No. 843,889. PATENTED FEB. 12, 1907.

W. H. GILMAN & C. B. KENDALL.

APPARATUS FOR ADVERTISING, &c.

APPLICATION FILED MAY 8, 1905.

2 SHEETS—SHEET 1.

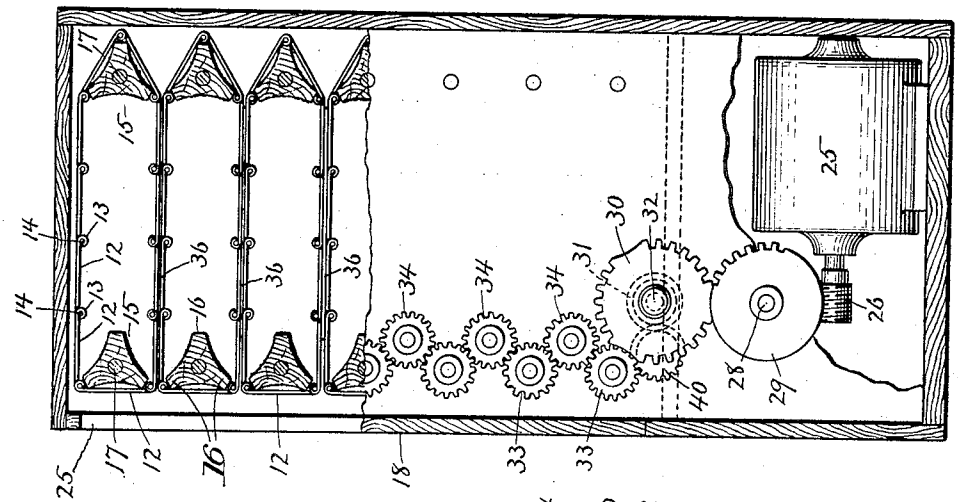


Fig. 2.

