

May 16, 1939.

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2,158,280

MACHINE FOR FEEDING SHEETS, LABELS, AND THE LIKE

Filed Jan. 15, 1935

2 Sheets-Sheet 1

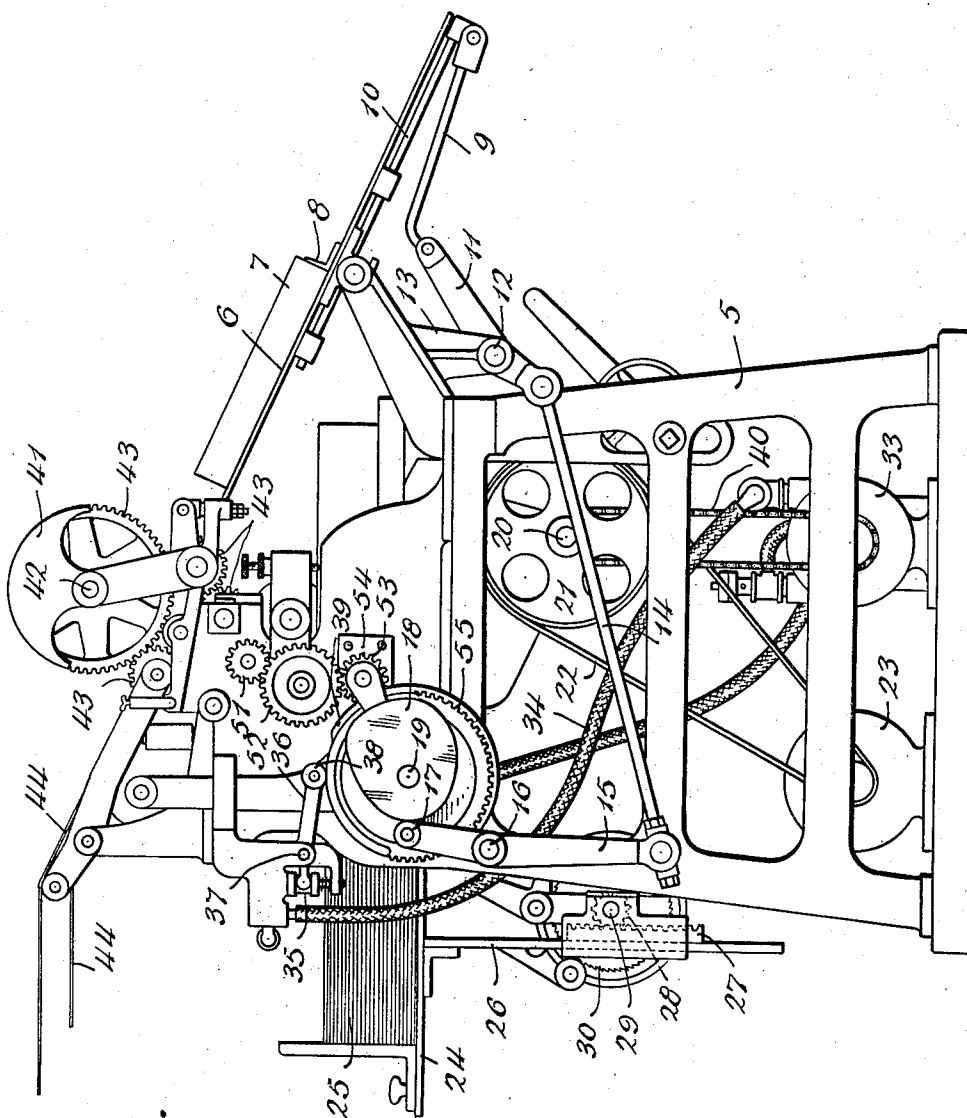


Fig. 1.

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2 Sheets-Sheet 2

Fig. 2.

