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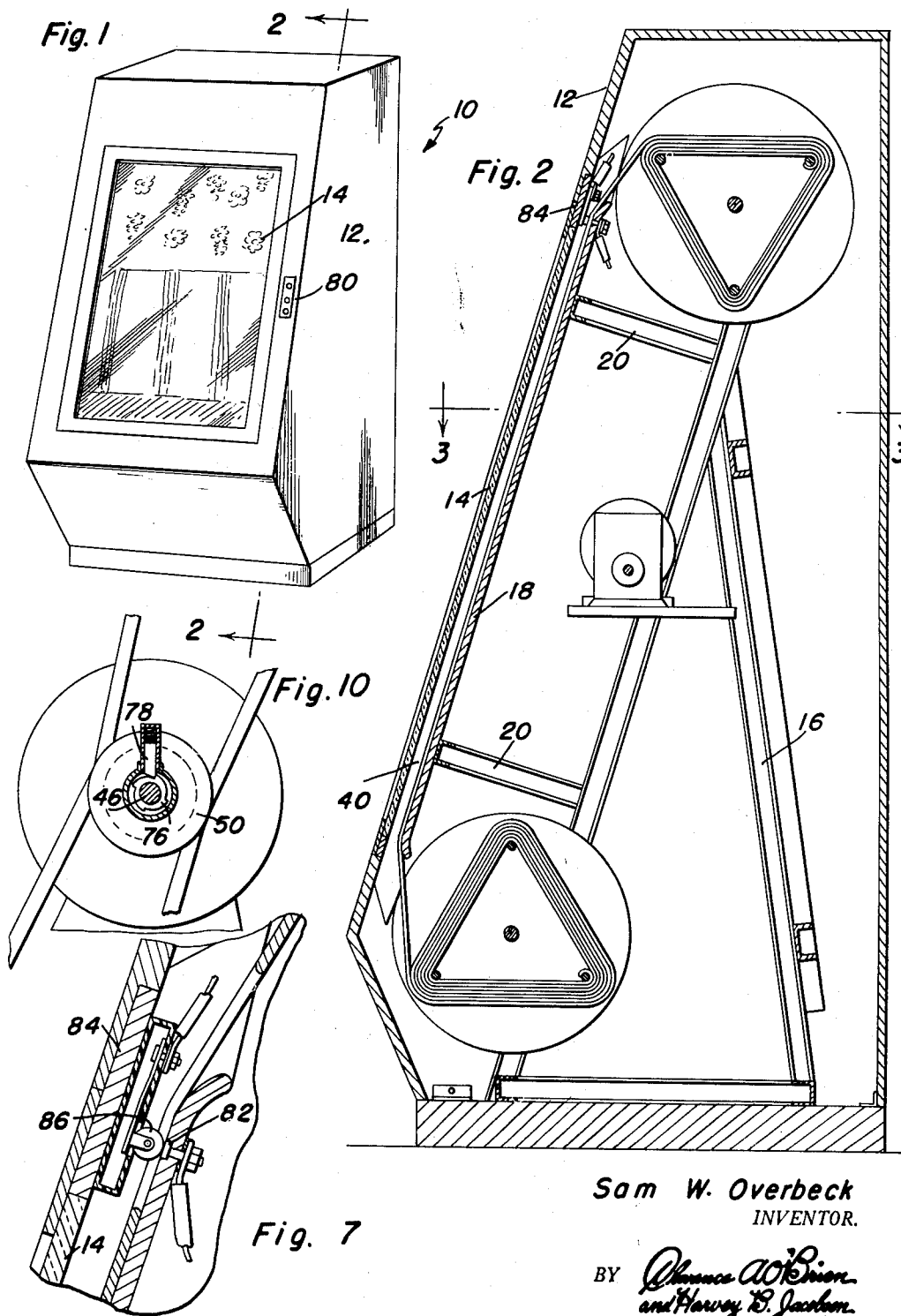
S. W. OVERBECK

