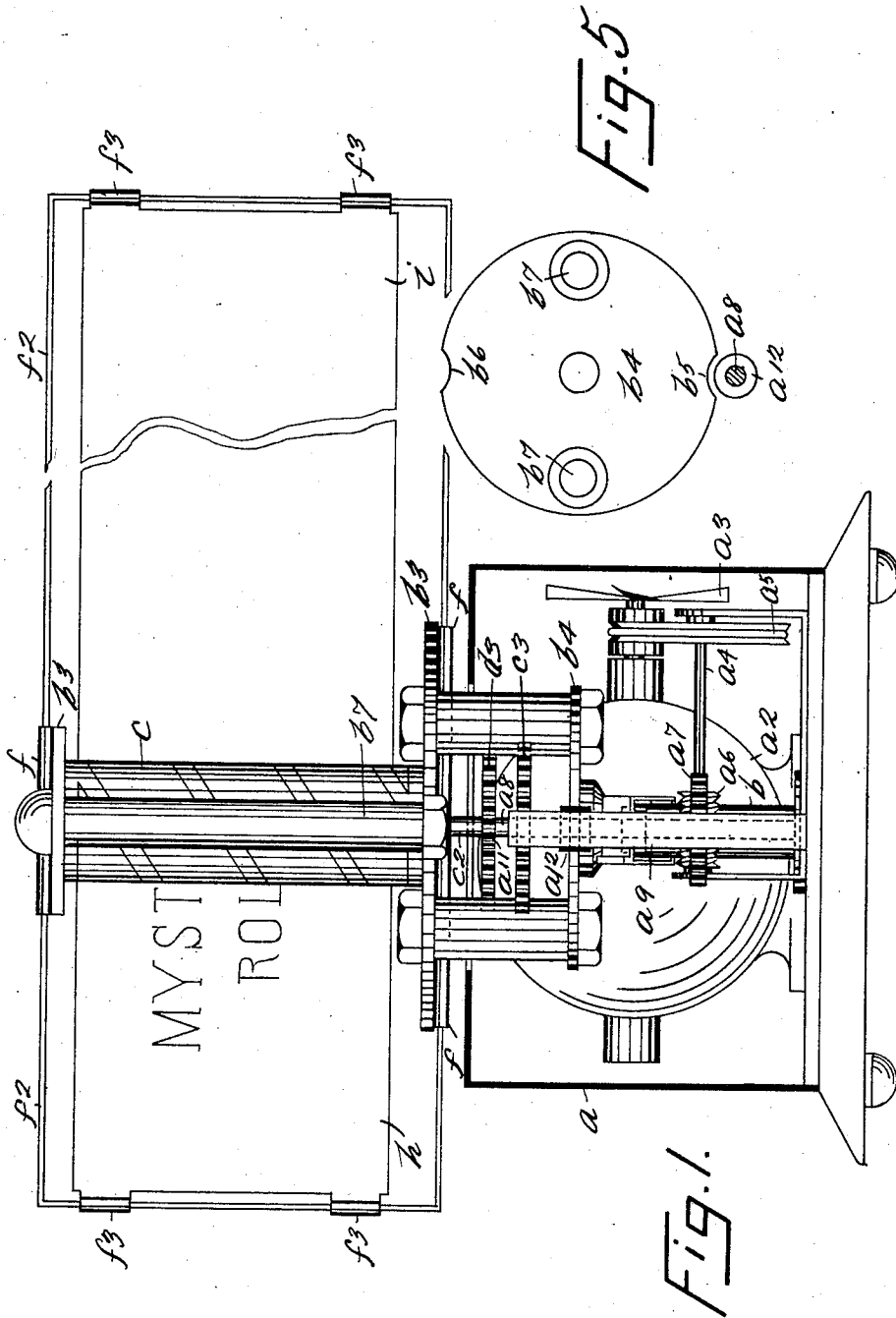


E. V. GUSTAVSON.
ADVERTISING DEVICE.
APPLICATION FILED OCT. 24, 1911.

1,047,047.

Patented Dec. 10, 1912.