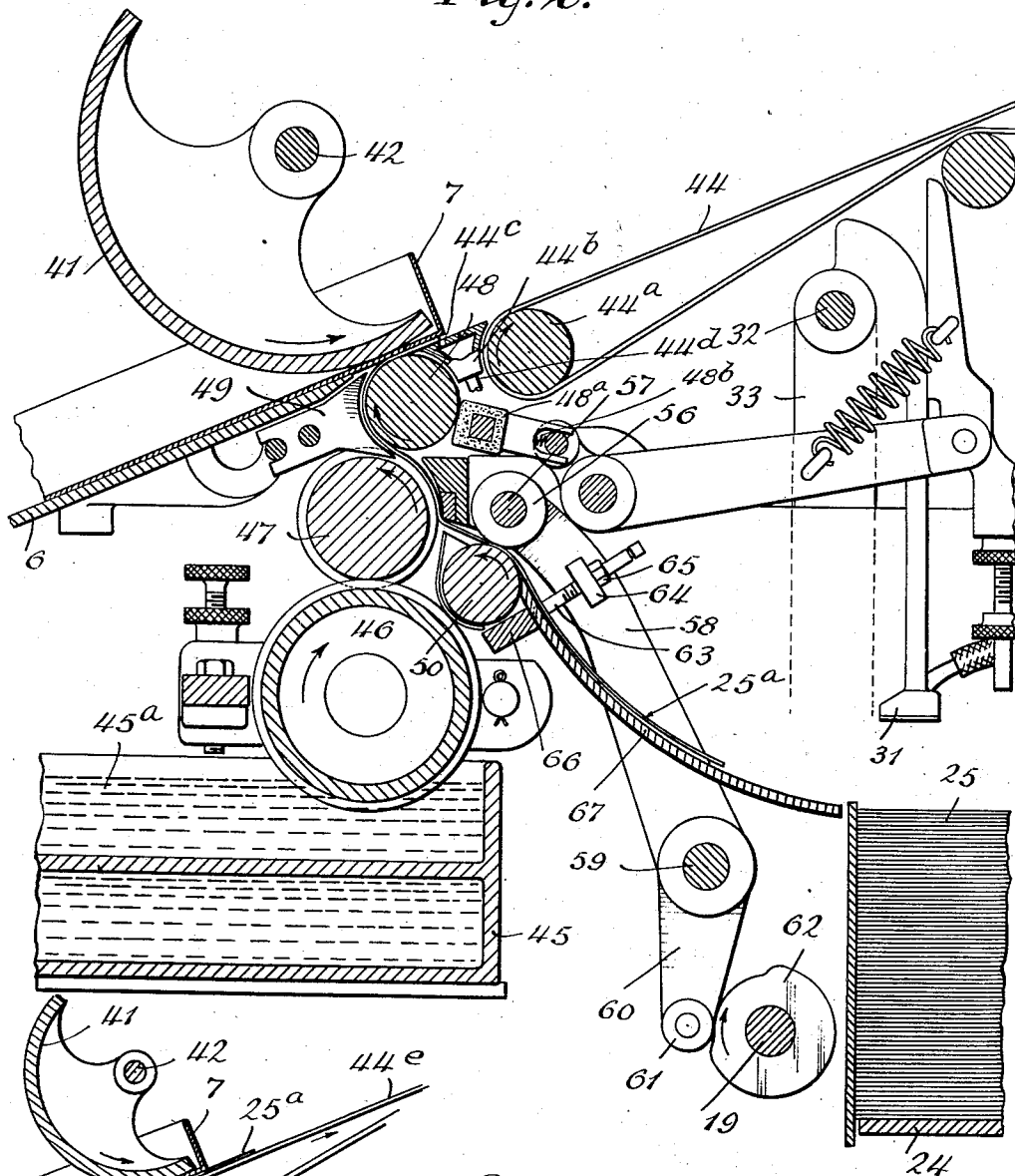
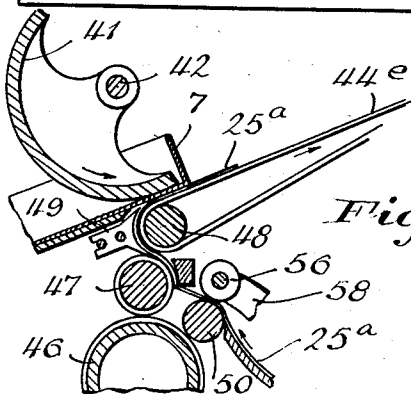


Fig. 3.



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MACHINE FOR FEEDING SHEETS, LABELS,
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26 Claims. (Cl. 216—55)

The invention relates to machines of the type in which sheets of paper, labels or the like are applied, for instance by pasting, to other elements such as boxes, flat paper or other boards and the like. In existing machines of the indicated class difficulty has been encountered in providing and maintaining the desired registry of the sheets of paper, labels or the like, with the elements to which said sheets, labels or the like are applied. The invention contemplates the provision of a simple and efficient machine whereby the sheets of paper, labels or the like will be automatically supplied to said elements in a uniform and reliable manner to provide an accurate and sustained registry and relationship between said sheets, labels or the like and said elements. Other more specific objects will appear from the description hereinafter and the features of novelty will be pointed out in the claims.

In the accompanying drawings, which illustrate an example of the invention without defining its limits, Fig. 1 is a side elevation of a machine embodying the novel features; Fig. 2 is a fragmentary sectional elevation of such machine on an enlarged scale, and Fig. 3 is a fragmentary sectional view similar to Fig. 2, showing another form of the invention.

For purposes of illustration and description the machine is shown in the drawings in a form designed for applying sheets of paper or other material to hollow containers, it being understood that this is not, in any sense, intended to define the limits of the invention.

