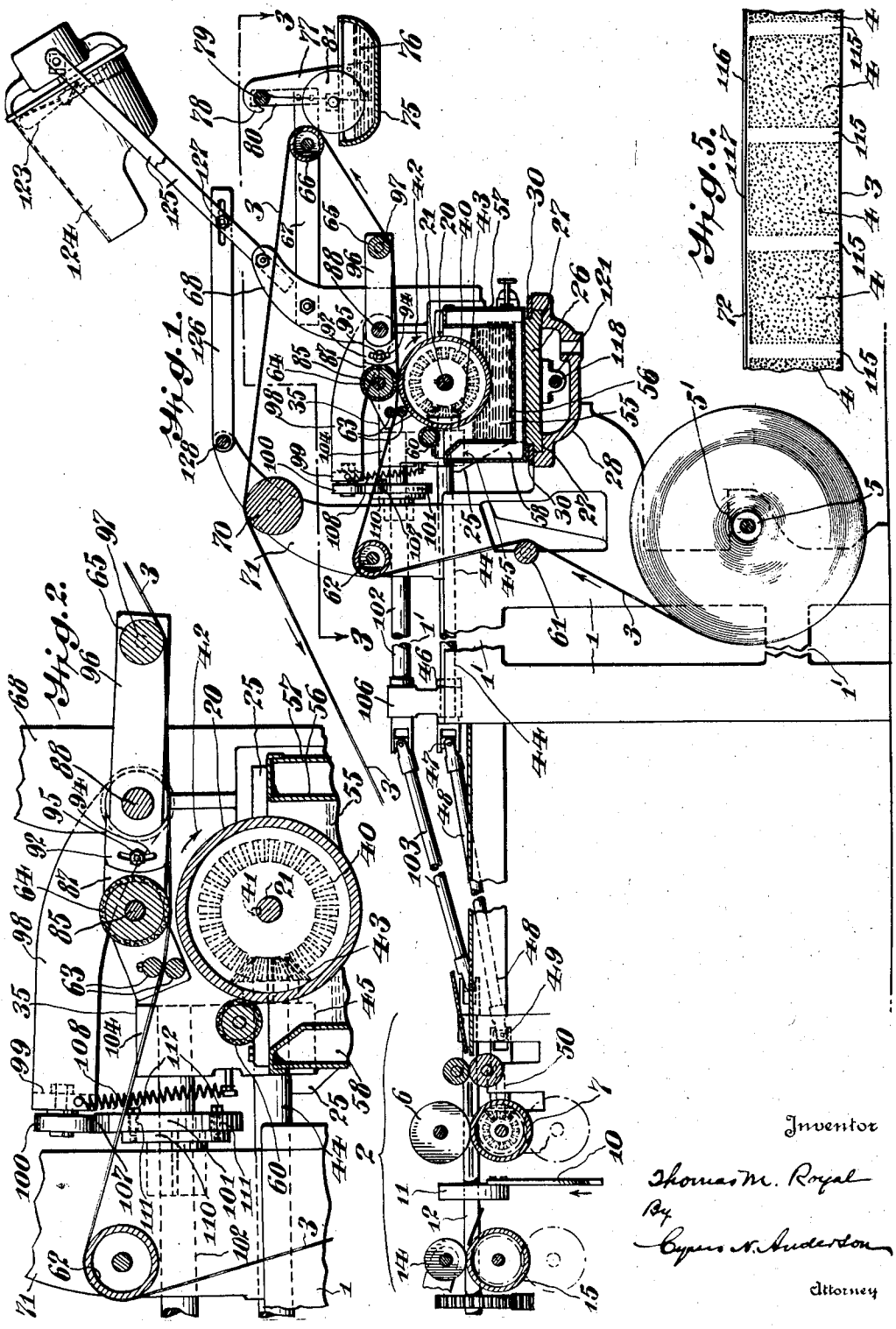
Dec. 4, 1934. T. M. ROYAL 1,982,697

ATTACHMENT FOR PAPER BAG MAKING MACHINES

Original Filed Jan. 10, 1929 2 Sheets-Sheet 1



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Original Filed Jan. 10, 1929 2 Sheets-Sheet 2

