F. D. TAYLOR.

GUMMING MACHINE.

APPLICATION FILED OCT. 3, 1917.

1,255,245.

Patented Feb. 5, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

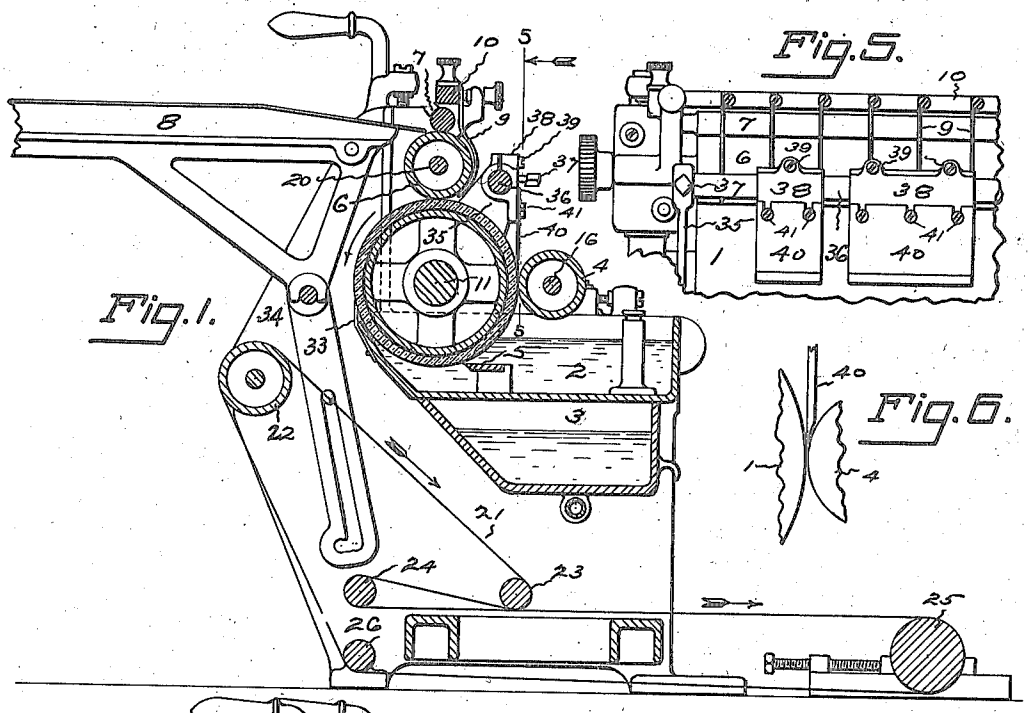
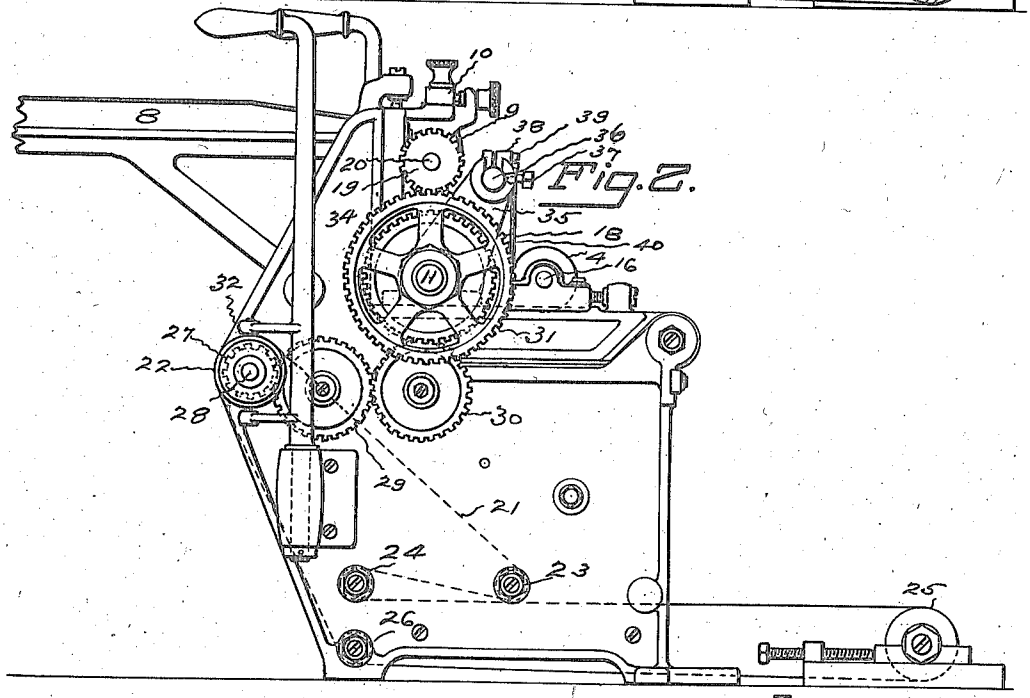