4 SHEETS—SHEET 1.



Witnesses
Chas A. Earsall
Walter S. Fischer

Inventor
Ellis V. Gustavson
By Attorney J. Chris. Fisher

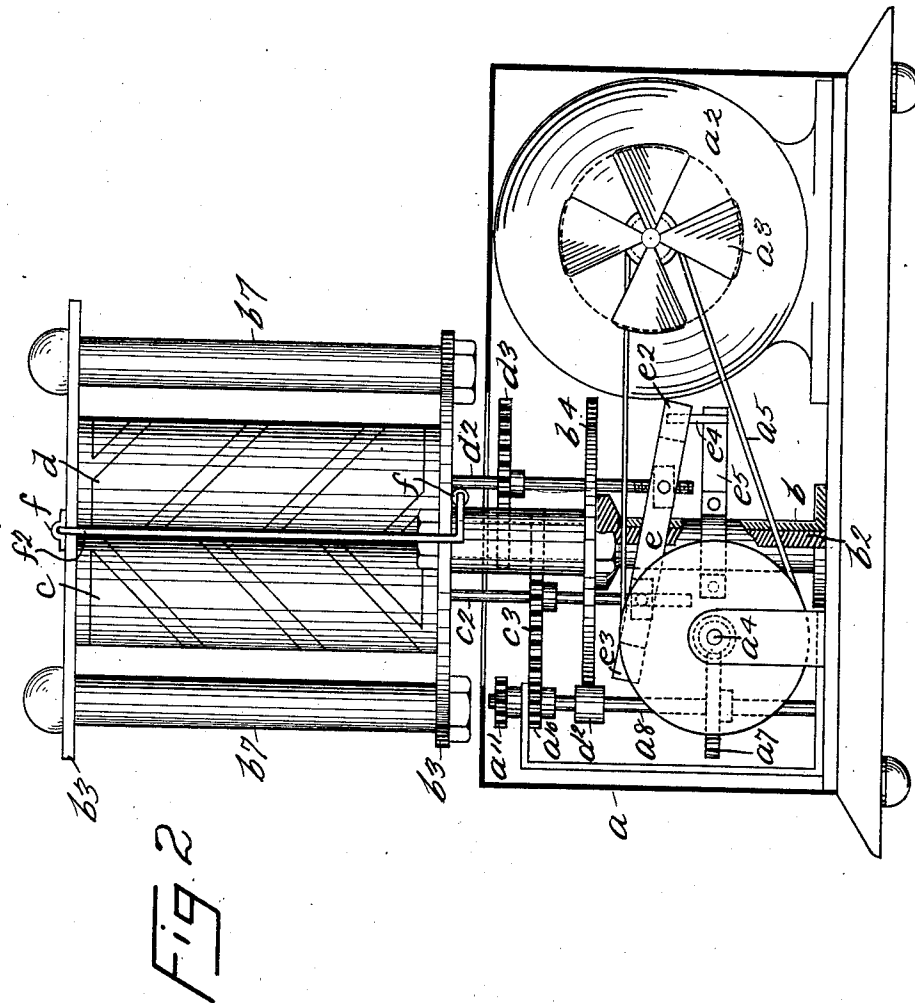
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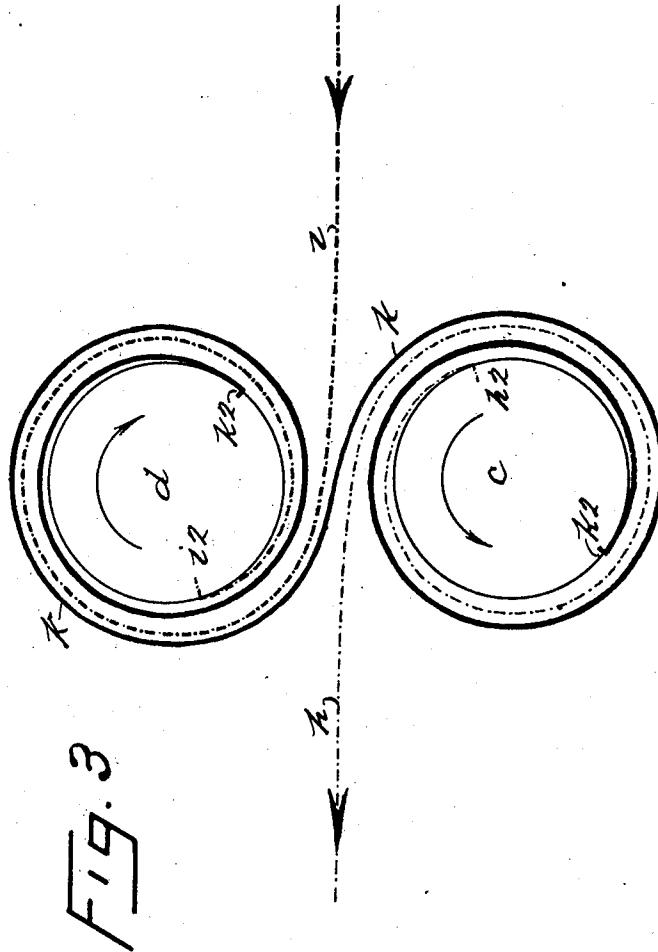
Inventor
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Witnesses:
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Walter S. Fischer