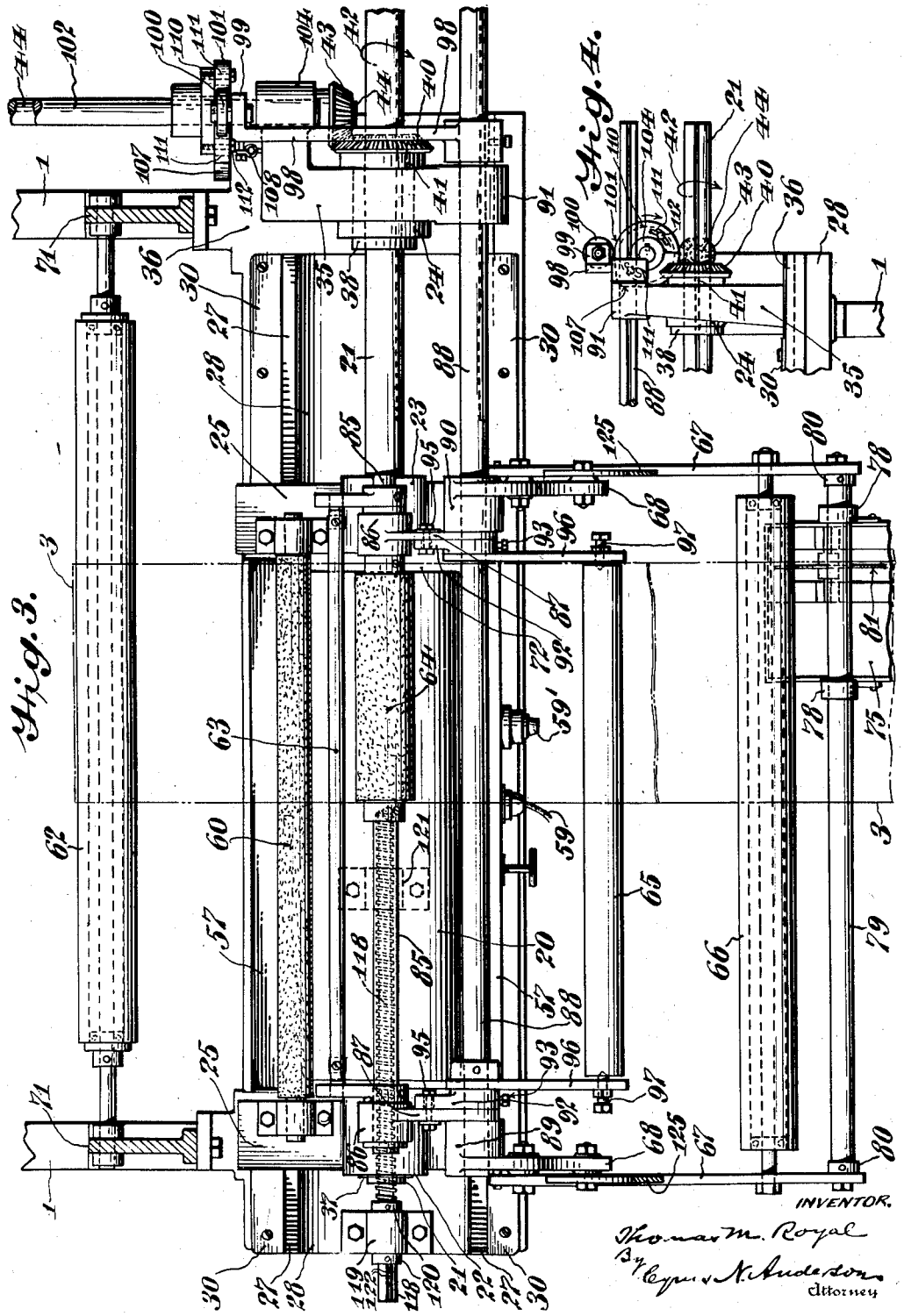


Fig. 3.

Fig. 4.

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ATTACHMENT FOR PAPER BAG MAKING MACHINES

Thomas M. Royal, Philadelphia, Pa.

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Renewed February 10, 1934

9 Claims. (Cl. 91—55)

My invention relates to mechanism which is adapted to be attached to paper bag making machines and operates to apply coatings of wax or the like upon one of the surfaces of sheets of paper in such manner that the bags produced by the said machine have coatings of wax or the like upon one or even both of the surfaces thereof. In the construction of machine as illustrated the wax or other coating is so applied to the paper that when the bags are formed the interior surfaces thereof are coated, as is at present preferred; but it will be understood that if desired the wax may be so applied to the paper and that the latter may be so conducted through the machine and so folded as to provide the coating upon the exterior surfaces of the bags.