Fig. 5.

Fig. 6.

Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

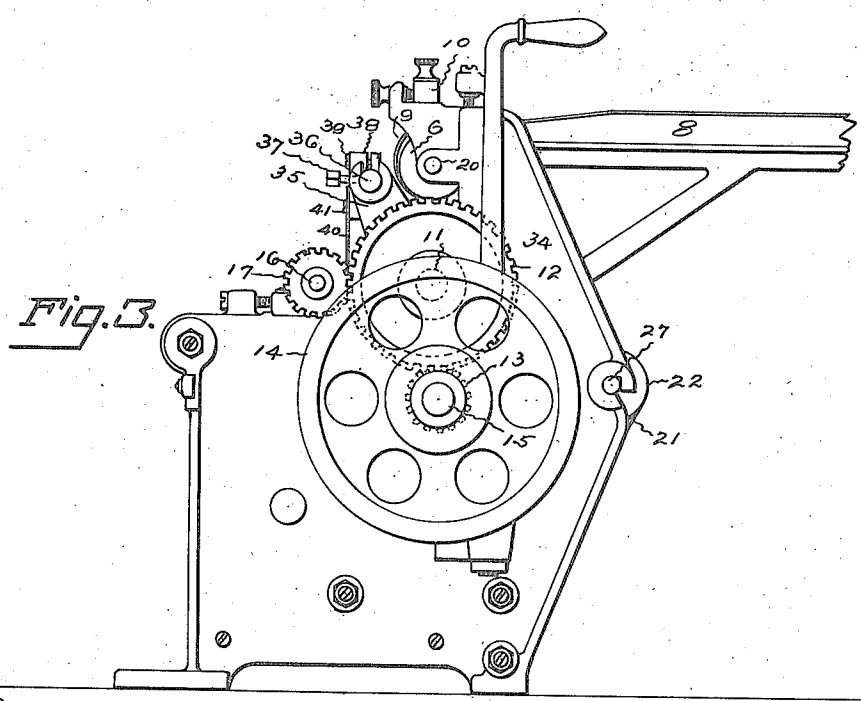
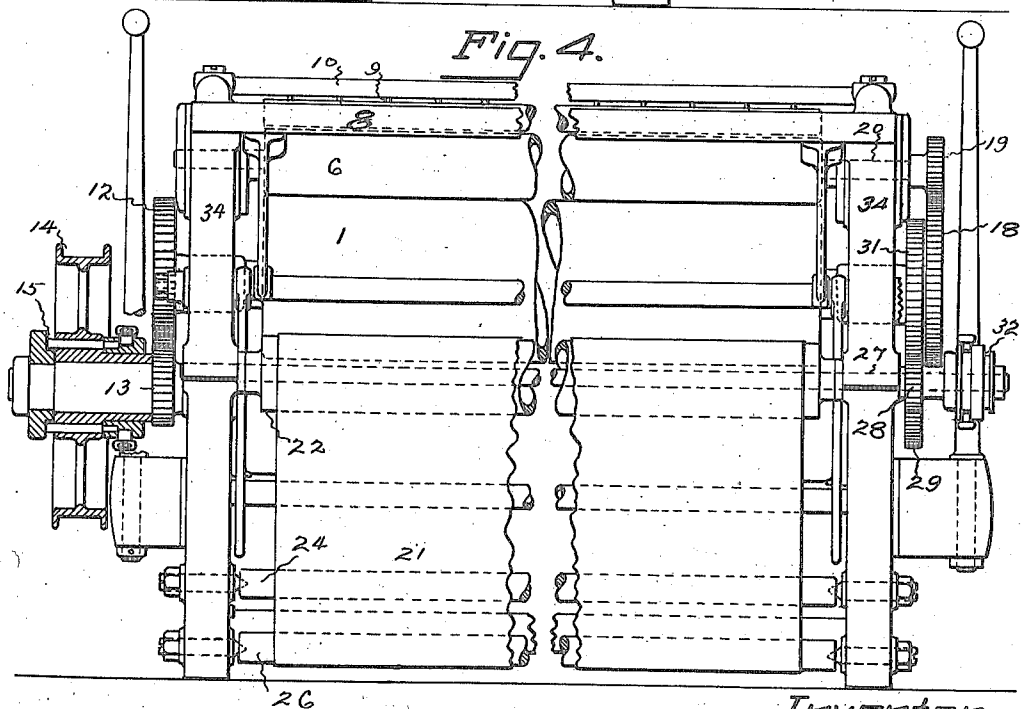