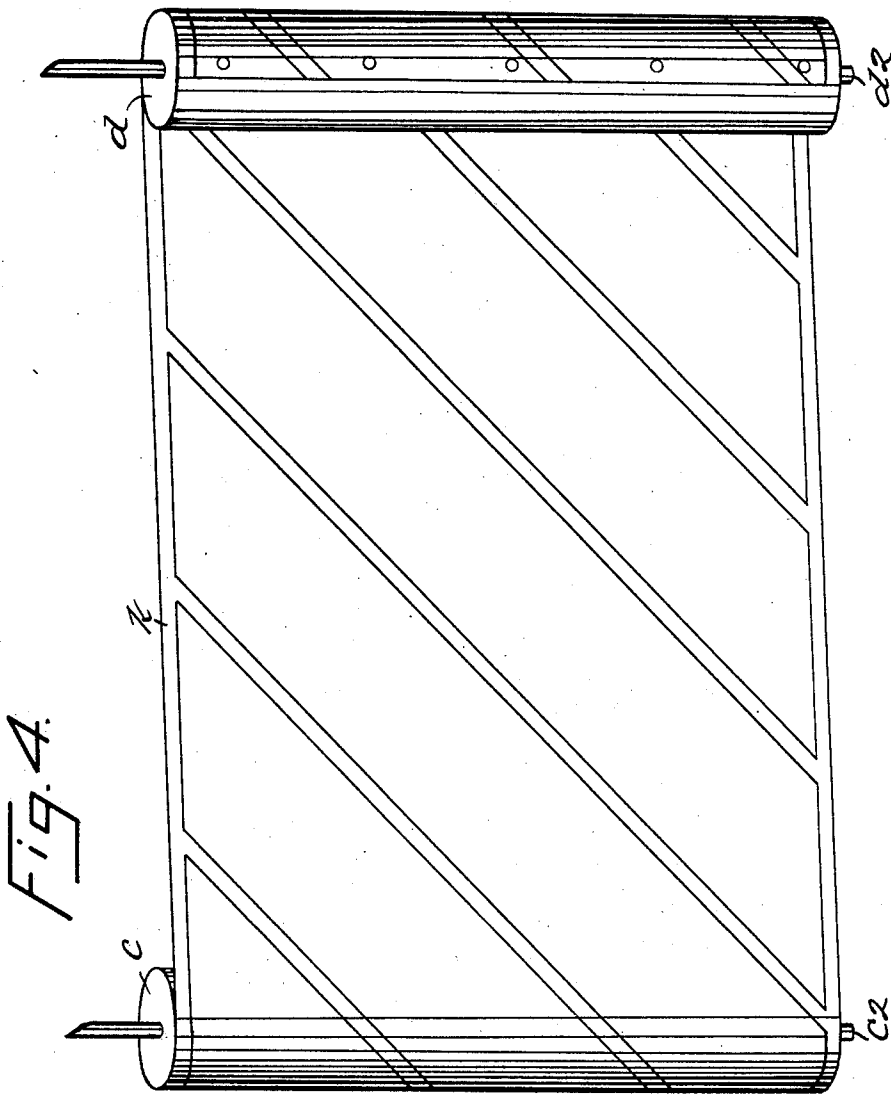
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4 SHEETS—SHEET 4.



Witnesses:
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Inventor
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UNITED STATES PATENT OFFICE.

ELLIS V. GUSTAVSON, OF NEW YORK, N. Y.

ADVERTISING DEVICE.

1,047,047.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed October 24, 1911. Serial No. 656,385.

To all whom it may concern:

Be it known that I, ELLIS V. GUSTAVSON, a citizen of the United States of America, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Advertising Devices, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to mechanical movements, particularly for use in advertising and display devices, and the object thereof is to alternately cause printed or other matter to appear and disappear in a mystifying manner.

A further object is to have the said matter upon a sheet of paper or cardboard apparently moving between rollers, the said matter being displayed upon one side of said rollers and the paper or card on the other side of the rollers being blank or, if desired, having other matter thereon, or the paper displayed on opposite sides of the rollers may be differently colored, or of different designs.