In its illustrated form the machine consists of a frame 5 of suitable dimensions and design and carrying an inclined runway 6 leading to the point at which application of the sheets, labels or the like takes place. The runway 6 is provided with a means for advancing the elements, such as hollow containers 7 to said point of application, said means being shown in the form of a member 8 slidably mounted on the runway 6 and reciprocated, in properly timed relationship, with its associated mechanism by operating means of conventional form. In its illustrated form said operating means comprises a link 9 pivotally connected with a slide 10 which carries the member 8, and with a rocking lever 11 pivoted at 12 on a bracket 13 suitably mounted on the frame 5. The rocking lever 11 in turn is connected by means of a connecting rod 14 with one end of a rocking arm 15 pivoted at 16 on the frame 5 and carrying a roller 17 at its other end as shown in Fig. 1. The roller 17 is in rolling contact with a cam 18

fixed upon a cam shaft 19 suitably journaled on the frame 5 and rotatably actuated in any conventional manner for instance by being operatively connected with a driving shaft 20 rotatably mounted on the frame 5 in any convenient way. The driving shaft 20 may be provided with a pulley 21 connected by means of a belt 22 with an electric motor 23 which constitutes the means for operating the machine illustrated in the drawings.

The machine, in the illustrated form, further includes a support 24 of suitable design for carrying a stack 25 of sheets, labels or the like, said support 24 being carried by a member 26 mounted in any customary manner on the frame 5 so as to be vertically adjustable relatively thereto. For the purpose of maintaining the top of the stack 25 at a proper level for co-operation with means whereby successive sheets, labels or the like are transferred from the stack to the point of application to the hollow containers 7 or their equivalent, the member 26 is provided with a rack 27 meshing with a pinion 28. The latter is carried by a shaft 29 suitably journaled on the frame 5 and periodically rotated by means of a ratchet wheel 30 and co-operating pawl to elevate the support 24 and stack 25 in properly timed relationship with the co-operating mechanical elements of the machine.

The delivery means for transferring the sheets, labels or the like in individual succession from the stack 25 comprises a suction head 31 pivotally connected at 32 with a member 33 vertically movable in any well known way relatively to the stack 25 to pick up the uppermost sheet, label or the like therefrom; mechanism of any conventional type is provided for swinging the suction head 31 on the pivot 32 in a manner to transfer or deliver said upper sheet, label or the like into co-operative relation to feeding means to be described more fully hereinafter. Suction is developed in the suction head 31 for instance by means of a suitable suction pump 33 or the like through the medium of a connecting tube 34 which is controlled by means of a valve 35 of any suitable form. The valve 35 is operated in predetermined relationship to the aforesaid feeding means for instance by means of a rocking arm 36 pivoted at 37 and carrying a roller 38 in rolling contact with a cam 39 mounted on the cam shaft 19. In the illustrated example the suction pump 33 is operatively connected by means of a sprocket chain 40 and co-operating sprockets with the driving shaft 20.

In addition to the parts so far described the

machine includes means for developing pressure whereby the sheets, labels or the like are caused to firmly adhere to the elements to which they are applied. This pressure developing means is shown in the illustrated example in the form of a segmented cylinder 41 carried by a shaft 42 suitably journaled in the machine and operated by gearing 43 in any conventional manner. For the purpose of removing the containers 7 after the sheets, labels or the like have been applied thereto the machine may be provided with conveying means of any customary type; in the form shown in Figs. 1 and 2, the aforesaid conveying means consists of a conveyor belt 44 which passes over a roll 44^a operated, for instance, by the gearing 43 as illustrated in Fig. 1.

Machines of the type under discussion further include means for applying an adhesive coating to the sheets, labels or the like whereby the latter are caused to adhere to the containers 7 or other elements to which said sheets, labels or the like are to be attached. In its usual form this adhesive applying means includes a container 45 suitably mounted in the machine and adapted to contain a supply 45^a of paste, glue or other adhesive. The applying means further consists of a transfer roll 46 journaled in the machine and adapted to dip into the supply 45^a of adhesive or the like, so as to become covered with such adhesive or the like, in its rotation through the supply 45^a. In the customary arrangement the transfer roll 46 is in tangential rolling engagement with an adhesive applying roll 47 also journaled in the machine in any conventional manner, said rollers 46 and 47 in some instances being circumferentially grooved and meshing with each other in the manner illustrated in Fig. 2 of the drawings. The adhesive applying roll 47 in the illustrated example is journaled in proximity to a deflecting roll 48 rotatably mounted in the machine, in operative relation to the delivery end of the inclined runway 6, and in spaced relation to the roll 44^a of the conveying means, as shown in Fig. 2, suitable pick-off devices 49 being provided in the customary manner for detaching the sheets, labels or the like from the adhesive applying roll 47 and for deflecting the same about the circumference of the deflecting roll 48 as also illustrated in Fig. 2. In practice the rolls 47 and 48 are driven at the desired respective rates by means of suitable gears operatively connected, for instance, with the gearing 43. The arrangement as shown in the latter figure may also include a wiper 48^a held in yielding wiping engagement with the roll 48 by a spring 48^b, and suitably mounted in the machine in any customary way. As so far described, the elements of the machine may be of any well known type and arranged in any conventional manner to bring the individual sheets, labels or the like into proper position for adhesive application to the containers 7 or their equivalent. The form of the machine shown in Figs. 1 and 2 preferably also includes a stationary hollow bridge 44^b fixed in place in any convenient manner in the space between the rolls 48 and 44^a and provided in its upper face with one or more apertures 44^c, the bridge 44^b is connected with a suitable air pressure line 44^d so that air is blown upwardly through the apertures 44^c to prevent the sheet, label or the like 25^a which is to be applied to the container 7 or its equivalent from becoming jammed in the event that said sheet, label or the like 25^a is allowed to run ahead of the container 7 or its equivalent; the bridge 44^b in addition serves to guide the sheet, label or the