It is very desirable and even necessary that paper bags which are used for certain purposes shall be provided with a coating of one kind or another whereby the said bags shall be rendered moisture-proof.

The general object of the invention is to provide mechanism which is adapted to be attached to a paper bag making machine, which mechanism includes means whereby a coating of wax or other like coating material is applied at proper intervals upon a sheet of paper in proper positions relatively to the lines along which the paper is severed by the bag making machine so that when the sections formed by such severing are delivered from the machine in the form of tubular sections or bags one of the surfaces thereof, preferably the interior, will have a coating of wax or the like thereon.

It also is an object of the invention to provide the mechanism of the attachment with means whereby the operations of the wax applying means may be synchronized with respect to the operations of the severing means of the bag making machine.

A further object of the invention is to provide the said attachment with compensating means cooperating with the wax applying means for acting upon the sheet of paper as it is fed through the said attachment to prevent breakage thereof.

A still further object of the invention is to provide means whereby one edge portion of the sections or the surface of the sheet to which the wax or the like is applied is left free of such wax, and means for applying to said wax-free edge portion of the surface an adhesive by means of which the edges of the sheet, when the latter is folded to form a tubular structure, may be secured together.

Other objects and advantages of my invention will be pointed out in the detailed description which follows or will be apparent from such description.

In order that the invention may be readily understood and its many practical advantages fully appreciated reference should be had to the accompany drawings wherein an embodiment thereof is shown in the construction at present preferred by me.

In the drawings:

Fig. 1 is a view partly in longitudinal section and partly in elevation of the attachment embodying the invention and a portion of a paper bag making machine with which the said attachment is associated;

Fig. 2 is a similar view with the parts enlarged of a fragmentary portion of the attachment, certain of the parts thereof being shown in different positions from those in which they are shown in Fig. 1;

Fig. 3 is a sectional plan view taken on the line 3—3 of Fig. 1;

Fig. 4 is a view in front elevation of a fragmentary portion of the structure showing certain details of construction; and

Fig. 5 is a view in top plan of a fragmentary portion of a web or sheet of paper on which are indicated sections of coating of wax or the like and also a line of adhesive adjacent one edge thereof.

In the drawings I have shown at 1 the supporting frame structure of the attachment upon which the operative parts thereof are mounted and supported. It will be noted that portions of the frame and of the structure are broken away and omitted as indicated at 1'. The said attachment is located in adjoining relation to the front end of a paper bag making machine a portion of which is indicated at 2. The long paper sheet 3, to one surface of which wax or the like is applied at intervals as is indicated at 4 in Fig. 5, is mounted upon a rotatable support 5 the opposite ends of which are mounted in open bearings 5' as indicated, and is conducted therefrom through the attachment as indicated in Figs. 1 and 2 and from the latter to and through the bag forming machine, the latter being of known construction. The paper is drawn forward by what are known as draw rolls 6 and 7 which are driven and operated in the usual known manner. The web or sheet 3 is folded and its edges united by folding and tube forming mechanism (not shown) of the usual known construction located in advance of the feed rolls 6 and 7. The severing knife, which is indicated

generally at 10, is mounted upon a disk 11 which in turn is mounted upon a revoluble shaft 12. The said severing knife operates to sever the tube formed as above indicated into sections of desired length in the usual known manner. The severed tubular sections are fed forward by the cooperating feed rollers 14 and 15.

The tube forming means, the feeding means and other mechanism of the bag forming machine have not been shown more in detail nor will they be described in further detail because no change has been made by me in the construction and operation thereof.

I shall now proceed with a description in detail of the attachment by the presence of which the bag forming machine is enabled to produce bags the interior surfaces of which are provided with coatings of wax or other suitable material.

For the purpose of applying wax or the like at intervals to the surface of one side of the sheet 3 I have provided a cylinder 20 which is mounted upon a revoluble shaft 21 supported in bearings 22, 23 and 24. The bearings 22 and 23 are provided in brackets 25 provided upon a base plate 26 which is supported at its opposite edges in grooves 27 provided upon the upper edges of the opposite sides of a trough-like member 28. The member 26 is held in place by means of relatively thin metal strips 30 the outer edge portions of which are secured to the upper edges of the outer portions of the sides of the trough-like member 28, and the inner edges thereof overlie portions of the said plate, as is shown in Fig. 1 of the drawings. The bearing 24 previously referred to is provided in a bracket 35 which is mounted upon a projecting portion 36 of the trough-like member previously referred to. The said trough-like member is mounted upon the frame 1 previously referred to and may be constructed integrally therewith or otherwise connected thereto. The bearings for the shaft 21 are provided with bushings, two only of which are shown, one at 37 and the other at 38. These bushings may consist of any suitable metal and of course contact with the portions of the shaft 21 mounted therein.

