning the same, an electric motor operatively connected with the worm screw; a rock shaft with two arms, one of which is operated by the cam A, a shutter with a sign on it arranged to appear periodically in front of the canvas sign, a rod connecting the shutter with the other arm of the rock-shaft so as to let the sign be operated by the arm and display its own sign and conceal the canvas signs during their motion and display them when they are at rest, an electric switch operated by the cam B, electric lights lighted and extinguished periodically and alternately back of the canvas signs and outside the casing to throw light on the sign on the shutter, the alternating periods of the use of the inner and the outer lights being regulated by the switch and the cam B operating it.

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN A. VIGER.

Witnesses:

CHARLES MURREY,

H. L. MILLS.