like 25^a to the conveyor belt 44. In practice the bridge 44^b provides a film of air for supporting those portions of the labels which may run ahead of or otherwise extend beyond the container or its equivalent, while passing from the roll 48 to the conveyor belt 44.

The novel features of the instant invention are found in the previously mentioned feeding means which is constructed and operates in a manner to consistently and automatically guarantee proper and predetermined registration between the sheets, labels or the like and the elements to which they are to be adhesively or otherwise applied. In the illustrated arrangement, as shown in Fig. 2 of the drawings, the aforesaid feeding means is exemplified by a feed roller 50 journaled in the machine in operative proximity to the adhesive applying roll 47 and intermittently driven in any convenient manner. In the drawings the intermittent rotation of the feed roll 50 is effected by means of a gear 51 mounted on the shaft which carries the roll 50 and meshing with a gear 52 suitably mounted in the machine, said gear 52 in turn meshing with another gear 53 rotatably supported for instance upon a bracket 54. The gear 53 is rotatably actuated at intervals by a mutilated gear 55 fixed upon the cam shaft 19 as shown in Fig. 1 of the drawings. The feeding means for the sheets, labels or the like further includes a co-operating idler roll 56 carried by a shaft 57 which is journaled in levers 58 secured upon a rock shaft 59 suitably supported on the frame 5 of the machine. In the operation of the machine the co-operating roll 56 is periodically moved toward and away from the feed roll 50 by mechanism operating to produce the predetermined results. In the form shown in the drawings this mechanism is exemplified by an arm 60 fixed on the rock shaft 59 and carrying a roller 61 in rolling engagement with a cam 62 secured upon the cam shaft 19. For the purpose of determining the extent of adjustment of the co-operating roll 56 toward the feed roll 50, the levers 58 may carry stops in the form of screws 63 adjustably mounted in lugs 64 forming integral parts of the levers 58, said screws 63 being fixed in adjusted positions for instance by means of lock nuts 65; the stop screws 63 are designed to engage a stationary bar 66 mounted in the machine in any suitable way. In the preferred arrangement the machine may include a feed plate 67 having its opposite ends located in proximity to the stack 25 and the feed roller 50 respectively for the purpose of guiding the individual sheets, labels or the like from the stack to the feeding means as will be apparent.

In the operation of the machine the suction head 31 is actuated in the well known way to remove the uppermost sheet, label or the like 25^a from the stack 25 and transfer it into receiving relation to the feed roller 50 and co-operating roll 56. When this transfer takes place the roll 56 is spaced from the feeding roller 50 so that the suction head 31 inserts the leading edge of said sheet, label or the like 25^a between said rolls 50 and 56 which are stationary at the time. As soon as the leading edge of said sheet, label or the like 25^a has been properly inserted between the spaced rolls 50 and 56 the feed of the sheet, label or the like 25^a ceases and the roll 56 is shifted toward the roll 50 by the action of the cam 62 and its associated elements, so that said leading edge of the sheet, label or the like 25^a is now gripped between said rolls 50 and 56. At this stage the mutilated gear 55 through the gearing