The shaft 21 is provided with a beveled gear 40 the two being connected or keyed together in known manner by a key indicated by the dotted lines at 41 so that when the gear 40 is driven the shaft 21 likewise is driven or revolved. The direction of rotation is indicated by the arrow 42 in Fig. 3. The gear 40 is driven by means of an engaging driving pinion 43 mounted upon a shaft 44. The end portion of the shaft 44 adjoining the said pinion is supported in a bearing 45 provided upon a projecting portion of the bracket 35 previously referred to. The opposite end portion of the shaft 44 is mounted in a stationary bearing at 46 and its rear end adjoining the said bearing is connected by a joint at 47 to a section of shaft 48 which in turn is connected at its rear end by means of a joint at 49 to a short shaft 50 provided with a bevel pinion which is in engagement with a bevel pinion mounted upon the shaft of the lower draw roll 7 and is driven thereby.

As will be noted, the lower portion of the cylinder 20 rotates or moves through a mass of molten wax 55 or other suitable material which is contained in a receptacle 56 which may be described generally as of rectangular shape. The receptacle 56 is surrounded by a casing 57 in spaced relation thereto providing a chamber 58 within which resistance coils (not shown) are located, which coils are adapted to be heated by the flow of electric current therethrough for heating the wax within the receptacle 56 to maintain the same in a liquid condition of such consistency as to adapt it to be taken up upon the surface of the cylinder 20 in sufficient quantity as the latter rotates or moves therethrough. Current is supplied to the said coils through a conductor 59, the circuit being controlled by a switch indicated at 59'. Any other preferred heating means may be employed. For example a heated fluid such as hot water or steam may be provided in the chamber 58 or a gas flame may be employed.

In order that the required quantity of wax or other suitable material may be left upon the wax cylinder 20 for application to the surface of the sheet of paper 3 I have provided a stationary wiper 60, consisting in the construction shown of a cylindrical rod having a covering of felt, which is located so as to contact with the surface of the waxing cylinder 20 and to remove therefrom any excess quantity of wax. Any other suitable means may be employed for removing excess wax from the cylinder 20. The waxing cylinder is illustrated as rotating in a clockwise direction (see Fig. 1), the same direction as that of the shaft 21 on which it is mounted and supported.

The paper 3, as it leaves the supply roll as shown in Fig. 1 of the drawings, extends inwardly of a guide roller 61 and thence upwardly and slightly rearwardly around the outside of a guide roll 62 located in a plane a short distance above the top surface of the wax applying cylinder 20. From the latter the paper passes between a couple of oscillatable guide rods 63 and thence over the top of the wax applying cylinder 20 and underneath a roller 64 the movements of which are adapted to cause the sheet of paper to contact at spaced intervals with the sheet of paper and to permit its movement out of contact therewith at alternating spaced intervals, the latter being short as compared with the former.

From the cylinder 20 and roller 64 the waxed sheet travels forward underneath a guide roll 65 which also acts as a compensating means, as hereinafter will be set forth more fully, thence over a guide roll 66 rotatably mounted upon a stationary shaft which is supported in stationary bracket arms 67 which extend forwardly from the attachment, being themselves supported upon upright brackets 68 projecting upwardly and forwardly from the brackets 25, to which reference has been made previously.

From the guide rolls 66 the paper extends rearwardly over a guide roll 70 mounted upon the stationary bracket arms 71 which extend upwardly and slightly forwardly from the brackets 25. It may be noted that the guide roll 62 previously referred to is also mounted on these bracket arms 71.

Upon reference to Fig. 3 of the drawings it will be noted that one edge of the sheet of paper projects beyond the adjoining end of the wax applying cylinder 20 as is indicated at 72. In consequence of such projection it will be apparent that no wax will be applied by the cylinder 20 to the projecting marginal edge portion of said sheet.

