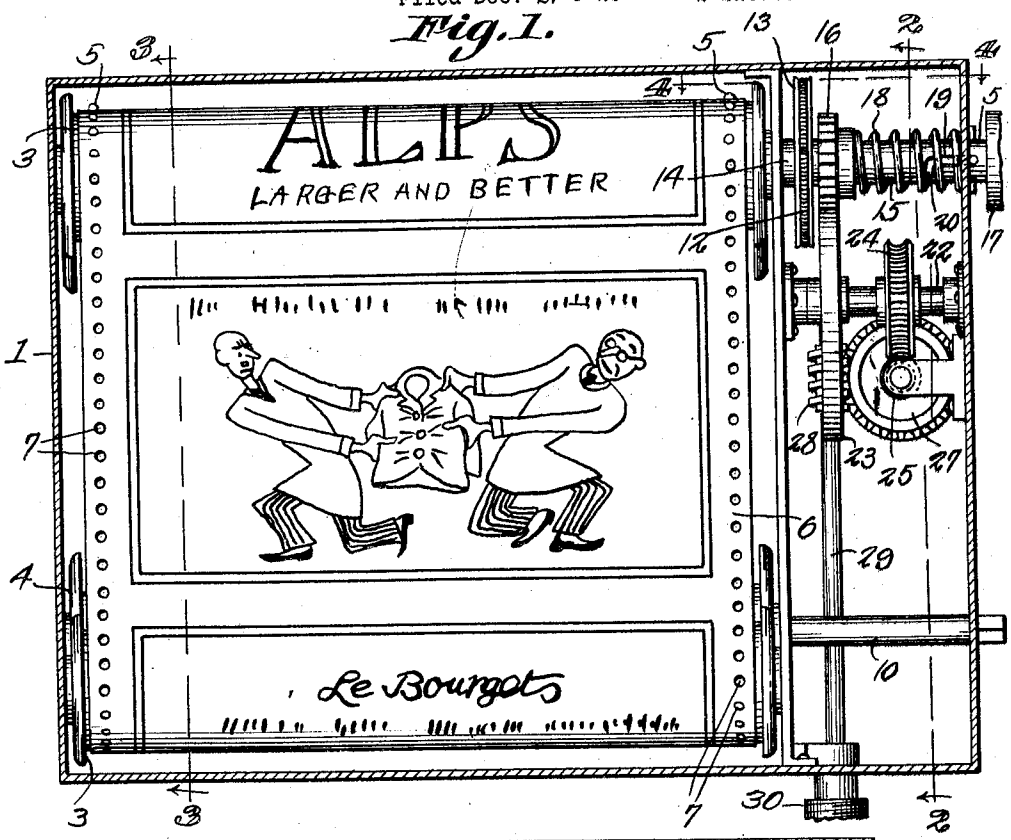
Aug. 11, 1931. J. D. SELF 1,818,509

CHANGEABLE SIGN

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Fig. 1.



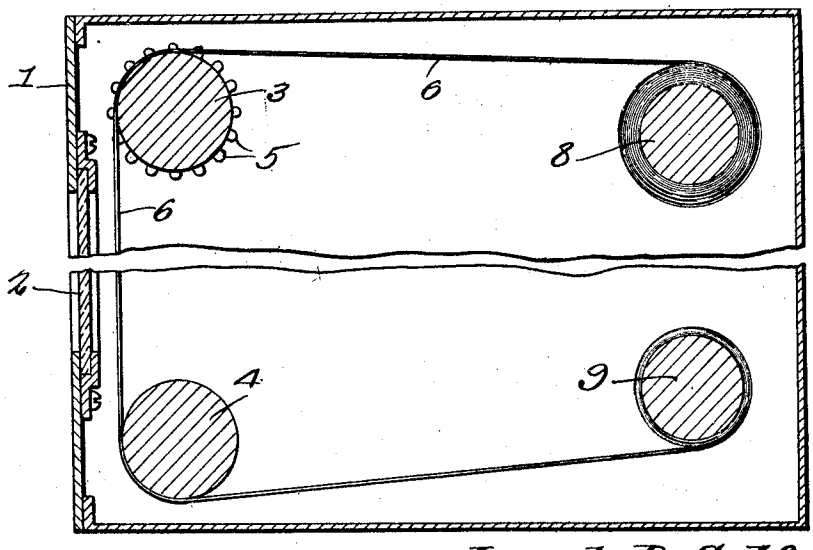


Fig. 3.