53, 52 and 51 will begin a periodic rotation of the feeding roller 50 and accordingly will cause the sheet, label or the like 25^a to be fed into engagement with the surface of the adhesive applying roll 47, it being understood that the co-operating idler roll 56 is co-operatively rotated during this operation without however being positively driven. The sheet, label or the like 25^a engages the adhesive coated surface of the roller 47 and is carried along thereby until it reaches the pick-off devices 49 whereby said sheet, label or the like 25^a is detached from the roll 47 and deflected into engagement with the surface of the deflecting roll 48. The latter continues the travel of the sheet, label or the like 25^a and brings its advance end portion or leading edge into surface engagement with that portion of the container 7 or its equivalent which projects at this time beyond the delivery end of the inclined runway 6 in the manner illustrated in Fig. 2. It will be understood, as the sheet, label or the like 25^a is carried along on the surface of the roll 47, that the one surface of said sheet, label or the like 25^a will be coated with adhesive, which adhesively coated surface is brought into contact with the surface of the container 7 or its equivalent by the action of the deflecting roll 48, as will be apparent. At the moment when the advance end portion of the sheet, label or the like 25^a is initially brought into engagement with the container 7 or its equivalent, the segmented cylinder 41 or equivalent pressure developing means will begin to exert a pressure upon the hollow container 7 or its equivalent on that surface of the latter opposite to that to which the sheet, label or the like 25^a is being applied. This pressure will be resisted by the deflecting roll 48 and accordingly will cause the sheet, label or the like 25^a to be pressed into firm engagement with the container 7 or its equivalent to thereby securely paste the sheet, label or the like 25^a thereto. When the advance edge portion of said sheet, label or the like 25^a has been adhesively connected to the container 7 or its equivalent, the co-operating roll 56 will be moved in a direction away from the feed roller 50 by the action of the cam 62 on the roller 61 and arm 60. The said sheet, label or the like 25^a will thereby be no longer subjected to a feeding action by the feed roll 50 and co-operating roll 56, and as the operation of the machine continues will simply be drawn along by the travelling container 7 or its equivalent which is being shifted lengthwise of the runway 6 through the medium of the segmented cylinder 41 or its equivalent. The cam 62 is so constructed that the co-operating roll 56 will be held in spaced relation to the feed roll 50 during the entire operative period subsequently required to attach or paste the sheet, label or the like 25^a to the container 7 or its equivalent. In the machine shown in the drawings, the timing of the parts is so arranged that when the cam 62 operates to shift the co-operating roll 56 away from the feed roll 50, the rotation of the latter by the mutilated gear 55 will also be arrested. After the attachment of the sheet, label or the like 25^a to the container 7 has been effected, the particular container 7 or its equivalent will be removed by the conveying means 44, and a new container 7 or its equivalent will replace the same, after which the foregoing operations will be repeated and the co-operating roll 56 will be shifted toward the feed roll 50 through the medium of the cam 62 and its associated elements.

To effect the desired results the relative opera-

tions of the cams 39 and 62 are so timed that the valve 35 will be operated to relieve the suction in the suction head 31 so as to permit the advancing sheet, label or the like 25^a to be completely controlled by the action of the feed roll 50 and the co-operating roll 56.

In order to prevent undesirable accumulation of adhesive upon the leading edge or advance end portion of the sheet, label or the like 25^a, it is desirable to properly control the velocity of movement of the sheet, label or the like 25^a relatively to the speed of the adhesive applying surface of the roll 47. For this reason the roll 48 revolves continuously at a constant linear surface speed which is greater than that of the adhesive applying roll 47; the latter also rotates continuously at a constant speed, while the feed roll 50, during its periods of operation, rotates at a linear surface speed which is less than that of the adhesive applying roll 47. The described surface speed relation of the rolls 48, 47 and 50 not only prevents an undesirable accumulation of adhesive on the advance end portion of the sheet, label or the like 25^a, but also avoids scraping of any adhesive on the rear edge thereof. As soon as a proper length of the advance edge portion of the sheet, label or the like 25^a has been applied to the container 7 or its equivalent, the rotation of the feed roll 50 ceases.

In the form shown in Fig. 3, the roll 44^a is omitted, and the conveyor belt 44^e which corresponds to the conveyor belt 44 of the form first described, passes over the deflecting roll 48, the bridge 44^b in this case being unnecessary and the wiper 43^a being also omitted. In this arrangement the conveyor belt 44^e itself prevents jamming of the sheet, label or the like 25^a and properly supports the leading edge or advance end portion thereof particularly when said sheet, label or the like 25^a is allowed to run ahead of the container 7 or its equivalent as illustrated in Fig. 3 and as required in certain types of work. Otherwise the construction and operation of the machine shown in Fig. 3 may be the same as that illustrated in Figs. 1 and 2.

In existing arrangements in which the advancing sheet, label or the like is positively fed by feeding means throughout the entire period of the application of said sheet, label or the like, to a container 7 or its equivalent, the possibility is always present that the action of the feeding means will be out of harmony with the forward movement of the container 7 or its equivalent so that the intended relationship between the sheet, label or the like, and the element to which it is being applied will be disturbed; in other words, the action of the positively acting feeding means may delay the travel of the sheet, label or the like, or slippage occurring in said feeding means may develop a defective feeding of said sheet, label or the like, with respect to the forward movement of the container 7 or equivalent element. As a result the sheet, label or the like will be out of registry or out of predetermined relation with the element to which it is to be adhesively applied and thus results in a defective product. These objections are entirely avoided and overcome in the instant arrangement in which the sheet, label or the like 25^a after its leading edge or advance end portion has become adhesively attached to the container 7 or its equivalent, is controlled in its further movement entirely by the travel of said container 7 or equivalent ele-

ment, independently of any action by the feeding means, which, as previously stated, is inoperative during these operations. There is accordingly no possibility of disarranging the relative relationship between the container 7 or its equivalent and the sheet, label or the like 25^a with the result that accurate registration or other predetermined relation is absolutely assured and sustained and the possibility of producing defective products is entirely avoided or at least reduced to a minimum.