2,722,069

WALLPAPER DISPLAY MACHINE

Filed Sept. 7, 1950

3 Sheets-Sheet 1



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Fig. 3

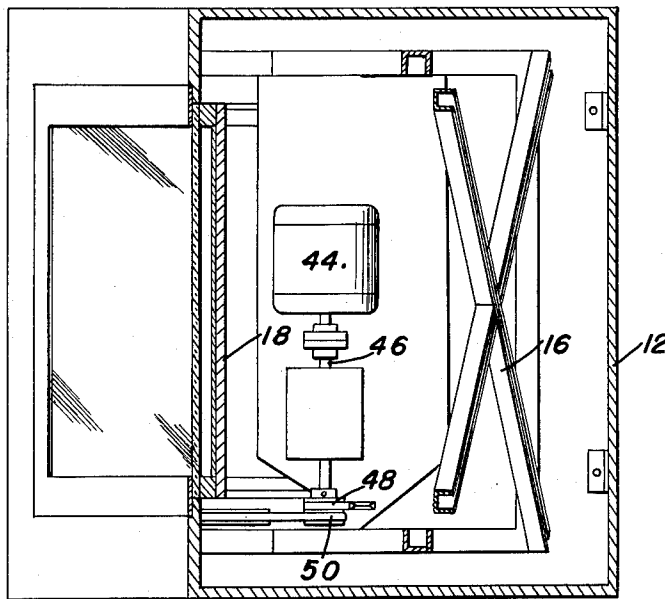


Fig. 6

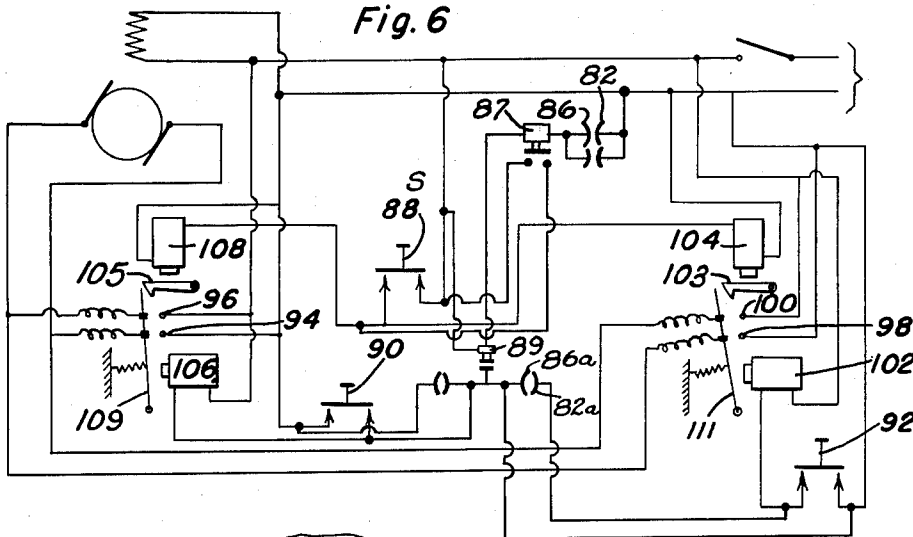
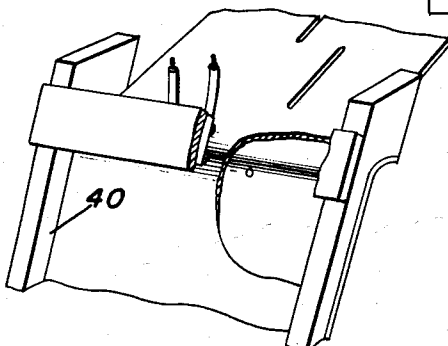