A receptacle 75 for holding a suitable adhesive 76 is supported in adjoining relation to the paper guide roller 66 previously referred to. The said receptacle is provided with upwardly extending arms 77 terminating at their upper ends in hooks, as indicated at 78, which engage a rod

79 supported upon the upper ends of bars 80 which project upwardly from the front ends of the arms 67 previously referred to. It will be apparent that the receptacle 75 may be adjusted to any position lengthwise of the supporting rod 79.

A disk 81, which preferably is quite thin in a transverse direction, is rotatably mounted upon the receptacle 75. The lower portion of the said disk rotates in the adhesive 76 as shown. The periphery of the said disk contacts with the marginal edge portion 72 of the sheet 3 to which no wax has been applied, as will be apparent upon reference to Fig. 3. Rotation of the disk is caused by the friction between the edge thereof and the traveling sheet of paper or other suitable wrapping fabric 3. The receptacle is so suspended from the rod 79 and is located in such relation to the guide roller 66 that the edge of the disk contacts with requisite pressure against the sheet of paper as it travels past the same.

The several rollers 61, 62, 64, 65, 66 and 70 rotate as the result of friction between the same and the traveling sheet of paper guided thereby.

It may be noted at this point that the roller 64 previously referred to is rotatably mounted upon a rod or shaft 85 the opposite ends of which are supported in bearings 86 provided upon the rear ends of arms 87 loosely mounted upon an oscillatable shaft 88 supported in bearings 89, 90 and 91. The bearings 89 and 90 are provided in the respective upwardly extending bracket-like arms 68 previously referred to. The bearing 91 is provided at the forward part of the bracket 35 to which reference has been made previously. As will be apparent, the rock shaft 88 is slidable within the bearing 91. The arms 87 are adjustably connected with arms 92 which are adapted to be rigidly connected with the rock shaft 88 by means of binding screws 93. For adjustably connecting the arms 87 with the arms 92 I have provided the latter with arcuate slots 94, one of which is shown in Fig. 1 of the drawings, with which are engaged binding bolts and nuts shown at 95. It will be seen that by loosening these binding bolts and nuts the arms 87 may be adjusted about the rock shaft 88 and that by such adjustment the relation of the shaft 85 and roller 64 mounted thereon to the rock shaft 88 is changed.

The length of the roller 64 previously referred to should vary to correspond with the width of the sheet of paper which is being employed and from which the bags are to be constructed.

Arms 96 are rigidly mounted upon the rock shaft 88 and project toward the front of the attachment. The rotatable compensating guide roller 65 is mounted upon the front end portions of the said arms by means of adjustable pins 97, see Fig. 3, which have screw threaded engagement with openings in the said arms and the inner ends of which are cone-shaped to engage correspondingly shaped recesses in the opposite ends of the said roller.

The rock shaft 88, see Fig. 3, is provided with an arm 98 which is rigidly secured thereto upon the outside of and in adjoining relation to the bearing 91 previously referred to. The said arm extends rearwardly, as shown in Fig. 3, and is provided at its rear end with a lateral projection 99 upon which is mounted a rotatable wheel 100 which is in contact with a cam disk 101, see Fig. 4, mounted near the front end of the front section 102 of a jointed shaft the other sections of which are indicated at 103 and 12, the latter section being that on which the disk 11 for supporting the severing knife 10 is mounted. The section 102 of the jointed shaft is mounted at its front end in a bearing 104 provided upon the bracket 35 and at its rear end in a bearing 106 located, in the construction shown, immediately above the bearing 46 previously referred to. The cam disk 101 is provided with a projection 107 which contacts with the roller 100 once in each revolution of the said disk. The arm 98 previously referred to is held yieldingly downward with the roller 100 in contact with the cam disk 101 by means of a coiled spring 108 the lower end of which is connected to a fixed anchorage or pin upon the bracket 35 while the other end thereof is connected to a pin upon the said arm, all as clearly shown in Fig. 1 of the drawings.

The disk 101 is adjustably mounted upon the section 102 of the jointed shaft previously referred to. For the purpose of effecting such adjustments the said disk is located in adjoining relation to a stationary disk 110 mounted upon the shaft section 102. The disk 101 is provided with arc-shaped slots 111 through which binding nuts and bolts 112 extend. By the loosening of these binding nuts and bolts the disk 101 may be adjusted rotatably about the shaft 102. It will be apparent that by rotative adjustment of the disk the position of the projection 107 thereon radially with respect to the axis of the shaft section 102 is changed, and that in consequence the actuation of the arm 98 to raise and lower the roller 64 is varied with respect to the rotation of the said shaft section 102 and consequently with respect to the rotation of the severing knife 10 mounted upon a section of the same jointed shaft, whereby the application of wax or other suitable material to the paper is synchronized with respect to the operation of the knife. Or perhaps it would be more accurate to say that the roller 64 is lifted at intervals so as to provide the unwaxed spaces upon the surface of the paper sheet 3 in proper synchronized relation with respect to the severing knife 10.