While the novel arrangement has been shown and described in connection with a machine of the illustrated type, it will be understood that such novel arrangement may be efficiently employed in other classes of mechanism in which it is essential to bring one element exemplified by the sheet, label or the like 25^a into predetermined registry or other relation with another element exemplified by the container 7 and to maintain such registry or other relation throughout a given operative period.

Various changes in the specific forms shown and described may be made within the scope of the claims without departing from the spirit of the invention.

I claim:

1. In the art of applying sheets to elements, the method which comprises independently advancing a sheet at a controlled velocity, progressively applying an adhesive coating to said sheet in a direction from the leading edge toward the rear edge thereof, independently advancing an element at a greater velocity than the velocity of said sheet, applying an advance edge portion of said sheet adhesively to said advancing element, discontinuing the independent advancing of said sheet substantially in coincidence with the adhesive application of the advance edge portion of said sheet to said advancing element and permitting the continued movement of said sheet to be subsequently controlled by the advancing element, and progressively applying pressure to said sheet to complete the application thereof to said element.

2. In the art of applying sheets to elements, the method which comprises independently advancing a sheet at a given velocity, progressively applying an adhesive coating to said sheet in a direction from the leading edge toward the rear edge thereof, adhesively applying an advance edge portion of said sheet to a travelling element moving at a higher velocity prior to the completion of the initial adhesive application and subsequently continuing the adhesive application as said sheet moves at the velocity of said element.

3. In a machine of the class described, the combination of means for feeding a first element, feeding means for feeding a second element into co-operative relation to said first element for progressive predetermined union therewith, positively driven adhesive applying means for coating a surface of said second element with adhesive, and means for discontinuing the feeding action of said feeding means on said second element subsequent to the initial union of the two elements to thereafter permit the feed of said first element to control the continued travel of both elements and to cause the continued travel of the first element to control the continued progressive union of the second element with said first element, the speed of the second element fed by its initial feeding means and the speed of said second element under the con-

trol of the first element being respectively slower and faster than the velocity of the adhesive applying means.

4. In a machine of the class described, the combination of means for feeding an element along a given path, feeding means operating at a given speed for feeding a sheet into co-operative relation to said element for progressive application thereto, means having a surface speed less than the speed of said element-feeding means and greater than that of the sheet-feeding means for coating a surface of said sheet with adhesive, and means operating in predetermined time relationship to the travel of said element to throw said sheet-feeding means out of action substantially in coincidence with the initial application of the sheet to said element whereby the continued travel of said element will be transmitted to said sheet subsequent to the throwing of said sheet-feeding means out of action to control the feeding and progressive application thereof to said element.

5. In a machine of the class described, the combination of means for feeding a first element along a given path, a pair of co-operating feed rolls for feeding a second element into co-operative relation to said first element for predetermined progressive union therewith, and means whereby said feed rolls are shifted relatively to each other into inoperative relation to arrest the feeding action thereof substantially in coincidence with the initial application of said second element to said first element whereby the latter subsequently to said arrest of the feeding action of said feed rolls controls the continued feed of the second element.

6. In a machine of the class described, the combination of means for feeding an element along a given path, a positively operated feed roll, an idler roll cooperating with said feed roll for feeding a sheet into co-operative relation to said element for progressive application thereto, and means for shifting said idler roll relatively to said feed roll to arrest the feeding action of said rolls substantially in coincidence with the initial application of said sheet to said element whereby the latter subsequently to said arrest of the feeding action of said rolls controls the continued feed of said sheet during the continued progressive application thereof to said element.

7. In a machine of the class described, the combination of means for feeding an element along a given path, a positively operated feed roll, an idler roll co-operating with said feed roll for feeding a sheet into co-operative relation to said element for progressive application thereto, means for coating a surface of said sheet with adhesive, supporting means for said idler roll, a rock-shaft on which said supporting means is mounted, an arm connected with said rock-shaft, and mechanism including a cam co-operating with said arm and supporting means to shift said idler roll away from said feed roll to arrest the feeding action of said rolls substantially in coincidence with the initial application of said sheet to said element whereby the latter subsequently to said arrest of the feeding action of said rolls controls the continued feed of said sheet during the application thereof to said element.