Fig. 4.



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UNITED STATES PATENT OFFICE.

FREDERICK D. TAYLOR, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE SMYTH MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

GUMMING-MACHINE.

1,255,245. Specification of Letters Patent. Patented Feb. 5, 1918.

Application filed October 3, 1917. Serial No. 194,440.

To all whom it may concern:

Be it known that I, FREDERICK D. TAYLOR, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Gumming-Machines, of which the following is a specification.

This invention relates to a machine for applying glue, paste, mucilage or the like adhesive or other moist and gummy substances to one surface of sheets or webs of paper, cloth, leather or similar materials, of the class of that shown in United States Letters Patents No. 741,597, October 13, 1903, and while the machine embodying the invention is serviceable for applying various kinds of adhesive to different forms of material, for convenience it will be described herein as used for applying gum to paper.

The machine described in the patent referred to applies adhesive over the entire surface of the sheet passed through it. It is frequently desirable to limit the application of adhesive to specific sections of the sheet so that when blanked and folded the adhesive will be in the proper localities to cause the adherence necessary to produce the finished article. The object of this invention is to provide very simple means whereby a rapid running machine which is designed to apply adhesive to the entire surface of sheets may be quickly arranged to satisfactorily apply adhesive to sheets in stripes of the required widths and in the necessary localities to enable the sheets to be subsequently blanked, folded and fastened into the desired articles.

Figure 1 of the accompanying drawings shows a vertical section of so much of the machine as is necessary to illustrate the present invention. Fig. 2 shows an elevation of one side of the machine. Fig. 3 shows an elevation of the opposite side. Fig. 4 shows an end view of the machine. Fig. 5 is a vertical section taken on the plane indicated by the line 5—5 on Fig. 1 and looking in the direction indicated by the arrow. Fig. 6 is a diagrammatic representation showing the relations of the gumming cylinder, gage roll and plate for removing gum from the surface of the gumming cylinder in order to form an ungummed stripe on the paper which is passed through the machine.