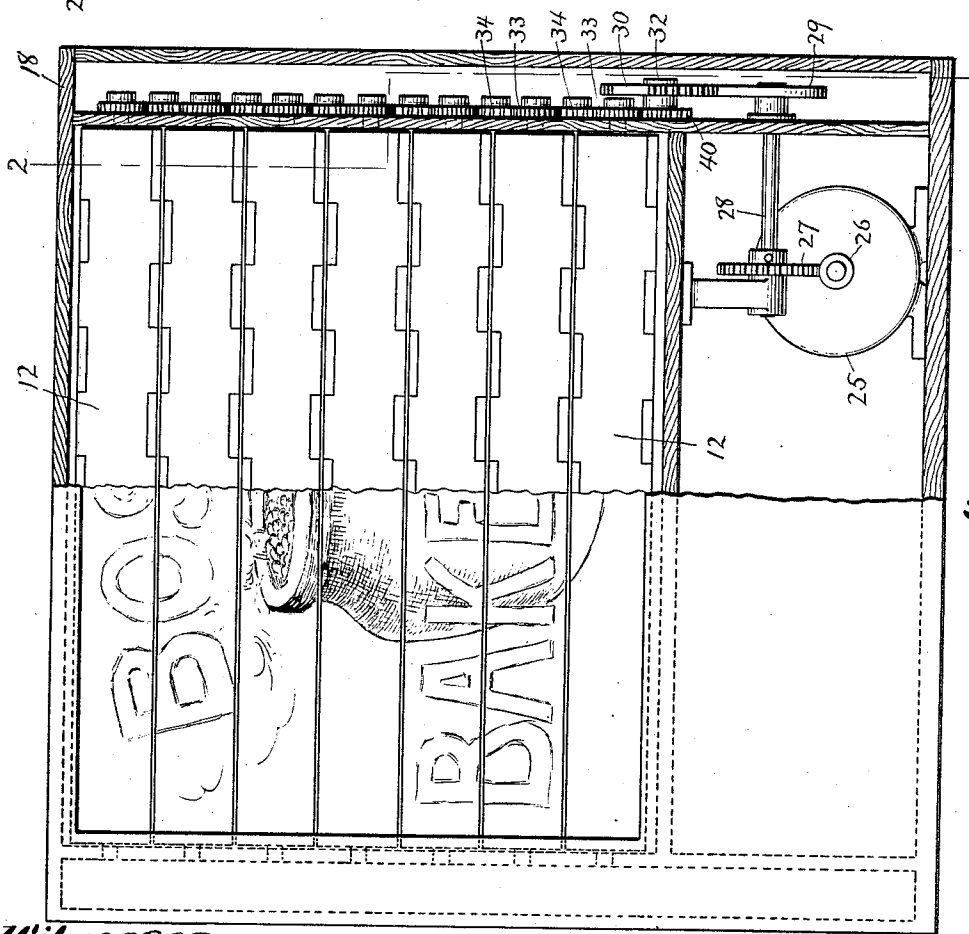


Fig. 1.

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2 SHEETS—SHEET 2.

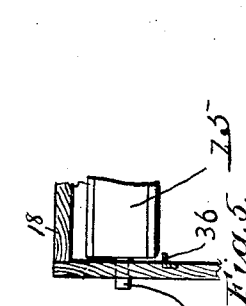


Fig. 5.

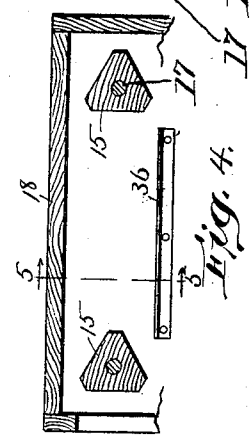


Fig. 4.

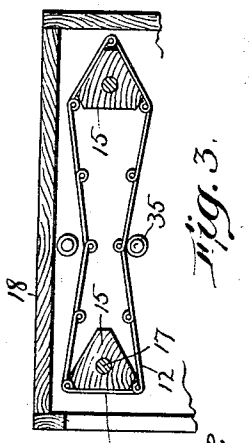


Fig. 3.

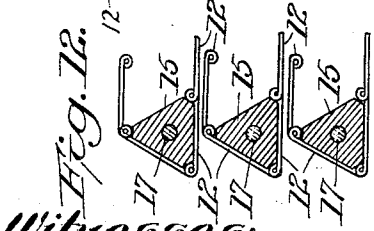


Fig. 12.

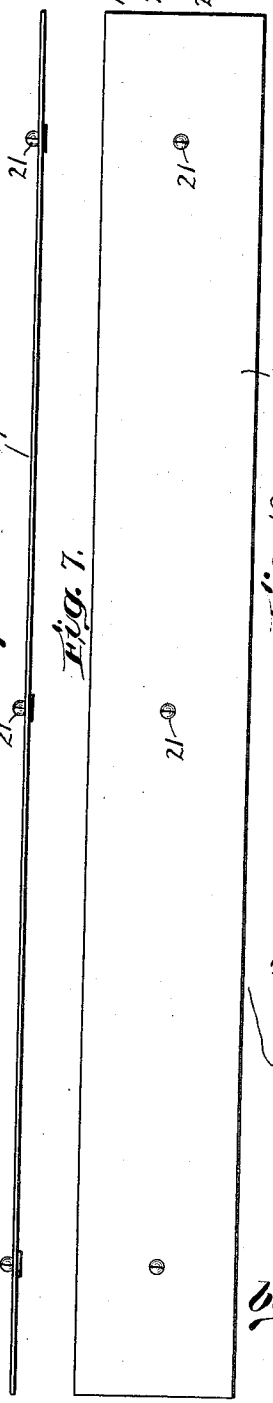


Fig. 6. Fig. 7.

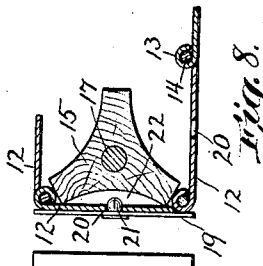


Fig. 8.

