Dec. 2, 1930. J. H. PETERSEN 1,783,810

STENCIL PRINTING MACHINE

Filed June 8, 1929 2 Sheets-Sheet 1

Fig. 1.

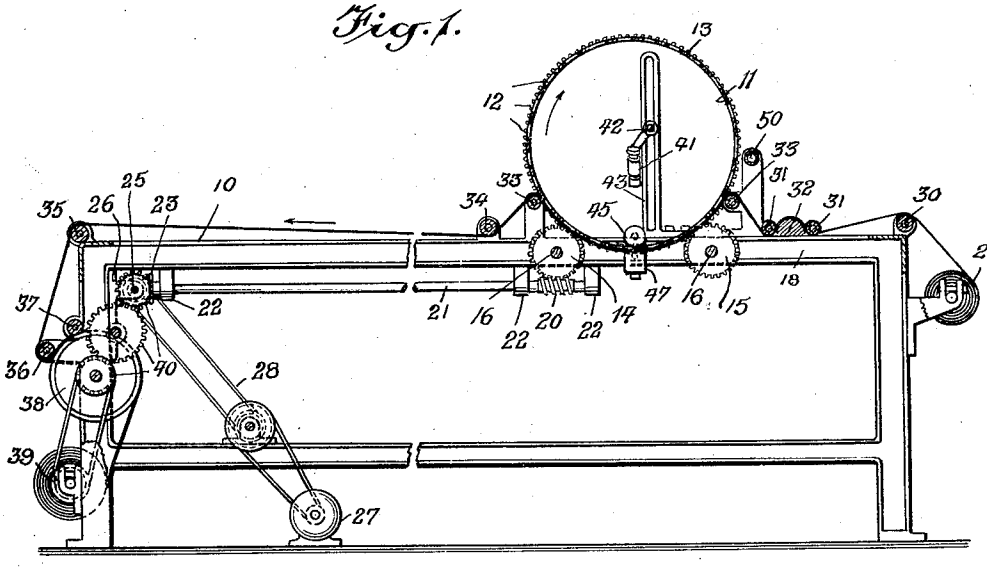
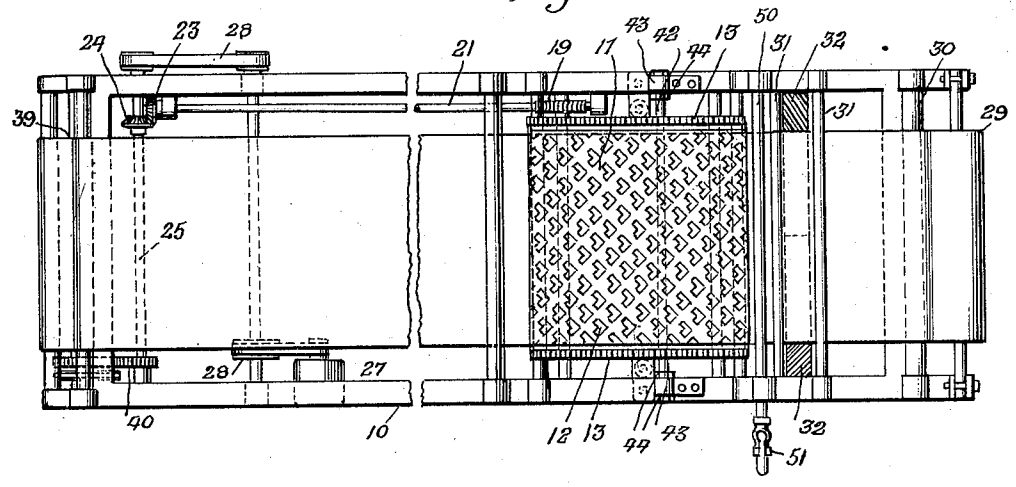


Fig. 2.



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Fig. 3.