The gumming cylinder 1, which is desirably made with a porcelain surface, turns with a portion of its periphery in the gum tank 2, which may be kept at the desired temperature by hot water or other medium in the chamber 3 beneath it. The thickness of the film of gum which is left upon the surface of the gumming cylinder to be applied to the paper is regulated by the adjustment of the gage roll 4. In the bottom of the tank is a plate 5 which is designed to scrape and remove from the surface of the cylinder any gum which may have become hardened thereon. Above the gumming cylinder and just out of contact therewith is a feed roll 6 and above the feed roll is a holding roll 7. The sheets of paper are fed from the table 8 between the holding roll and feed roll and are guided by the fingers 9 attached to the bar 10, around the feed roll so that they will pass between the feed roll and gumming cylinder which applies the required amount of gum to one surface of the sheets, Fig. 1.

On one end of the gumming cylinder shaft 11 is a gear 12 that is engaged by a pinion 13 which is designed to be connected with the driving pulley 14 by a clutch mechanism 15. On the end of the gage roll shaft 16 is a pinion 17 that is engaged by the gear 12 on the gumming cylinder shaft, Figs. 3, 4. On the other end of the gumming cylinder shaft is a gear 18 which engages a pinion 19 on the feed roll shaft 20, Figs. 2, 4. Through these gears and pinions the gumming cylinder, gage roll and feed roll are rotated at the desired speed and in the required directions, when the driving pulley is connected thereto by the clutch 15.

The conveyer apron 21 travels over the apron feed roll 22 around rollers 23 and 24 to a roller 25. From this roller it travels back around a roller 26 to the apron feed roll, Fig. 1. On one end of the apron feed roll shaft 27 is a gear 28 that meshes with a gear 29 which is engaged by a gear 30 in mesh with a gear 31 on the gumming roll shaft, Figs. 2, 4. This gearing is so proportioned that the apron preferably will travel slightly faster than the surface speed of the gumming cylinder. A clutch 32 is arranged to connect the apron feed roll shaft 27 with the gear 28 so that when it is desired the travel of the apron may be stopped without stopping the rest of the machine.

The paper which passes between the feed roll and the cylinder is stripped from the cylinder by fingers 33, Fig. 1, so that it will drop with the gummed surface up on the apron and be carried thereby out from under the machine.

Extending obliquely upward and rearward from the side frames 34 which support the gumming cylinder, gage roll and feed roll are brackets 35. The upper ends of these brackets are provided with bearings for the ends of a bar 36, the bearings preferably being open at the top so that the ends of the bar may be dropped into them. Set screws 37 are provided for the purpose of fastening the bar in position. On this bar are blocks 38. There may be any number of these blocks and they may be of any width. The blocks are split and are provided with clamp screws 39 which, when loosened, permit the blocks to be put on, taken off or adjusted along the bar to the required positions. Plates 40 of the required width are detachably fastened to these blocks, preferably by screws 41 which pass through slots in the upper edges of the plates, so that the plates may be quickly attached or detached. The lower edges of these plates are sharpened so that they will pass down between the gumming cylinder and gage roll, Figs. 1, 5 and 6.

When it is desired to gum the entire surface of the paper passed through the machine the bar 36 may be lifted from its bearings and removed. If it is desired to gum only portions of the surface of the paper passed through the machine blocks equal in number to the ungummed stripes are provided with plates of the width of the ungummed stripes and are placed upon the bar 36. The bar is then dropped into its bearings and the blocks adjusted so that the plates will be in line with the sections of paper it is desired to leave ungummed, after which the blocks are clamped on the bar with the sharpened edges bearing against the surface of the gumming cylinder between that cylinder and the surface of the gage roll.

Plates located in this manner remove all gum from the sections of the surface of the gumming cylinder against which they bear, equal to their width, and turn the gum thus removed back onto the gage roll which carries it over and deposits it into the gum tank. As a result of this invention a machine which is designed to gum the entire surface of a sheet of paper may be quickly arranged to apply gum to the paper in any desired number of stripes of a required width, without changing or altering the adjustment of any of the mechanisms of the machine proper.