A further object is to provide a covering for the said rollers which give them the appearance of being striped or of other suitable design whereby the mystification is enhanced.

A further object is to provide means, preferably electrically actuated, for moving the paper and apparently rotating the said rollers.

A further object is to provide means for intermittently revolving the apparatus to display the reverse face thereof, this being also of the same general appearance and effect.

A further object is to provide a supplemental sheet of material which moves with the paper sheet and is designed to give the appearance of roller rotation.

A further object is to so construct the said rollers as to permit of ready substitution of the paper sheet and of the supplemental sheet, if desired; and a still further object is to provide such a device which is extremely attractive and mystifying, which is readily portable and easy of installation in different places, and which is very simple in construction whereby there is no likelihood of its getting out of order under normal conditions.

My invention is fully described in the following specification, of which the accompanying drawings form a part, in which the separate parts are designated by the same reference characters in each of the views, and in which:—

Figure 1 is a front elevation of my invention in operative position, the mechanism housing being broken away to show the operating parts; Fig. 2 is an end view thereof, similar to Fig. 1; Fig. 3 is a diagrammatic showing of the arrangement of the sheets and rollers, and method of producing the result; Fig. 4 is a detached view of the rollers and roller covering sheet which produces the effect of roller rotation; Fig. 5 is a detached view of a detail of the device.

In the drawings forming a part of this application I have shown a casing *a* having a motor *a*² therein provided with a fan *a*³ for cooling purposes and connected with a shaft *a*⁴ by means of a belt *a*⁵ or equivalent, said shaft carrying a worm *a*⁶ enmeshed with a worm-gear *a*⁷ carried by a vertical shaft *a*⁸ rotatable in a support *a*⁹ and provided with two spur pinions *a*¹⁰ and *a*¹¹ and with a rubber roller *a*¹², all secured thereto.

Arranged within the casing *a* is a vertical sleeve or tube *b* serving as a support for a rotatable shaft *b*² carrying a frame *b*³ within which are two rotatable rollers *c* and *d*, the shafts *c*² and *d*² of which extend downwardly into the casing *a* and are provided with spur gears *c*³ and *d*³, respectively, the former of which is shown as enmeshed with the pinion *a*¹⁰ and the latter being adapted to be brought into engagement with the pinion *a*¹¹ in a manner hereinafter described, and the frame carrying shaft *b*² is provided with a disk *b*⁴ adapted to be revolved by the rubber roller *a*¹², said disk being recessed in opposite edges, diametrically, as shown at *b*⁵ and *b*⁶, said roller being adapted to enter the same in either of two positions into which the disk is carried and locked, as hereinafter explained, said roller being of soft rubber and closely engaging the disk, within the corresponding recess, whereby said roller engages the edge of the recess and disk periphery and revolves said disk when free to revolve, the roller being shown at a slight distance from the disk in order to clearly distinguish therebetween, and, by reference to Figs. 1 and 2,

it will be seen that the disk carries two vertical posts b^7 which, in turn, support the frame b^3 , thus insuring the revolution of the frame when the disk b^4 is revolved, the top of the casing a being provided with an opening large enough to permit a clearance of the revolving parts carried by the frame.

The roller shafts c^2 and d^2 are each screw-threaded at the bottoms thereof and are engaged in opposite ends of a bar e , or adjacent thereto, the extreme ends of which, e^2 and e^3 are adapted to alternately engage with a pin e^4 mounted in an arm e^5 firmly held to a stationary part of the casing or, as shown, to the tube b , the rotation of the said shafts, by means of the screw-threads thereon, serving to raise one end and lower the other end of the bar e , thus clearing the engaged end and placing the other in position for engagement when carried around through an arc of 180 degrees by the disk b^4 and rubber roller a^{12} , thus insuring a period of rest for the frame b^3 determined by the speed of the sheet rollers c and d , the pitch of the thread on the shafts thereof, and the height of the pin e^4 , these being gaged for a purpose later explained.