Fig. 5



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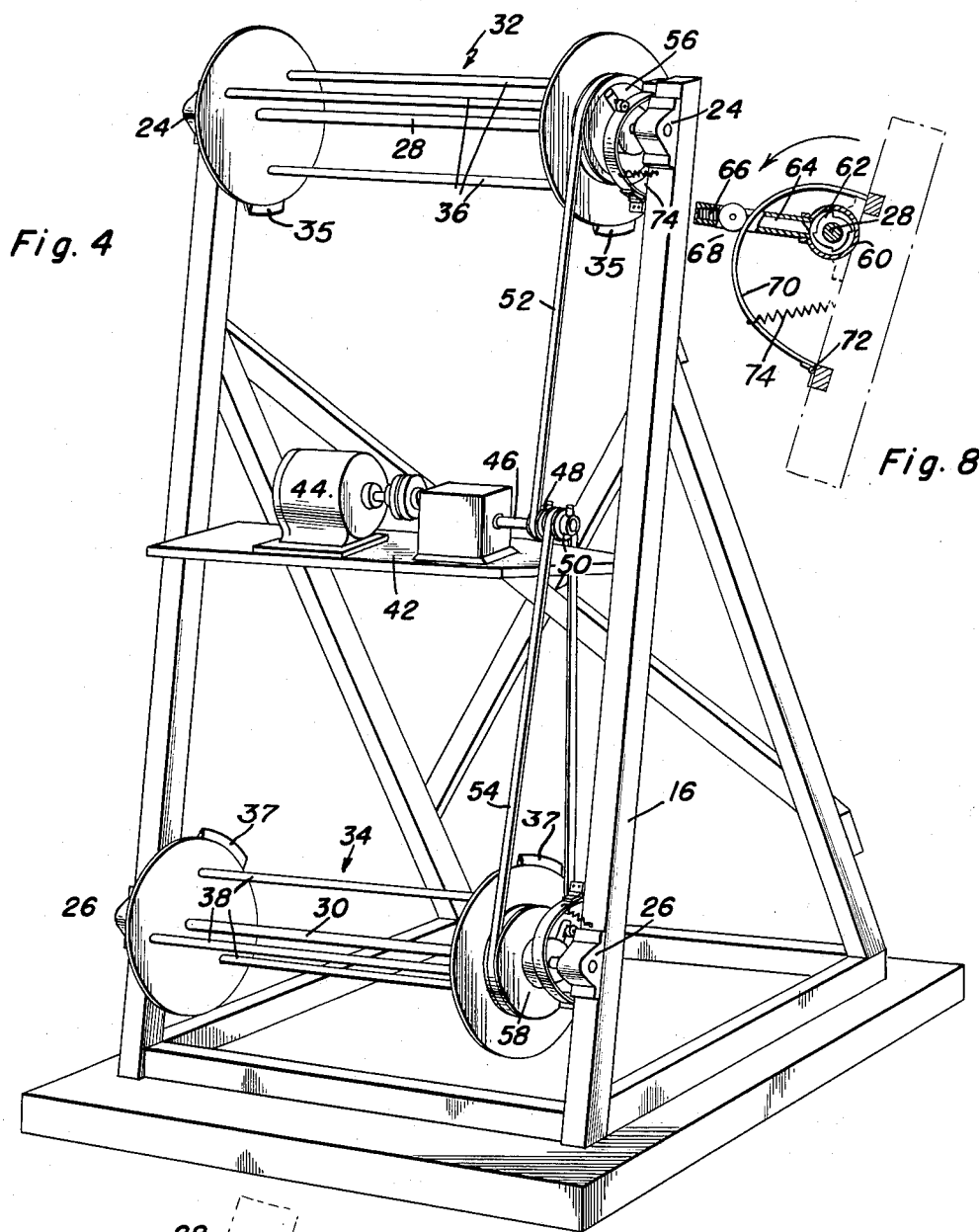
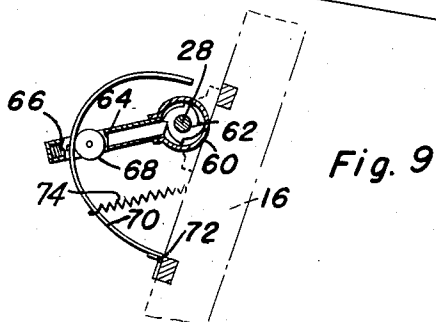
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WALLPAPER DISPLAY MACHINE

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Application September 7, 1950, Serial No. 183,524

1 Claim. (Cl. 40—31)

This invention relates to a display machine for promoting the sales of wallpaper by being used as a display in a show window or as a silent salesman in the sales department of any store selling wallpaper.

The principal object of this invention is to provide a device which will move patterns of wall paper across a screen which is mounted in front of the machine. The patterns of wallpaper to be displayed on the machine are joined together by their borders to form a continuous strip of paper about 300 feet long. There are about one hundred patterns in the roll and each pattern has a dimension so that it may be suitably inspected.

Still further objects of the invention reside in the provision of a wallpaper display machine that is strong, durable, highly efficient in operation, simple in construction and manufacture, which employs novel clutch means for driving the drums on which the wallpaper is mounted, and which wallpaper display machine is highly ornamental in appearance.