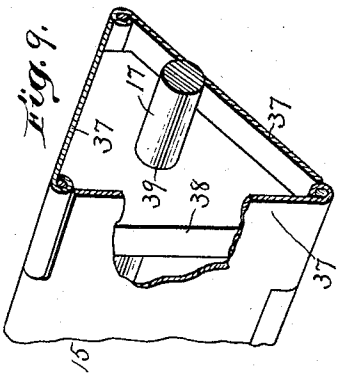


Fig. 9.

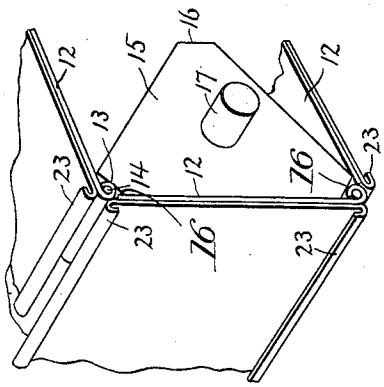


Fig. 10.

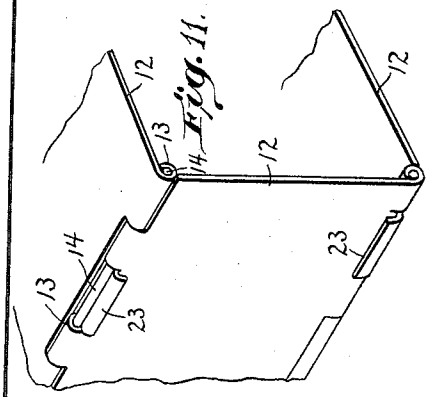


Fig. 11.

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UNITED STATES PATENT OFFICE.

WILLARD H. GILMAN, OF MEDFORD, AND CHARLES B. KENDALL, OF MALDEN, MASSACHUSETTS, ASSIGNORS, BY MESNE ASSIGNMENTS, TO CHARLES B. KENDALL.

APPARATUS FOR ADVERTISING, &c.

No. 843,889. Specification of Letters Patent. Patented Feb. 12, 1907.

Application filed May 8, 1905. Serial No. 259,278.

To all whom it may concern:

Be it known that we, WILLARD H. GILMAN and CHARLES B. KENDALL, of Medford and Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Advertising, &c., of which the following is a specification.

This invention has for its object to provide a simple and effective means for successively displaying sign strips or sections carrying advertising or other matter, either in the form of pictures, words, or other characters or a combination of pictures and words.

The invention consists in the several improvements which we will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a partial front elevation and a partial longitudinal section of an apparatus embodying our invention. Fig. 2 represents a section on line 2 2 of Fig. 1. Figs. 3 and 4 represent views similar to portions of Fig. 2, showing certain features hereinafter described. Fig. 5 represents a section on line 5 5 of Fig. 4. Fig. 6 represents an edge view of one of the sign-strips. Fig. 7 represents a side view of the sign-strip shown in Fig. 6. Fig. 8 represents a fragmentary sectional view showing a feature of construction hereinafter referred to. Figs. 9, 10, and 11 represent fragmentary perspective views showing certain alternative constructions of parts of the apparatus. Fig. 12 is a detail sectional view showing the relative positions of the trilateral supports and panels at a point substantially midway of their step-by-step rotary movements.

The same reference characters indicate the same parts in all of the figures.

Our invention is embodied in an endless belt having a series of advertising-panels of uniform width extending at right angles to the direction of movement of the belt.

The panels are preferably a series of flat plates 12 12 of uniform width flexibly connected to form an endless belt, the strips 12 extending from edge to edge of the belt and at right angles to the direction of its motion. The plates are flexibly connected, preferably by means of hinges, which may be formed by bending or rolling the adjacent edges of the plates to form alternating tubes or sockets 13 and extending wire hing-pintles 14 through the said sockets. The belt is supported by two rotary supports 15 15, each of which is prismatic in cross-section and preferably substantially trilateral, as shown in Fig. 2. Each support therefore has preferably a series of three faces, each of which corresponds in width to that of the belt plates or panels 12, the plates being proportioned so that their body portions between the hinges are adapted to rest squarely upon the faces of the supports, while the hinges project from opposite edges of the said faces. In the construction shown in Figs. 2, 3, 4, and 8 the supports are cut away or truncated at their corners, as shown at 16, to accommodate the hinges, the latter projecting from the inner surface of the belt. Each support is affixed to a shaft 17, said shafts being journaled in bearings in a supporting frame or casing 18. The outer surfaces of the plates 12 are provided with suitable advertising or other matter in the form of pictures, letters, or other characters, or a combination of the two. These may be painted on or otherwise directly applied to the plates or panels 12, or they may be applied to independent strips 19, which we will refer to as "sign-strips," these being adapted for detachable connection with the plates 12.