It will be noted upon reference to Fig. 1 of the drawings that the upper side of the guide roller 62 is located in a plane a substantial distance above a plane tangent to the top side of the wax applying cylinder 20. In consequence of that relationship and of the position of the guide roller 65 relatively to the roller 62 the portion of the paper sheet 3 which extends between the top of the roller 62 and the bottom of the roller 65 tends to occupy a position above the top of the wax applying cylinder 20. The paper sheet 3 as it travels through the machine is held under more or less tension, as will be understood, so that as the roller 64 moves up and down the portion or section of paper extending between the rollers 62 and 65 likewise moves up and down and therefore into and out of contact with the top of the waxing cylinder 20.

As a further means for causing up and down movement of the portion of the sheet of paper between the rolls 62 and 65 in accordance with the movements of the roller 64 the guide rods 63 are provided which are located in parallel contiguous relation to each other and the sheet extends between the same. It will be seen, therefore, that the movement of these rollers causes a positive movement of the paper in like directions.

It will be understood that the coiled spring 108 operates through the arm 98, the rock shaft

88 and the arms 87 and 92 to hold the roller 64 in its lowermost position to press the adjoining portion of the sheet of paper against the top of the waxing cylinder 20. During the greater period of the rotation of the jointed shaft, comprising the section 102, the roller occupies its lowermost position to hold the paper against the waxing cylinder 20, being lifted only during the very short period or interval when the projection 107 is passing underneath and in contact with the roller 100. It will be apparent that this must be so when reference is made to Fig. 5 in which the wax coated portions 4 are of very considerable length as compared with the narrow unwaxed portions 115.

It will be apparent that as the roller 64 is elevated the roller 65 is lowered. That is due to the fact that the arms which support the roller 64 and the arms 96 which support the roller 65 are mounted upon the same rock shaft 88. The two sets of arms extend in opposite directions, as is shown in Fig. 1 of the drawings. The movement of the rollers 64 and 65 simultaneously in opposite directions operates to take up the slack in the section or portion of the sheet of paper between the said rollers which would be produced if only one were present. In this way the sheet is held continuously under substantially the same tension. As a result of so holding and controlling the sheet the subjecting of the same to sudden or jerking forces is prevented and in consequence the breaking of the paper is prevented, which is a matter of great practical importance in that both waste of material and loss of time are avoided.

As indicated in Fig. 5, the width of the sections or portions of wax coating is somewhat less than the width of the sheet 3 so that a marginal portion 116 of the latter is left unwaxed to which a line of adhesive, as indicated at 117, is applied in the manner already indicated.

In the making of paper bags the sheet of paper is so supported and guided that the longitudinally extending center line thereof passes through substantially the longitudinal middle or center line of the tube forming mechanism or means of the bag machine. It will be apparent, therefore, that as the widths of paper sheets are varied to provide for the making of bags of varying sizes it becomes necessary to adjust the wax applying and adhesive applying means of the attachment with respect to the bag making machine and particularly with respect to the tube forming portion thereof. To that end I have provided means for adjusting the base plate 26 lengthwise which means comprises a screw threaded adjusting rod 118 the outer end of which is rotatably supported in a bearing 119 located upon the upper side of the bottom of the trough-like portion 28 previously referred to. The adjusting rod 118 is held against axial or longitudinal movement by means of collars 120 secured thereto upon opposite sides of the bearing 119. The screw threaded portion of the adjusting rod 118 is in screw threaded engagement with a bracket 121 which is secured to the bottom of the supporting base plate 26. The outer end of the adjusting rod 118 is provided with a portion 122 of polygonal shape in cross section which is adapted to be engaged by a tool for rotating the said rod. Longitudinal adjustment or movement of the supporting base plate 26 is effected in one direction or the other depending upon the direction of rotation of the adjusting rod 118. As has been described previously, the brackets 25 are mounted upon the opposite ends of the supporting base plate 26. It follows, therefore, that these brackets together with the parts supported thereby are adjusted with the plate 26 when the latter is adjusted.