8. In a machine of the class described, including means for feeding an element, and means for adhesively applying a sheet to said element, that improvement which comprises a pair of co-

operating feed rolls, delivery means for delivering a sheet to said feed rolls, means whereby said feed rolls are intermittently operated to feed said sheet, means whereby said feed rolls are separated during stationary periods between successive intermittent operations to permit said sheet to be inserted between said feed rolls by said delivery means, and subsequently brought together to grip the inserted sheet concurrently with the start of an intermittent operation of said feed rolls, and means whereby said delivery means is rendered inactive relatively to said sheet when the latter has been delivered to said feed rolls.

9. In a machine of the class described, including means for feeding an element, and means for adhesively applying a sheet to said element, that improvement which comprises a pair of co-operating feed rolls, a movable suction head for delivering a sheet to said feed rolls, means whereby said feed rolls are intermittently operated to feed said sheet, means whereby said rolls are separated to receive said sheet, and subsequently brought together to grip the sheet, the adjustment of said feed rolls from and toward each other being in timed relationship to the periods of rest and operation respectively of said feed rolls, and means whereby the suction in said suction head is discontinued when said sheet has been delivered to said feed rolls.

10. In a machine of the kind described, the combination of means for feeding an element, means for feeding a gummed sheet of larger dimensions than a given surface of said element into co-operative surface relation therewith with predetermined portions of said sheet projecting beyond said surface of said element, means for progressively applying said gummed sheet to said surface of said element to cause said sheet to progressively adhere thereto as said element is progressively fed, and travelling means for supporting the projecting portions of said sheet during the progressive application thereof to said element.

11. In a machine of the kind described, the combination of means for feeding a container, means for feeding a gummed sheet of larger dimensions than a given surface of said container in a manner to bring the advance edge portion of said sheet into surface engagement with said given surface so as to project beyond the same, means for progressively applying said gummed sheet to said given surface to cause said sheet to progressively adhere thereto as said container is progressively fed, means for discontinuing the feeding action of said sheet feeding means subsequent to the application of the advance edge portion of said sheet to said container to permit the continued movement of said sheet to be controlled by the advancing container, and travelling means for supporting the projecting portion of said sheet during the progressive application thereof to said container.

12. In a machine of the kind described, the combination of means for feeding an element, means for feeding a sheet having a predetermined length, a deflecting roll having a circumferential dimension less than said length of said sheet for deflecting the latter into surface engagement with said element for progressive surface application thereto, and means co-operating with said deflecting roll for feeding said element and sheet and coincidentally effecting

the progressive application of said sheet to said element.

13. In a machine of the kind described, the combination of means for feeding an element, means for feeding a sheet having a predetermined length, a deflecting roll having a circumferential dimension less than said length of said sheet, an endless conveyor passing over said deflecting roll for deflecting the sheet into surface engagement with said element for progressive surface application thereto, and means co-operating with said deflecting roll and endless conveyor for feeding said element and sheet and coincidentally effecting the progressive application of said sheet to said element, said conveyor supporting the element and sheet and continuing the travel thereof during the progressive application of the sheet to the element and subsequent thereto.

14. In a machine of the kind described, the combination of means for feeding a container, means for feeding a sheet of larger dimensions than a given surface of said container and having a predetermined length, a deflecting roll having a circumferential dimension less than said length of said sheet for deflecting the latter into surface engagement with said given surface so as to project beyond the same, means co-operating with said deflecting roll for feeding said element and sheet and for coincidentally effecting a progressive application of said sheet to said container surface, and travelling means for supporting the projecting portions of said sheet during and subsequent to the progressive application thereof to said container.

15. In a machine of the kind described, the combination of means for feeding a container, means for feeding a sheet of larger dimensions than a given surface of said container and having a predetermined length, a deflecting roll having a circumferential dimension less than said length of said sheet for deflecting the latter into surface engagement with said given surface so as to project beyond the same, means co-operating with said deflecting roll for feeding said element and sheet and for coincidentally effecting a progressive application of said sheet to said container surface, and a travelling endless conveyor for supporting the projecting portions of said sheet during and subsequent to the progressive application thereof to said container and adapted to continue the travel of the combined container and sheet.

16. In the art of applying sheets to articles, the method which comprises simultaneously and by positive feeding actions moving an article and a sheet toward each other to cause union initially of only a portion of said sheet with a surface of said article, gumming said sheet during movement thereof toward said article and before such union has been effected, removing the positive feeding action with respect to said sheet after such initial union has been effected and independently continuing the positive feeding action with respect to said article, and utilizing the continuing movement of said article, due to the positive feeding action, to cause union of another portion of said sheet with said surface.

