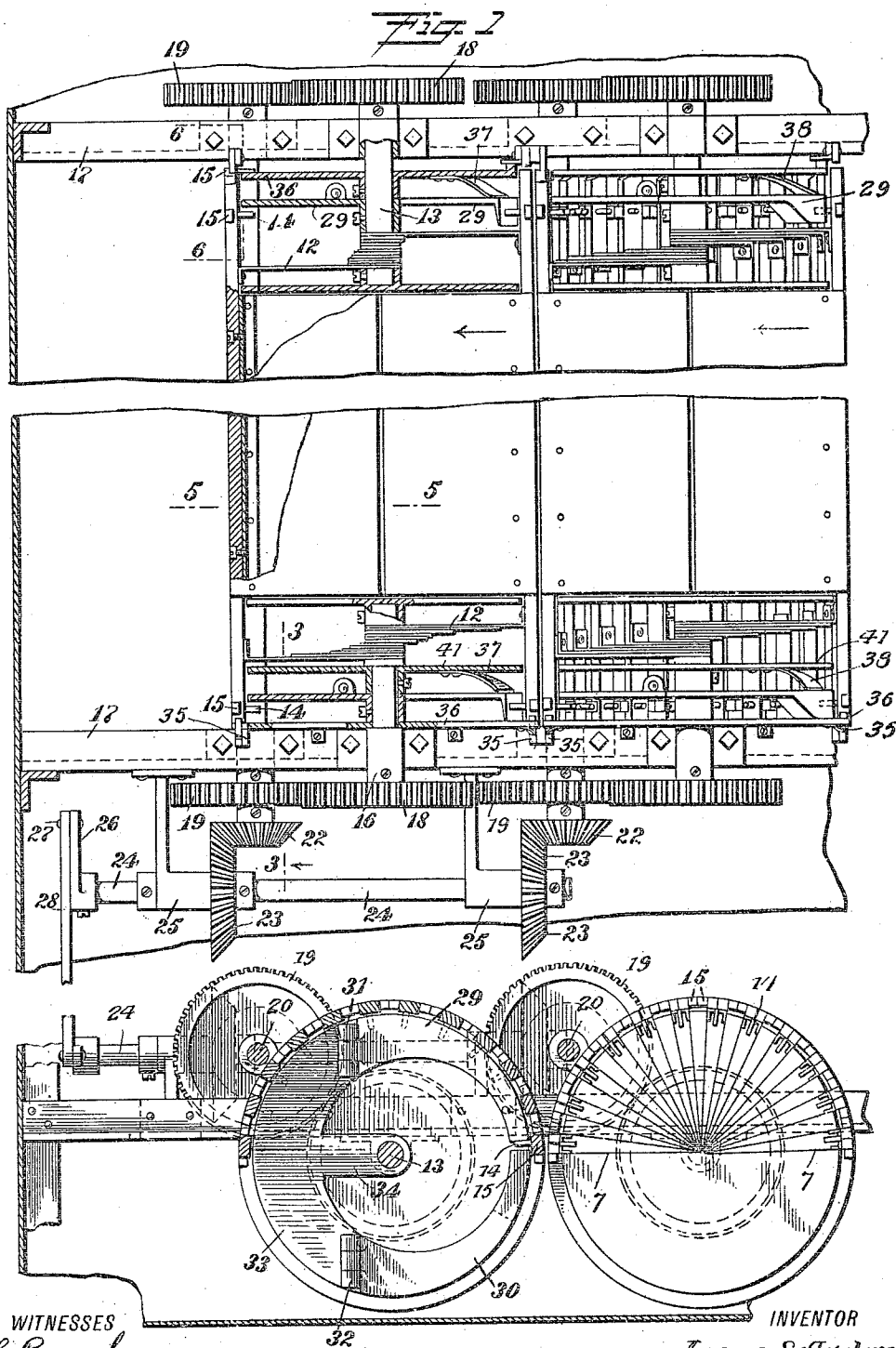


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J. S. ANDERSON.
DISPLAY MACHINE.
APPLICATION FILED MAY 24, 1909.

Patented May 10, 1910.