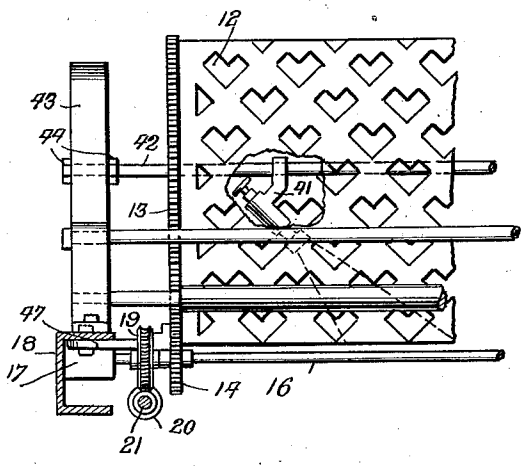


Fig. 5.

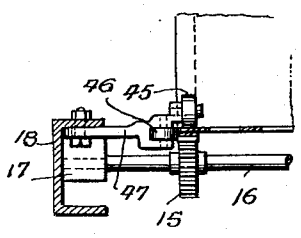
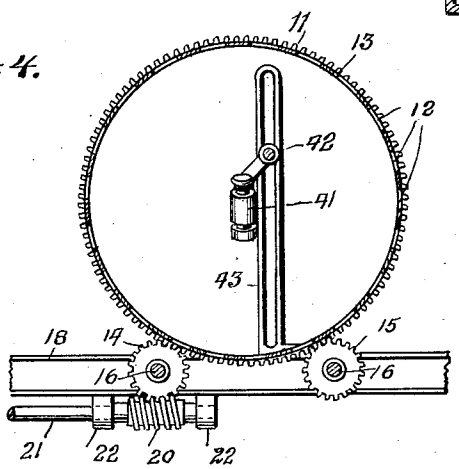


Fig. 4.



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UNITED STATES PATENT OFFICE

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STENCIL PRINTING MACHINE

Application filed June 8, 1929. Serial No. 369,412.

This invention relates to stencil printing machines of the type used for printing on or decorating textile fabrics and closely analogous materials.

An object of the invention is to provide improvements in a machine of the indicated character whereby the stencil cylinder and the material being printed or decorated will be synchronized to move at the same rate of speed to insure accuracy in the printed or decorative patterns or designs.

Another object of the invention is to provide improvements in a machine of the indicated character whereby the stencil cylinder will be readily removable, for the purpose of cleaning the same whenever the occasion arises, and which enables adjustment of the spraying devices to be readily made with respect to said cylinder, while the machine is in operation.

Another object of the invention is to provide a machine of the indicated character with improved means for drying the printing fluid or composition on the stencil cylinder, to prevent smudging or the production of imperfect patterns or designs.

The nature of the invention and its distinguishing features and advantages will appear when the following specification is read in connection with the accompanying drawings, in which—

Figure 1 is a longitudinal section of a machine embodying the features of the present invention.

Fig. 2 is a plan view.

Fig. 3 is a fragmentary transverse section.

Fig. 4 is an enlarged section of the stencil cylinder.

Fig. 5 is a detail section.

Referring now more particularly to the drawings it will be apparent that the machine includes a frame 10. On the frame 10 is mounted a stencil cylinder 11. The stencil cylinder 11 is provided with perforations or openings 12 which formulate or define the pattern or design elements to be produced on the textile fabric or closely analagous materials. The stencil cylinder 11 is open at each end, and each end has arranged thereon a ring gear 13. Each ring gear 13 is in mesh with pinions 14 and 15 on transverse shafts 16 journaled for rotation in suitable bearings 17 secured to the side members 18 of the frame 10. The shaft 16 on which the pinions 14 are mounted, has mounted thereon a worm gear 19 which meshes with a worm 20 on a longitudinal shaft 21 journaled for rotation in suitable bearings 22 secured to the side members 18. The shaft 21 has a bevel gear 23 which meshes with a bevel gear 24 on a transverse shaft 25 journaled for rotation in suitable bearings 26 on the frame. Motion is transmitted to the shaft 25 by any suitable prime mover such as a motor 27 and the intervention of belts and pulleys generally designated 28.