These, together with the various ancillary objects of the invention which will become apparent as the following description proceeds, are attained by this wallpaper display machine, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a perspective view of the wallpaper display machine comprising the present invention;

Figure 2 is a vertical sectional view as taken along the plane of line 2—2 in Figure 1;

Figure 3 is a horizontal sectional view as taken along the plane of line 3—3 in Figure 2;

Figure 4 is a perspective view of the wallpaper display machine shown with the casing thereof removed;

Figure 5 is a perspective detail showing the construction of the stop and reverse drives which are used in the present invention;

Figure 6 is a wiring diagram of the electrical circuits used in the present invention;

Figure 7 is an enlarged sectional detail showing the construction of the stop switches as shown in Figure 5;

Figures 8 and 9 are sectional details showing the construction of the clutch mechanism used for the upper drum; and

Figure 10 is a sectional view showing the construction of the drive and release clutch for the drive shaft.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 generally designates the wallpaper display machine which is mounted in a casing 12 having a glass front 14. Mounted within the casing as a framework 16 to which a display screen 18 is secured by means of projecting arms 20. Journaled in pillow blocks 24 and 26 which are secured to the frame 16 are shafts 28 and 30 which form the mounting shafts for the drums generally designated by reference numerals 32 and 34, respectively. The strips of wallpaper are mounted on the drums 32 and 34 in a triangular manner over three

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rods 36 and 38 for each of the drums. The wrapping of the paper on the drums in a triangular pattern is very important to the successful operation of the machine because if the paper were wrapped in a circular pattern it could not be easily corrected from wandering off to one side or another of the roll and in so doing it would cause the paper to tear and break as it passed through guide channels 40 of the display screen 18. However, along with the three point suspension of the paper on the drum it is very important that the paper pass from one drum to the other with a minimum of pull or tension by the winding drum as it pulls the paper across the display screen. This free movement of the paper is necessary so that the channel guides 40 can move it easily from one side to the other so that it will wrap evenly on the winding drums.

For rotating the drums 32 and 34 there is provided a platform 42 on which a prime mover 44 is mounted for rotating a shaft 46 on which pulley wheels 48 and 50 are secured. The pulley wheels 48 and 50 are connected by belts 52 and 54, respectively, to pulleys wheels 56 and 58 for driving the drums 32 and 34.

The pulley 56 is mounted on a bushing 60 which is mounted about the shaft 28. Within a portion of the bushing 60 is a dog 62 which is pinned directly to the shaft 28. Extending through the bushing into engagement with the dog 62 is a spring pressed pressure pin 64 which is biased by a spring 66 into engagement with the dog 62. This pin 64 drives the shaft in a clockwise direction when the pulley wheel is driven in a clockwise direction by the motor 44. When the pulley rotates in a clockwise direction the small wheel 68 rotatably secured to the pin 64 moves around and passes under the curved metal bar 70 secured to the framework by lifting it as shown in Figure 9, the curved metal bar being hinged as at 72 to the frame 16. A spring 74 is provided for holding the curved bar 70 against the frame. Thus, the spring mounted pin continues to drive the shaft so long as the pulley is turning in a clockwise direction. However, whenever the lower drum 34 is winding paper it causes the upper drum to turn in a counterclockwise direction and in so doing causes the pulley to also turn in a counterclockwise direction. This continues until the small wheel 68 in the pin mechanism comes around to the curved bar and when the pulley is traveling in this direction the small wheel cannot get under the bar but rides up on top of it and as it does the upward slope of the bar and the cam action thereof cause the spring pressure pin to be pulled up and out of contact with the dog and thus the drum is released to rotate freely. When the pressure drive pin is raised the large pulley stops and remains stopped until the direction of the motor is reversed and the pulley is started again in a clockwise direction. As it happens the pressure pin is again released and it begins to drive a shaft in a clockwise direction. The reason for the complete release of the drum from the driving mechanism is to allow for very free turning of the drums when they are releasing paper and also to compensate for the change in speeds of the drums due to the changing diameters of the drums of paper. The release mechanism for the lower drum is identical with that for the upper drum.