2 SHEETS—SHEET 1.



WITNESSES
E. L. Bromley,
J. P. Davis

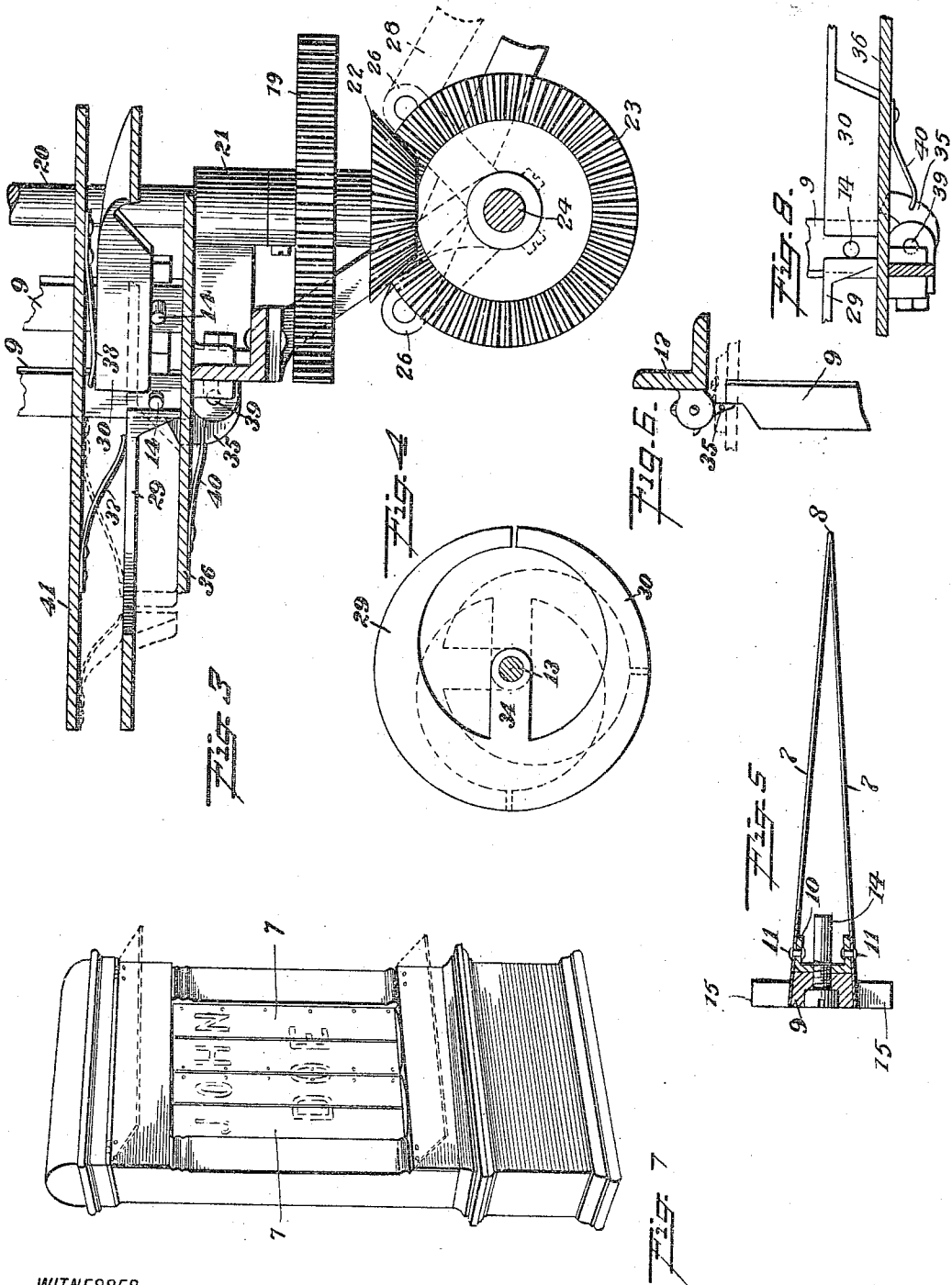
INVENTOR
James S. Anderson
BY *Mum & Co*
ATTORNEYS

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UNITED STATES PATENT OFFICE.

JAMES S. ANDERSON, OF NEWPORT, KENTUCKY.

DISPLAY-MACHINE.

957,640.

Specification of Letters Patent.

Patented May 10, 1910.

Application filed May 24, 1909. Serial No. 497,876.

To all whom it may concern:

Be it known that I, JAMES S. ANDERSON, a citizen of the United States, and resident of Newport, in the county of Campbell and State of Kentucky, have invented a certain new and useful Display-Machine, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a sign in which the exposed matter is continuously changing, and in which the change simulates a dissolving view; to provide a driving mechanism which is positive and smooth in its operation; to provide a mechanism wherein the display members are brought together to present a continuous surface; and to simplify and improve the construction of the operative members.

One embodiment of the invention is disclosed in the construction illustrated in the accompanying drawings, wherein like characters of reference indicate corresponding parts in all the views.