The invention claimed is:

1. In a machine for applying adhesive to sheets, the combination of an adhesive tank, an applying cylinder rotating in said tank, a feed roll coöperating with th[illegible]der for feeding the sheets, a gage roll for determining the thickness of the film of adhesive to be applied by the cylinder to the sheets, and means extending between the applying cylinder and the gage roll, said means being locatable longitudinally of said cylinder and roll in any position along the length thereof and adapted to be set tightly against the surface of the cylinder for removing all adhesive from sections of the cylinder and causing said removed adhesive to be deposited on and be carried away by the gage roll.

2. In a machine for applying adhesive to sheets, the combination of an adhesive tank, an applying cylinder rotating in said tank, a gage roll for determining the thickness of the film of adhesive to be applied by the cylinder to the sheets, and means extending between the applying cylinder and gage roll, said means being locatable longitudinally of said cylinder and roll in any position along the length thereof, and adapted to be set tightly against the surface of the cylinder for removing all adhesive from sections of the cylinder, and causing said removed adhesive to be deposited on and be carried away by the gage roll.

3. In a machine for applying adhesive to sheets, the combination of an adhesive tank, an applying cylinder rotating in said tank, a gage for determining the thickness of the film of adhesive to be applied by the cylinder to the sheets, and means extending between the applying cylinder and the gage, said means being locatable longitudinally of said cylinder and gage in any position along the length thereof and adapted to be set tightly against the surface of the cylinder for removing all adhesive from sections of the cylinder and causing said removed adhesive to be deposited on said gage.

4. In a machine for applying adhesive to sheets, the combination of an adhesive tank, an applying cylinder rotating in said tank, a gage roll for determining the thickness of the film of adhesive to be applied by the cylinder to the sheets, and means locatable longitudinally of said cylinder in any position along the length thereof and adapted to be set tightly against the cylinder for removing all adhesive from sections of the cylinder above the gage roll and causing said removed adhesive to be deposited on and be carried away by the gage roll.

5. In a machine for applying adhesive to sheets, the combination of an adhesive tank, an applying cylinder for receiving adhesive from the tank, a gage for determining the thickness of the film of adhesive to be applied by the cylinder to the sheets, and means locatable longitudinally of said cylin-

der in any position along the length thereof and adapted to be set tightly against the surface of the cylinder above the gage for removing all adhesive from sections of the cylinder and causing said removed adhesive to be deposited on said gage.

6. In a machine for applying adhesive to sheets, the combination of an adhesive tank, an applying cylinder for receiving adhesive from the tank, a gage for determining the thickness of the film of adhesive to be applied by the cylinder to the sheets, and plates locatable longitudinally of said cylinder in any position along the length thereof and adapted to be set tightly against the surface of the cylinder above the gage for removing all adhesive from sections of the cylinder and causing said removed adhesive to be deposited on said gage.

7. In a machine for applying adhesive to sheets, the combination of an adhesive applying cylinder, a gage roll for determining the thickness of the film of adhesive to be applied by the cylinder to the sheets, and plates extending between the cylinder and the gage roll, said plates being locatable longitudinally of said cylinder and roll in any position along the length thereof and adapted to be set tightly against the surface of the cylinder for removing all adhesive from sections of the cylinder and causing said removed adhesive to be deposited on and be carried away by the gage roll.

8. In a machine for applying adhesive to sheets, the combination of an adhesive applying cylinder, a gage roll for determining the thickness of the film of adhesive to be applied by the cylinder to the sheets, a bar extending parallel to the axes of said cylinder and roll, blocks mounted on and adjustable along said bar to any required locality along the length of the cylinder and roll, and plates detachably secured to said blocks and adapted to have their ends set in contact with sections of the surface of the cylinder between the cylinder and the roll for removing all adhesive from sections of the cylinder and causing said removed adhesive to be deposited on and be carried away by the gage roll.

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