Counterbalancing weights 35, 37 are placed on the drums which throw the drums out of balance. The upper drum is only slightly out of balance while the lower drum is sufficiently out of balance so that for half a revolution the winding drum must pull it around and then when the heavy side of the drum passes top center it revolves on around for approximately half a turn from its own weight and in so doing completely releases any tension on the paper being pulled across the screen. During this

tension free period of the paper it is easily realigned in the channels of the screen board in case it may have been inclined to wander off to one side or the other on the winding roll. The top drum cannot be heavily counterbalanced because if it were the paper would be fed through the screen channel in a jerking manner by the revolving of the top drum when it is unwinding. However, the counterbalanced lower drum in itself is sufficient to take care of correcting any deviation of the paper in its movement up and down across the screen. The drums on this machine are driven at the desired speed which may be easily changed by reducing the size of the pulley on the speed reducer. This speed reducer comprises the two pulleys 48 and 50 which are arranged so that each pulley drives in the direction opposite from each other. When either pulley is not driving a drum it will idle or remain stationary. This is accomplished by using a system of dogs. With particular reference to Figure 10 it will be seen that each of the pulleys is provided with a portion having an enlarged diameter in which bushings 74 are inserted. Secured to the shaft 46 within each of the bushings 74 is a dog 76. The dogs drive the pulleys by means of the spring mounted pins 78 which engage the dogs 76. With the pulleys mounted on the shaft in this manner each drives only in one direction and when not driving can remain stationary while the dog slips under the driving pin of the pulley. With this arrangement both the large pulley located at the paper drum and also the small pulley on the reducing drive shaft can remain stationary while the drum is unwinding. Suitable push buttons 80 are mounted on the casing 12 for controlling electrical circuits of the device. However, when it is desired to automatically control the machine the wiring circuit as is illustrated in Figure 6 is used. This electrical circuit includes contacts 82 which are mounted on the display screen 18. Mounted on the casing 12 on a board 84 (see Figure 7) set therein in engagement with the glass member 14 are spring pressed wheel contacts 86 which are adapted to engage the contacts 82 whenever an opening appears in the paper where the contact may pass into engagement with the contact 82.

Referring to the circuit diagram of Figure 6, the machine is shown stopped, magnetic coils 104, 108, 106 and 102 being de-energized and spring urged levers 109 and 111 urged to an open position.

To operate the motor upwardly, push button 90 is pressed which pulls lever 109 into contact with contacts 94 and 96, energizing the motor to move the web upwardly. Latch 105 retains lever 109 in this position after release of push button 90.

When the web has approached the limit of its upward winding, stop contacts 86 and 82 engage to operate the time relay 87, stopping the motor in from three to five seconds after the contacts have closed. Time relay 89 is connected in series with relay 87 and is set to close approximately five seconds after the stop contacts have closed when the "down" contacts 86a and 82a are engaged through the slot in the web. Thus, as contacts 86 and 82 are closed, magnetic coils 104 and 108 raise latches 105 and 103, releasing lever 109 from its contacts and stopping the motor. When contacts 86a and 82a are closed, lever 111 is pulled by magnetic coil into contact with contacts 98 and 100. The latch 103, having been

released after opening of contacts 86 and 82, now retains lever 111 in contact with contacts 100 and 98 allowing the motor to operate in the reverse direction. Thus, the manual and automatic operation of the machine are believed to be clearly apparent.

Since from the foregoing, the construction and advantages of this wallpaper display machine are readily apparent, further description is believed to be unnecessary.

However, since numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the precise embodiment shown and described, but all suitable modifications and equivalents may be readily resorted to which fall within the scope of the appended claim.

Having described the invention, what is claimed as new is:

In a wallpaper display machine, a frame, a pair of vertically spaced shafts journaled on said frame, drums mounted on said shafts, triangular reels on said drums for winding wallpaper thereon, guide rails on said frame between said drums for guiding the paper web between the reels, reversible drive means for said shafts, and clutch means operatively connected to said drive means for selectively engaging one of said shafts with its associated drum and disengaging the other of said shafts from its associated drum in response to the direction of rotation of said drums, said drive means including a pulley rotatably journaled on each shaft, each pulley including a bushing concentrically surrounding its associated shaft, said clutch means including a dog secured to each shaft within the pulley bushing, a spring urged pin mounted on said pulley and extending through said bushing into engaging relation with said dog when the drum is rotated in one direction, and means on said frame for disengaging said pin from said dog and stopping said pulley when the drum is rotated in the opposite direction, said disengaging means comprising an arcuate bar hingedly secured at one end to said frame and eccentrically overlying said bushing, spring means interconnecting said bar and said frame to urge the free end of said bar toward said bushing, means on said pin passing under said bar when the pulley is rotated in one direction and overlying said bar when said pulley is rotated in the opposite direction, said last means wedging between said bar and said pin urging spring in its overlying position to stop the pulley from rotating in the opposite direction.

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