Figure 1 is a vertical section of a machine built in accordance with the present invention; Fig. 2 is a plan view of the construction shown in Fig. 1; Fig. 3 is an enlarged detail view, partly in section on the line 3—3 in Fig. 1; Fig. 4 is a detail view in diagrammatic form, showing the relation of the holding and engaging pawls employed in the present mechanism, the dotted lines showing the extreme opposite and median positions of the parts shown in full lines; Fig. 5 is a detail view in horizontal section, taken on the line 5—5 in Fig. 1; Fig. 6 is a detail view taken on the line 6—6 in Fig. 1; and Fig. 7 is a perspective view of the machine. Fig. 8 is a detail view in section, illustrating the depressed position of the retaining pawl at the moment of engagement for shifting.

The present invention may be viewed as an improvement on the construction embodied in the Letters Patent No. 739,635, granted to me September 22, 1903, for an advertising sign. By comparing the above-mentioned Letters Patent with the present application, it may be seen wherein the variation in construction has been effected.

The display device consists in a plurality of sheets or surfaces 7, which are shaped as shown in Fig. 5 of the drawings, being brought to a sharp angle or bend at 8 and

secured at the forward end to a carrying bar 9. In the present instance the carrying bar is formed with a facing backed by a small channel iron 10, to which the sheets or surfaces 7 are riveted at 11. The bars are securely mounted upon brackets 12 which are pivotally mounted upon short rocking shafts 13. Two brackets are provided for these carrying arms, one situated at the upper and one at the lower end of said arms. Each arm is provided also at the upper and lower ends with pins 14 by which they are shifted from position to position. By referring to Fig. 2 of the drawings, there will be seen the construction and arrangement in plan of these carrying arms in their nested position. As many of the said arms are provided as will fill the half circle without permitting the display faces of the various leaves to touch. It is to provide against the touching of these leaves that each arm is provided at the top and bottom with lateral projections 15.

While in the accompanying drawings and in the following description, the present machine will be described as having two stacks of leaves, I wish it understood that I do not limit myself to such number, as it is evident that as many stacks can be provided as is found desirable.

The shafts 13 are mounted in bearings 16, at the upper and lower ends of the frame, and upon cross bars 17. At the outer extremities of the said shafts they have fixedly mounted thereon straight-toothed gear wheels 18, which are in toothed engagement with transmission wheels 19 mounted upon shafts 20. The shafts 20 are mounted in bearings 21 secured upon the cross bars 17 at the upper and lower ends of the said shafts. At the extreme lower ends of the shafts 20 are provided bevel wheels 22, which are held in toothed engagement with bevel wheels 23, fixedly mounted upon a shaft 24. The shaft 24 is disposed horizontally and extends under any number of stacks of leaves, having for such purpose a duplication of the wheels 23 to engage the added wheels 22 and the shafts attached thereto. The shaft 24 is suitably mounted in bearings 25, bracketed from the cross bars 17. The shaft 24 is rocked, and for this purpose there is provided an upright arm 26, to which is pivotally attached at 27, a link or connecting rod 28, connected with

any suitable rotary mechanism, upon the wrist pin or crank pin of which the opposite end of the rod 28 is mounted.

When by the motive power, through the
 5 connecting rod 28, there is imparted to the shaft 24 a rocking movement, this is transmitted through the gears 23 to the smaller gears 22, to the shafts 20, and the pinions 19 and wheels 18. The transmission gears
 10 are so arranged that by the rocking of the shaft 24 less than a full half rotation there is imparted to the shafts 13 a full half rotation. The purpose of the full half rotation above mentioned as desired for the
 15 shafts 13, is that with each rock of the shafts 13, a leaf of each of the stacks is transferred from the one side of the center to the other side, exposing to view the previously unseen side of the leaf turning, and
 20 the face of the leaf previously covered by the said turned leaf. This shifting of the carrying rods 9 is accomplished by means of pawls 29, the action of the pawls being controlled by a stop 30 when engaging a
 25 carrying arm to move the same. The pawl 29 and stop 30 are hinged at 31 and 32 on plates 33, which are fixedly mounted upon the shaft 13, an extension 34 being provided for this purpose. In Fig. 3 of the
 30 drawings is shown the shape and relative positions of the pawl 29 and the stop 30, each having an inclined rear surface adapted to strike upon the pins 14 and be raised over the same. The elongated body
 35 portion of the stop 30 prevents the said stop from falling between the pins 14, while the short body portion of the pawl 29 permits the pawl to fall to the rear of each of the said pins. When now the shafts 13
 40 rock one complete half revolution, carrying the plates 33 and the pawls 29 and stops 30, the carrying bars 9 being clustered as shown in Fig. 2 of the drawings, the said pawl 29 overrides the pin 14 of the carrying bar 9,
 45 which it is desired next to move. The said pawl is prevented from moving farther by the forward end of the stop 30 striking against the pin 9 over which and behind which the pawl 29 has risen and fallen.
 50 In this position the plate 33 is arrested. On the reverse action of the shaft 13 it will be understood that the pawl 29 having engaged the pin 14, carries the pin 14 and the carrying bar 9 to the opposite limit of the
 55 rock of the shaft 13, which deposits the bar 9 in the position back of the spring detent 35 (see Fig. 3). In the throw to this extreme, as illustrated in Fig. 3, the stop 30 has been raised over the pins 14 and re-
 60 mains in such position, that is, riding on top of the pins 14. When now, having deposited the rod 9 on the rotation in the opposite direction or toward the side of the stack which we may term the feeding side,
 65 the stop 30 rides over the intermediate pins