For the purpose of cooling the sections of wax coating upon the paper sheet I have provided means for producing and directing a blast of air against the same. For that purpose I employ an electric fan indicated as a whole at 123. For directing the air from the fan or other air blast producing means I have provided a hood-like member 124 mounted upon the fan structure and extending in a direction toward the surface of the sheet 3 against which it is desired that the blast of air impinge. The fan is supported upon arms 125 pivotally connected at their lower ends to the upper ends of the bracket like arms 68. The said arms 125 are adapted to be held in adjusted position by means of links 126 which have adjustable connection at their forward ends, as indicated at 127, to the said arms. At their rear ends the said links are pivotally connected to a rod 128 connected at its opposite ends to the upper ends of the upright and forwardly inclined bracket arms 71. The said rod acts to tie the said arms together.

Should it be found to be desirable, additional air cooling or other cooling means may be employed for cooling the coatings of wax upon the sheet 3.

As a preliminary step in the manufacture of paper bags from a sheet of paper such as indicated in Fig. 5 of the drawings the said sheet is folded into tubular form with the unwaxed marginal edge portion 116 overlying the outer side of the opposite edge portion of the said sheet, in which position the line of adhesive 117 contacts with the outer unwaxed surface of the said sheet. The said sheet as it travels through the bag forming machine is severed along the unwaxed portions 115 thereof to form tubular sections. After the formation of these sections and to complete the bag a line of cement is applied along one end thereof upon a projecting unwaxed portion which thereafter is folded over onto the adjoining outside portion of the tubular section which is unwaxed.

Although, as already indicated, in the machine as illustrated and described the wax is so applied to the surface of the paper web 3 that when the bags are formed the interior surfaces thereof are coated, yet it will be apparent that if the direction of travel of the web of paper through the machine and with respect to the waxing means be reversed so that the wax would be applied to the opposite side of the paper from that shown, the result would be that when the bags were formed the outer surfaces thereof would be coated.

It also will be apparent that if desired means may be provided for coating both sides of the paper with wax or other coating material at intervals, leaving one edge portion of one surface and the opposite edge portion of the other surface uncoated, so that when the bags are formed both the interior and exterior surfaces thereof will have a coating of wax or other material.

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

1. In an attachment for paper bag forming machines, the combination of a wax applying cylinder, means for rotating said cylinder, an oscillatable shaft having arms extending rearwardly therefrom and also having arms extending forwardly therefrom, a roller mounted upon the first named arms and supported thereby in opposed

relation to the said wax applying cylinder, a guiding and compensating member mounted upon the forward ends of the second named arms, means for oscillating the said shaft, means for supporting and guiding a sheet of paper past and in cooperative relation to the said wax applying cylinder, and means for holding the said sheet at all times in contact with the said roller and the said compensating member.

2. In an attachment for paper bag forming machines, the combination of a wax applying cylinder, means for rotating said cylinder, means located on opposite sides of and in spaced relation to said cylinder for supporting and guiding a sheet of paper past and in cooperative relation to the said wax applying cylinder, oscillating means located in cooperative relation to and upon the opposite side of the said sheet of paper from the said wax applying cylinder, means whereby the said oscillating means causes the said sheet to move into and out of contact with the said wax applying cylinder, and compensating means for preventing the formation of slack in the said sheet during the movements of the said oscillating means.

3. In an attachment for machines of the character described, the combination of a wax applying cylinder, means for supporting and guiding a sheet of paper past and in cooperative relation to the said wax applying cylinder, an oscillating shaft, arms adjustably mounted upon said shaft and extending rearwardly therefrom, means for holding the said arms in the positions to which they may be adjusted relatively to said shaft, means mounted upon said arms in cooperative relation to the said wax applying cylinder and upon the opposite side of the said sheet from the said cylinder, guide rods upon the said arms for causing positive movement of the said sheet toward and from the said wax applying cylinder upon the oscillating movement of the said arms, additional arms rigidly connected with and extending forwardly from the said oscillating shaft, and compensating means mounted upon the front ends of said arms and contacting with the said sheet of paper to prevent the formation of slack therein upon the upward movement of the third mentioned means.