17. In a machine for applying sheets to articles, means for imparting movement to an article and a sheet toward each other by a positive feeding action with respect to both to cause union initially of only a portion of said sheet with a surface of said article, means for gumming said sheet during movement thereof to-

ward said article and before such initial union is effected, means for removing the positive feeding action with respect only to said sheet after such initial union has been effected, and means co-operable with said article and said sheet for causing union of another portion of said sheet with said surface during the continuing movement of said article under the positive feeding action with respect to the latter.

18. In a machine for applying sheets to articles, a sheet-feeding roll, a sheet-deflecting roll, a gumming roll disposed between said sheet-feeding and sheet-deflecting rolls and in proximity to said sheet-feeding roll to receive the sheet directly therefrom and in proximity to said sheet-deflecting roll to deliver the gummed sheet directly to the latter, means for rotating the gumming roll at a linear surface speed greater than such speed of said sheet-feeding roll to prevent accumulation of an excess of adhesive on the advance end portion of the sheet, and means for rotating said sheet-deflecting roll at a linear surface speed greater than such speed of said gumming roll to prevent scraping of adhesive on the rear edge of the sheet, and means for moving an article over said sheet-deflecting roll to cause union of the gummed sheet with the adjacent surface of the article.

19. In a machine for applying sheets to articles, a sheet-feeding roll, a gumming roll for receiving the sheet from said sheet-feeding roll, a sheet-deflecting roll for receiving the gummed sheet from said gumming roll, means for rotating the gumming roll at a linear surface speed greater than such speed of said sheet-feeding roll to prevent accumulation of an excess of adhesive on the advance end portion of the sheet, and means for rotating said sheet-deflecting roll at a linear surface speed greater than such speed of said gumming roll to prevent scraping of adhesive on the rear edge of the sheet, and means for moving an article over said sheet-deflecting roll to cause union of the gummed sheet with the adjacent surface of the article.

20. In a machine for applying sheets to articles, a sheet-feeding roll, a sheet-deflecting roll, a gumming roll disposed between said sheet-feeding and sheet-deflecting rolls and in proximity to said sheet-feeding roll to receive the sheet directly therefrom and in proximity to said sheet-deflecting roll to deliver the gummed sheet directly to the latter, an idler roll associated with said sheet-feeding roll for pressing the sheet in tractive surface engagement with the latter, means for causing said idler roll to function intermittently, and means periodically active for moving an article over said sheet-deflecting roll to cause union of the gummed sheet with the adjacent surface of the article.

21. In a machine for applying sheets to articles, a sheet-feeding roll, a gumming roll for receiving the sheet from said sheet-feeding roll, a sheet-deflecting roll for receiving the sheet from said gumming roll, means periodically active for moving an article over said sheet-deflecting roll to cause union of the gummed sheet with the adjacent surface of the article, and means associated with said sheet-feeding roll

and operating to intermittently arrest its feeding action in substantial coincidence with the initial union of said sheet with said article.

22. In a machine for applying sheets to articles, a sheet-feeding roll, a gumming roll for receiving the sheet directly from said sheet-feeding roll, a sheet-deflecting roll for receiving the sheet directly from said gumming roll, means associated with said sheet-feeding roll and operating to cause it to function intermittently to feed the sheet positively to said gumming roll, and means periodically active for moving an article over said sheet-deflecting roll to cause union of the gummed sheet with the adjacent surface of the article.

23. In the art of applying gummed sheets to articles, the method which comprises progressively effecting adhesive engagement of a portion of a sheet with a surface of an article with another portion of said sheet extending beyond an edge of said article, and directing air under pressure at a point in proximity to said edge of the assembly to support said portion of the sheet extending beyond such edge.

24. In a machine for applying sheets to articles, means for progressively effecting adhesive engagement of a portion of a sheet with a surface of an article with another portion of said sheet extending beyond an edge of said article, and means for directing air under pressure at a point in proximity to said edge of the assembly to support said portion of the sheet extending beyond such edge.

25. In a machine for applying sheets to articles, means for imparting movement to an article and a sheet toward each other by a positive feeding action with respect to both to cause progressive union initially of only a portion of said sheet with a surface of said article, means for gumming said sheet during movement thereof toward said article and before such initial union is effected, means for removing the positive feeding action with respect only to said sheet after such initial union has been effected, and means co-operating with said article and said sheet for causing progressive union of another portion of said sheet with said surface during the continued movement of said article under the positive feeding action with respect to the latter.

26. In a machine for applying sheets to articles, means for initially feeding an article, means for feeding a sheet having a predetermined length in excess of a given dimension of said article whereby a portion of said sheet extends beyond the same, a deflecting roll having a circumferential dimension less than said length of said sheet for deflecting the latter into surface engagement with the article for progressive surface application thereto, means co-operating periodically with said deflecting roll for subsequently feeding said article and said sheet and coincidentally effecting the progressive application of said sheet to said article, and traveling means for supporting the extending portion of said sheet and the united article and sheet beyond said deflecting roll and during the progressive application of the sheet to the article.

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