The textile fabric or other closely analogous material to be printed on or decorated is supported and fed in the presence of the stencil cylinder 11 in the manner and by the means presently to be described. A roll of textile fabric 29 is supported in any preferred manner on one end of the frame 10, and the fabric passes over the roller 30, thence under tension rollers 31 and over a spreader 32 interposing the rollers 31, thence over pressing or compression rollers 33 in contact with the cylindrical surface of the stencil cylinder 11, thence under and over rollers 34, 35, 36, and between a roller 37 and a drum 38, and from the latter to a roll 39. All of the rollers, drum 38 and roll 39 may be supported for rotation on the frame 10 in any practical manner. The drum 38 is positively driven by the intervention of gears 40 so that the stencil cylinders 11 and the drum 38 will be synchronized to move at the same rate of speed, to insure accuracy in the printed or decorative patterns or designs produced on the fabric. The roll 39 may be rotated in any practical manner to wind the finished fabric thereon.

In accordance with another feature of the invention use is made of a plurality of spraying devices or guns 41. These guns 41 are arranged for axial and pivotal adjustment on a rod 42 supported for vertical adjustment by guide standards 43 respectively secured to the side members 18 of the frame 10 so as to be disposed respectively at opposite ends of the

stencil cylinder 11. The rod 42 is provided with suitable clamping elements or nuts 44 which clampingly engage the standards 43 to maintain the rod 42 in the desired position of adjustment. The spraying devices or guns 41 project the dye or other printing fluid or composition, in the form of sprays through the perforations or openings in the stencil cylinder 11 so as to be implanted on the fabric. Any preferred number of spraying devices or guns 41 may be used according to the particular width of the fabric being printed or decorated.

In accordance with another feature of the invention, the stencil cylinder 11 is held against displacement, with respect to the fabric, and also to prevent de-meshing of the ring gears 13 with the pinions 14 and 15, but to allow the stencil cylinder 11 to be intentionally removed, by pairs of rollers 45 and 46, rotatably supported by a bearing bracket 47 secured to one of the side members 18 of the frame. The roller 45 of each pair is in contact with the inside of the stencil cylinder 11, whereas the roller 46 of each pair is in contact with the related ring gear 13 as shown most clearly in Fig. 5. Each of the rollers 45 may be swung out of contact with the stencil cylinder 11 which enables the stencil cylinder 11 to be removed, by merely removing the rod 42. The stencil cylinder 11 must be removed from time to time for the purpose of cleaning the interior surface thereof, to rid the same from accumulations of the printing composition or dye.

In accordance with another feature of the invention there is provided means for drying the printing fluid or composition on the stencil cylinder, to prevent smudging, or the production of imperfect patterns or designs, and this is accomplished by the use of a perforated tube 50 extending substantially parallel to the outer surface of the stencil cylinder 11 to project jets of gas toward the stencil cylinder 11. The gas is fed to the tube 50 from any suitable supply source, and is controlled by a valve 51 in the tube 50.

It is to be understood that two or more cylinder sets may be used in the machine for the purpose of producing two or more color prints.

I claim:

1. In a stencil printing machine, the combination of a frame, a stencil cylinder open at each end, a ring gear on each end of said cylinder, shafts rotatably supported on said frame in spaced parallel relation in substantially the same horizontal plane, a pair of pinions on each shaft in mesh with said gears, means to drive one of said shafts to rotate said cylinder, and rollers on said frame in rolling contact with said gears, to prevent the axial movement of said cylinder.

2. In a stencil printing machine, the combination of a frame, a stencil cylinder open at each end, a ring gear on each end of said cylinder, shafts rotatably supported on said frame in spaced parallel relation in substantially the same horizontal plane, a pair of pinions on each shaft in mesh with said gears, means to drive one of said shafts to rotate said cylinder, rollers on said frame in rolling contact with said gears, to prevent the axial movement of said cylinder, and releasable means to prevent upward movement of said cylinder.

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