Horizontally slidable in suitable guides f on the frame b^3 is a rack f^2 to each end of which is connected one end of two sheets of paper or cardboard h and i by means of suitable clips f^3 , and the opposite ends of which pass to and are connected with the rollers c and d , respectively, in any desired manner, as shown at h^2 and i^2 , and a sheet of rubber or other suitable material k , of a length to permit of a number of turns about one or the other of the rollers, is also secured thereto, as shown at k^2 , said sheet being provided with a design, preferably diagonal, colored, stripes, on both sides, as shown in Fig. 4, as also in Figs. 1 and 2, on the rollers c and d , and the cardboard sheets h and i are each of a length approximating that of the sheet k and, by reference to Fig. 3, it will be seen that the sheet k completely covers the sheets h and i wound upon corresponding rollers, only that portion of each sheet h and i extending beyond the rollers being visible to a person observing the operation and, in this connection, it may be stated that the view in Fig. 3 is somewhat exaggerated as to distance between the rollers and limited as to the amount of the sheets h , i , and k , wound thereon, as I employ eight or ten windings on my present apparatus, but this may be increased at will, according to the mechanical construction, and I provide printed matter, descriptive of merchandise, or otherwise upon one face of each of the sheets h and i , in the form of construction shown being upon the side nearest the roller upon which it is adapted to be wound.

From the position of the parts shown, if

the motor be actuated, the shaft a^1 rotates the shaft a^8 at a relatively slow speed, thus rotating the shaft c^2 and roller c to wind the sheets h and i thereon and unwind the sheets k and i from the roller d , the sheet i thus unwound moving outwardly and forcing the rack f^2 therewith, said rack being also moved by the rewind of the sheet h , and the printed matter disappears and the blank, or otherwise printed than the sheet h , side of the sheet i appears, thus producing the appearance of but one sheet of paper being moved between the rollers and the matter thereon being removed by the rollers, or this may be reversed by having a blank sheet apparently pass between the rollers and appear on the opposite side thereof bearing printed matter, or various other modifications may be employed wherein the apparently opposite ends of a sheet of paper undergo a distinct change in its passage between the rollers. During this roller rotation the shafts thereof have raised the end e^2 and depressed the end e^3 of the bar e , thus clearing the pin e^4 and permitting the rubber roller a^{12} to revolve the disk b^4 and frame b^3 through an arc of 180 degrees, at which time the bar e is again engaged by the pin e^4 and the frame b^3 is again stationary, but in this operation the reverse sides of the sheets h and i are brought to the front and the result just described is repeated, the result being reversed, however, for the reason that the gear d^8 is then enmeshed with the pinion a^{11} and the direction of rotation of the roller d being then reversed over that obtaining when the sheets were being unwound therefrom, this reversing of the frame occurring at predetermined intervals and the sheets being alternately wound upon and unwound from the corresponding rollers and the printed matter appearing and disappearing, according to the direction of operation, the reverse operation being illustrated in Fig. 3, wherein the roller d is the driven and the sheets i and k being wound thereon and the sheets h and k being unwound from the roller c .

It will thus be seen that I provide a device which gives the appearance of a sheet of paper presenting different surfaces on either side of a pair of rollers which move the same between them, said rollers being rotated to so move it and presenting the appearance of individuality because of the stripes thereon, said stripes clearly showing the roller rotation, the sheet h concealing the sheet k from one side and the sheet i from the opposite side of the device, in its passage from one roller to the other and, the sheets being all relatively thin, the visible portions of the sheets h and i are apparently in the same plane, as they are, almost.

It will also be seen that I may adapt the

parts of my device for sheets of paper of various lengths, the reversing mechanism being altered correspondingly, and the rack f^2 made of corresponding length, and I may
5 present surfaces on the paper sheets of numerous kinds and classes, aside from descriptive matter, to meet varying conditions, or to produce other and, possibly, more mystifying results, and various changes in and
10 modifications of the construction shown and described may be made, in order to accomplish the desired results, without departing from the spirit of my invention or sacrificing its advantages, and, with a reservation to myself of all such changes, what
15 I claim as new and desire to secure by Letters Patent, is:—

1. A display device, comprising a support, a frame thereon, rollers in said frame
20 having, each, a sheet of paper thereon, the ends of which are outwardly and oppositely directed, a rack for maintaining said sheets in approximately the same plane, said sheets presenting, each, a distinctive appearance,

and means for removing said rack and 25 sheets backwardly and forwardly.

2. A display device, comprising a support, a frame thereon, rollers in said frame having, each, a sheet of paper thereon, the ends of which are outwardly and oppositely
30 directed, said sheets presenting, each, a distinctive appearance, means for moving said sheets inwardly and outwardly, and outwardly and inwardly, alternately, and a strip of material, bearing a suitable design, 35 wound upon said rollers and concealing the portion of the paper sheets thereon, and movable with said rollers, said strip visually demonstrating the roller rotation because of the design thereon.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 19th day of October, 1911.

ELLIS V. GUSTAVSON.

Witnesses:

GEORGE F. BENTLEY,

J. C. LARSEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."