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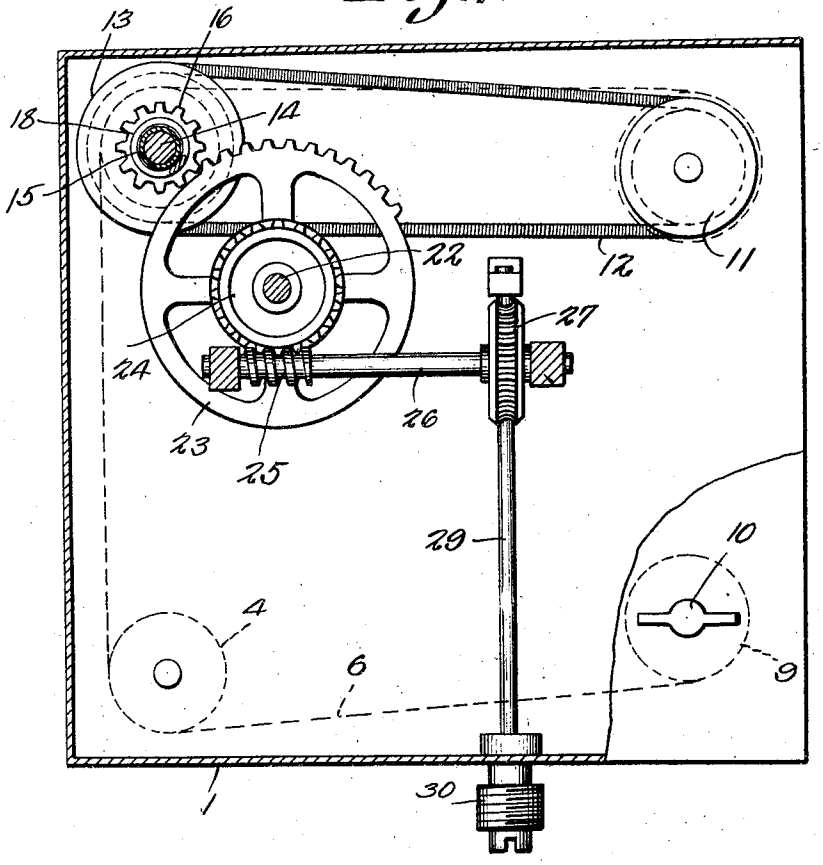
Attorneys.

Aug. 11, 1931. J. D. SELF 1,818,509

CHANGEABLE SIGN

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Fig. 2.



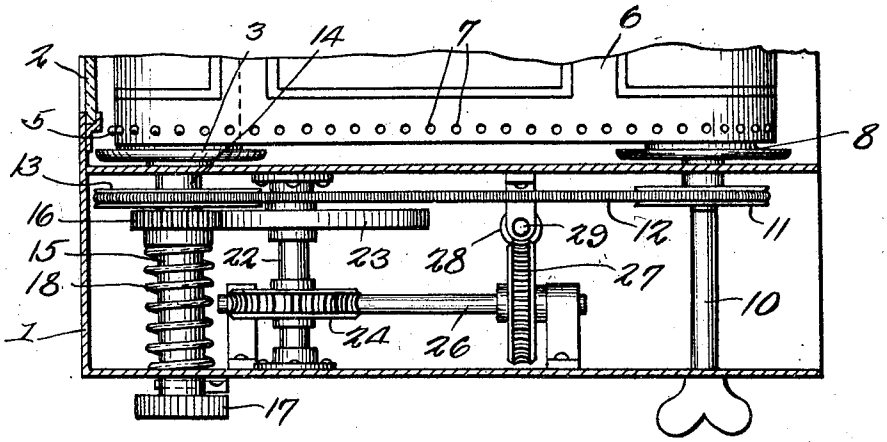


Fig. 4.

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1,818,509

UNITED STATES PATENT OFFICE

JOSEPH D. SELF, OF WAYNESVILLE, NORTH CAROLINA

CHANGEABLE SIGN

Application filed December 2, 1929. Serial No. 411,110.

This invention relates to changeable signs and is designed more particularly as an improvement upon the structure disclosed in Patent 1,710,745 issued to me on April 30, 1929.

In the patented structure it was necessary to space the advertising matter at different distances apart to compensate for variations in the size of the rolled web carrying the advertisements. This has been objectionable because of the problem presented during the printing operation.

It is an object of the present invention to so mount the elongated strip or web carrying the advertisement that it becomes unnecessary to space the advertisements at different distances apart.

Another object is to simplify and improve upon the mechanism employed for actuating the web.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings,

Figure 1 is a vertical transverse section through the housing of the changeable sign showing the improved mechanism therein in elevation.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is a section on line 3—3, Figure 1.

Figure 4 is a section on line 4—4, Figure 1.