In Figs. 6, 7, and 8 are shown means for detachably connecting the sign-strips to the plates, comprising socket members 20, formed in the plates 12 and preferably consisting of circular orifices, and stud members 21, affixed to the strips 19 and projecting inwardly therefrom, said stud members being compressible and resilient, so that they may snap into the socket members 20. To accommodate the stud members which may project inwardly from the inner surface of the strips 12, the supports 15 may be provided with recesses 22, as shown in Fig. 8. In Figs. 10 and 11 we show the plates 12 provided at their longitudinal edges with ears 23, adapted to engage the edges of a sign-strip, the body of the strip being exposed between the said ears.

It will be seen that by rotating one of the supports 15 the belt may be moved progressively, so that each of the plates 12 may be successively exposed at a given point, preferably behind an opening 25 in the casing 18.

In the description thus far we have considered a single belt and the two rotary prismatic supports therefor as an embodiment of the invention, it being obvious that this embodiment may contain a series of the single sign plates or panels to be displayed. Our invention in its preferred form, however, is embodied in a plurality of belts with a corresponding plurality of supports, the arrangement being such that a series of plates or strips made up of one plate or strip on each belt are exposed simultaneously in the same plane, a large flat field or area made up of sections each composed of one of the plates 12 being thus produced. Means are employed for imparting a synchronous intermittent movement to all the belts and for arresting the belts and their supports whenever a series of the plates are located in the same plane, provision being thus made for changing the letters displayed by the said series of plates. It will be seen, therefore, that by suitably inscribing the plates they can be caused to present successively as many different designs as there are plates in each belt. The trilateral form of the supports 15 is important in this embodiment of our invention, because it enables the adjacent edges of the plates which are located in the same plane to be in close proximity to each other, thereby making the field or area presented by the said plates practically continuous. If desired, the ears 23 (shown in Fig. 10) may be painted in such manner that they will constitute, in effect, a continuation of the designs carried by the sign-strips inserted between said ears.

The means here shown for intermittently moving the belts and their supports comprise a motor 25, which may be an electric motor, a worm 26, affixed to the shaft of said motor; a worm-wheel 27, meshing with the worm and affixed to a shaft 28; an interrupted gear 29, affixed to said shaft; an interrupted gear 30, engaging the gear 29 and receiving an intermittent rotation therefrom; a gear 31, affixed to the shaft 32 of the gear 30; a gear 40, meshing with the gear 31; a series of gears 33, affixed to the shafts 17 of one set of supports 15, one of the gears 33 meshing with the gear 31, and a series of intermediate gears 34, connecting the series of gears 33. The above-described mechanism is so timed that whenever a flat field is formed by a series of plates or panels at the front of the casing the rotation of the driven belt-supports is arrested for a predetermined period, after which the rotation of said supports is resumed and continued until another set of plates are relatively arranged to form a flat field, the operation being thus continued intermittently, so that the series of belts coöperate in exhibiting a series of pictures or designs.

The rotary belt-supports are preferably arranged so that the intermediate stretches of the belts extend horizontally between the supports, as shown in Fig. 2. To prevent the outer surfaces of the adjacent stretches of the sign-strips thereon from rubbing against each other, we provide means for preventing contact between the adjacent stretches. Said means may comprise idle rolls 35, mounted on the ends of the casing and arranged to support the lower stretches of the belts, as shown in Fig. 3, or flanges 36, similarly located, as shown in Figs. 4 and 5, the said flanges being adapted to support the lower stretches of the belts.