14 until, passing from their support, it drops upon a table 36 and moves in the path of the pins 14 on the opposite or feeding side of the stack, to again limit the throw and the engagement of the pawl 29.

The pawls 29 and the stop 30 are illustrated in the drawings as being actuated by springs 37 and 38. I find such construction very convenient, but it will be understood that the springs are not essential to the perfect operation of the construction, as by
 75 placing sufficient and proper weight upon the hinged members they will be operated by gravity instead of by the said springs.

The tables 36 are stationary, forming part
 80 of the stationary frame on which the mechanism is mounted.

On the receiving side of the stack there are provided the spring detents 35 which are pivotally mounted at 39 and are actuated by
 85 a leaf spring 40. On the opposite or feeding side of the stacks there is provided a similar detent which is, however, constructed and disposed so that the stop 30 depresses the said detent from the path of the bar 9
 90 which is to be delivered, and maintains the detent out of the path of the said bar until the same has passed over the top of the said detent. The detent then immediately inter-
 95 poses in the path of the following bar, to receive the impact of the same as the accumulated bars are shifted to make room for the bar which has just been extracted and which is shifted to the opposite extreme of
 100 the rotation. At the top of the stacks the table 36 while having the detents 35 as described, does not provide for the suspension of the pawl 29 and the stop 30, these being held in suspended position by their hinged
 105 construction. The springs 37, 38, at the top of the stack are mounted upon the upper table 36. At the lower end of the stacks the springs are mounted upon a table 41 which is fixedly mounted on the shaft 13 to travel with the plate 33.

As explained, the movement of the stacks is unlimited. It will be understood that the movement of the leaves of stacks as illustrated in the drawings will be in the direction of the arrows shown in the drawings,
 115 or such as would be produced by the leaf placed to the right of the center, being passed to the left of the center. All of the sides of the leaves exposed at the same time are printed or painted upon as if they constituted a monolithic wall.

By means of the construction and arrangement herein shown, a large variety of different signs or display advertisements may be successively produced, extending over a
 125 large area. Also by reason of the short movement needed for the leaves, the transition from sign to sign may be very rapid, producing a fading impression rather than a traveling impression.

While I have described no particular form of motive power for driving the shaft 24, I wish it to be understood that if an intermittent movement is desired whereby a complete rock to and fro of the shaft and the members connected therewith is desired, I may use a mechanism which will produce this result.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A display machine, comprising a plurality of vertically-mounted leaves radially disposed, an advancing mechanism for shifting the leaves from the one side of the radial center to the other, embodying a pawl and a stop member adapted to work conjointly to engage one, and one only, of the said leaves, and a holding device for maintaining the leaves in fixed position and adapted to be released by the said stop.

2. A display machine comprising a plurality of vertically disposed carrying bars arranged in circular disposition about a common center to form a half cylindrical drum; a plurality of supporting arms fixedly connected to said bars and pivotally mounted upon a common pivot shaft; a plurality of wedge shaped double faced leaves, one of which is fixedly mounted on each of said bars and disposed to extend a sharpened edge parallel with and near the rotary cen-

ter of the said bars, the said leaves having rectilinear sides; a plurality of pins extended inwardly from the said bars; a circular plate rotatively mounted within the rotary path of said bars and concentrically therewith; a pawl pivotally mounted upon said plate and extended into the path of said pins and adapted to override said pins when moved in one direction and to engage the same when moved in the opposite direction; a stop pivotally connected to said plate and disposed in opposite relation to the said pawl, elongated to rest upon and bridge the distance between two adjacent of said pins on the one side of the assembled bars and to engage the first of the said pins on the opposite side of said assembled bars, said stop being separated from said pawl a distance less than the separation of adjacent pins; and a driving mechanism to continuously oscillate the said plate through a half revolution to transfer the said leaves successively from one radial to the opposite radial extension.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES S. ANDERSON.

Witnesses:

B. H. STITES,
A. M. GENTRUP.