4. In an attachment for a machine of the character described, the combination of a wax applying member, means for supporting and guiding a sheet of paper past and in cooperative relation to the said wax applying member, an oscillatable shaft, arms mounted upon the said shaft in spaced relation to each other and oscillatable with said shaft, means mounted upon the said arms and located in opposed cooperative relation to the said wax applying member and operating when oscillated to effect movement of the said sheet into and out of contact with the said wax applying member, an additional arm mounted upon the said oscillatable shaft, a rotatable cam member acting upon the outer swinging end of said last mentioned arm to effect oscillatory movements thereof to cause oscillation of the said shaft with the first named arms mounted thereon and the said means mounted on said arms, and means for adjusting the said cam to vary the time of the oscillations of the said shaft with respect to other moving parts of the mechanism.

5. In an attachment for a machine of the character described, a wax applying cylinder, means for effecting rotation of said cylinder, means for supporting and guiding a sheet of paper past and in cooperative relation to the said cylinder, certain of the said supporting means being located in planes above the top side of the said cylinder, and one edge portion of the said sheet extending beyond one end of the said cylinder, oscillating means located in cooperative relation to the said cylinder and upon the opposite side of the said sheet of paper from the said cylinder, means for effecting oscillatory movements of the said oscillating means whereby the said paper sheet is moved alternately into and out of contact with the said cylinder whereby wax is applied thereto at spaced intervals, adjustable means for varying the oscillations of the said oscillating member with respect to other moving parts of the machine, and means for applying an adhesive to the unwaxed marginal edge portion of the surface of the said sheet.

6. In an attachment for a machine of the character described, the combination of wax applying means, the wax applied to the said means being rendered liquid by the application of heat thereto, means for supporting and guiding a paper sheet past and in cooperative relation to the said wax applying means, means whereby wax is applied to portions of the said sheet of a width less than the width of the said sheet, the said waxed areas being separated by unwaxed portions, means for applying an adhesive to the unwaxed marginal edge portion of the surface upon which the said waxed areas have been provided, and means for cooling the coating of wax upon the said sheet.

7. In an attachment for a machine of the character described, the combination of wax applying means, the wax applied to the said means being rendered liquid by the application of heat thereto, means for supporting and guiding a paper sheet past and in cooperative relation to the said wax applying means, means whereby wax is applied to portions of the said sheet of a width less than the width of the said sheet, the said waxed areas being separated by unwaxed portions, means for applying an adhesive to the unwaxed marginal edge portion of the surface upon which the said waxed areas have been provided, and means for directing a blast of air upon the waxed surface of the said sheet to cool the wax thereon.

8. An attachment for a paper bag machine arranged to form an elongated sheet of paper into a tube and adapted to cooperate with revoluble means arranged for severing at intervals the tube so formed; said attachment comprising wax applying means, means for supporting and guiding the said sheet of paper past and in cooperative relation to the said wax applying means, an oscillatable shaft having arms projecting rearwardly therefrom, means mounted upon said arms and located in cooperative relation to the said wax applying means upon the opposite side of the said sheet of paper from the said wax applying means, and the said oscillatable shaft having an additional arm, a cam disk mounted to rotate in synchrony with the said revoluble severing means, said disk acting upon the outer free end of the said additional arm to effect oscillatory movements of the said shaft and the said arms with the said means mounted on the latter to cause movement of the said sheet into and out of contact with the said wax applying means, and means whereby the said cam disk may be adjusted to synchronize the oscillatory movements of the said shaft with the revoluble movement of the said severing means so as to provide unwaxed areas upon the said sheet transversely thereof in synchronized relation to the revoluble movements of the said severing means.

9. An attachment for a paper bag machine arranged to form an elongated sheet of paper into a tube and adapted to cooperate with revoluble means for severing at intervals the tube so formed, the said attachment comprising a wax applying rotatable cylinder, means for supporting and guiding said paper sheet past and in cooperative relation to the said wax applying cylinder, an oscillatable shaft having arms mounted thereon and projecting rearwardly therefrom, means mounted upon said arms and contacting with the said sheet of paper to effect movement thereof into and out of contact with the said waxing cylinder due to the oscillation of the said arms and shaft, an additional arm mounted upon the said shaft and extending rearwardly therefrom, a cam having connection and rotating with the said revoluble severing means, which cam acts upon the outer end of said additional arm to effect pivotal movements thereof to cause oscillatory movements of the said shaft, means for adjusting the said cam relatively to the said revoluble severing means to vary the positions of the waxed and unwaxed areas upon the said sheet of paper so as to cause the said severing means to sever the said sheet after its folding into tubular form at the unwaxed areas.

THOMAS M. ROYAL.