The rotary supports may be composed of bodies of wood or other suitable material suitably mounted on the shafts 17, as shown in Figs. 2, 3, 4, and 8, or they may be composed of plates 37 of sheet metal, suitably connected at their edges to form a trilateral hollow body, and partitions or spiders 38, inserted at suitable intervals in said body and perforated at 39 to receive the shaft 17, as shown in Fig. 9.

As indicated in Fig. 12, when the trilateral supports are in an intermediate position, such as when shifting from one exhibit to another, the continuity of the picture made up by the plurality of panels or plates showing at the front is not materially interrupted, so as to expose the mechanism at the rear. This is because the faces of the trilateral supports are substantially equal in width to the width of the panels or plates.

We claim—

1. An apparatus of the character stated, comprising a series of plates of uniform width, hinges connecting said plates in an endless belt, and rotary trilateral supports for said belt having faces corresponding in width with the body portion of the plates between the hinges, the projection of said hinges from the edges of the faces being wholly inward, whereby the outer face of the belt is left free from projections or protuberances.

2. An apparatus of the character stated, comprising a series of plates of uniform width, hinges connecting said plates in an endless belt and projecting wholly from the inner surface of the belt, and rotary trilateral supports for said belt having truncated corners accommodating said hinges, and faces between said corners corresponding in width with the body portions of the plates between the hinges.

3. An apparatus of the character stated, comprising a series of plates flexibly connected to form an endless belt, said plates having coupling members between their edges, sign-strips having complemental coupling members adapted to detachably engage the coupling members of the plates, and rotary prismatic supports for said belt, one of the said coupling members being a stud and the other a socket.

4. An apparatus of the character stated, comprising a series of plates flexibly connected to form an endless belt, said plates having socket-coupling members between their edges, sign-strips having inwardly-projecting stud-coupling members adapted to detachably engage the said socket members and rotary prismatic supports for said belt having faces which are recessed to coincide with and receive the stud members of the sign-strips.

5. An apparatus of the character stated, comprising a series of endless belts, each having a plurality of panels, and rotary trilateral supports engaged with said belts and having faces substantially equal in width to the width of the panels, the supports being arranged to hold a series of the panels edge to edge in the same plane for simultaneous exposure, the trilateral form of said supports permitting the edges of the exposed panels to stand in close proximity to each other, means being provided to cause the supports, when actuated, to rotate in unison in the same direction.

6. An apparatus of the character stated, comprising a series of endless belts, each having a plurality of panels, and rotary trilateral supports engaged in pairs with said belts and having faces substantially equal in width to the width of the panels, and mechanism for causing an intermittent synchronous rotation of said supports in the same direction, said mechanism being organized to hold a series of the panels in the same plane when the supports are at rest, the trilateral form of said supports permitting the edges of the exposed panels to stand in close proximity to each other.

7. An apparatus of the character stated, comprising a series of endless belts, each having a plurality of panels, and rotary trilateral supports engaged in pairs with said belts and having faces substantially equal in width to the width of the panels, a motor, and a train of gears connecting the motor with the supports, to cause the synchronous rotation of said supports, the said train comprising gears affixed to one series of supports, intermediate gears connecting the first-mentioned gears, and coöperating interrupted gears, one engaged with the motor to receive continuous rotation therefrom, and the other adapted to be intermittently rotated by the motor-driven gear, and causing an intermittent rotation of the said supports.

8. An apparatus of the character stated, comprising a series of endless belts, each having a plurality of panels, and rotary trilateral supports engaged with said belts and having faces corresponding in width with the panels, the supports being arranged to carry the intermediate stretches of the belts side by side and in close proximity to each other, and means for preventing rubbing contact between adjacent stretches.

In testimony whereof we have affixed our signatures in presence of two witnesses.

WILLARD H. GILMAN.
CHARLES B. KENDALL.

Witnesses:
C. F. BROWN,
H. L. ROBBINS.