Referring to the figures by characters of reference, 1 designates a housing having a window 2 through which the various advertisements are adapted to be displayed intermittently. Above the window there is located a roll 3 extending transversely within the housing while another roll 4 is located below the window and transversely of the housing. Roll 3 is provided, near its ends, with annular series of teeth 5 and the elongated strip or web 6 containing the regularly spaced advertisements is provided near each of its side edges with a longitudinal series of apertures 7 into which the teeth 5 are adapted to project so as to insure positive actuation of the web when the roll 3 is rotated.

A take-up spool 8 is located in the upper portion of the housing adjacent the back thereof and one end of the web 6 is attached thereto. Another spool 9 is journaled in the lower portion of the housing near the back thereof and to this is attached the other end of the web 6. This latter spool has a key 10 extending therefrom through one side of the housing by means of which the web can be wound readily on the spool.

Spool 8 has a grooved wheel 11 rotatable therewith and seated in the groove in this wheel is a belt 12 mounted on a grooved wheel 13 rotatable with the roll 3. This belt can be formed of an endless coiled spring and constitutes means for transmitting motion to spool or wheel 11 from roll 3 while, at the same time, permitting lost motion due to slippage.

The roll 3 has a bearing stem 14 extending therefrom to which the grooved wheel 13 is secured so as to rotate therewith. On this stem 14 is slidably and rotably mounted a sleeve 15. To one end of the sleeve is secured a small gear 16 while the other end of the sleeve, which projects through one side of the housing, has an operating knob 17 by means of which the sleeve can be actuated. A coiled spring 18 is mounted on the sleeve and bears against the hub of gear 16 while its other end bears against the housing. Thus gear 16 is held normally pressed toward the grooved wheel 13. Sleeve 15 has a longitudinal slot 19 one end of which is provided with a lateral extension 20. A pin 21 extends from the stem 14 into the slot 19 and serves normally to hold the sleeve against rotation on the stem while allowing it to be pulled longitudinally. When the sleeve is pulled outwardly and then given a partial rotation, the laterally extending portion 20 of the slot will receive the pin 21 so as to

hold spring 18 under compression with gear 16 out of its normal position.

An intermediate shaft 22 is journaled in the housing and carries a large segmental gear 23 and a smaller worm gear 24. The segmental gear is positioned where it will come into engagement with the gear 16 and rotate it once during each rotation of the segmental gear. The worm gear 24 is engaged by a worm 25 secured to a shaft 26 which, in turn, carries a worm gear 27. This latter gear is adapted to receive motion from a worm 28 secured to a drive shaft 29 one end of which is extended from the housing 1 as shown at 30. This shaft 29 is adapted to be driven by any suitable means provided for that purpose.

It is to be understood that while the shaft 29 is in action, motion will be transmitted therefrom through the gearing to the segmental gear 23 and once during each rotation of this gear it will move into mesh with and actuate the small gear 16. The parts are so timed that each actuation of gear 16 will be sufficient to move web 6 a distance equal to the height of one advertisement thereon. In other words, each time the web is actuated, one advertisement being displayed through the window 2 will be displaced by another advertisement. As the segmental gear moves out of mesh with gear 16 the web will remain stationary until said gear is again actuated whereupon another change is made.

The web is actuated by the teeth 5 engaging the marginal portions thereof and motion is transmitted from the wheel 13 through the belt 12 to spool 1 so that this spool will take up slack in the web as said web is fed over and away from the roll 3. As the belt not only drives the spool 8 but is also free to slip on the wheel 11 it will be apparent that any variations in the diameters of the rolled web on spool 8 will be compensated for.

When it is desired to reverse the operation of the device, the sleeve 15 can be pulled outwardly to withdraw gear 16 from engagement with segmental gear 23 and the parts can be held in this position by giving a rotation to the sleeve so as to cause the pin 21 to become seated in the slot extension 20. By means of key 10 the web can be wound on the spool 9 after which the operation already described can be repeated.

If desired, any suitable power means can be employed for quickly winding the web on the spool.

What is claimed is:

A changeable sign including a housing having a window, toothed rolls in the housing, a take-up spool back of one of the rolls, a rewind spool back of the other roll, a web secured at its ends to the respective spools and supported by the rolls across the window, there being regularly spaced matter on the web for display through the window, a slip-belt connection between the take-up spool and one of the rolls for driving the spool, drive mechanism including a segmental gear, a shiftable gear rotatable with the belt actuating roll mounted for intermittent actuation by the segmental gear, means extending outside of the housing for moving the shiftable gear out of position for engagement by the segmental gear, means for holding the shiftable gear in engaged position and means for rotating the rewind spool when the gear is disengaged and at any desired speed, said means being independent of the driving mechanism.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

JOSEPH D. SELF.