Oct. 27, 1942. G. W. VON HOFE 2,300,185

REGISTERING MEANS FOR LABELING AND OTHER MACHINES

Filed April 2, 1941 2 Sheets-Sheet 1

Fig. 1.

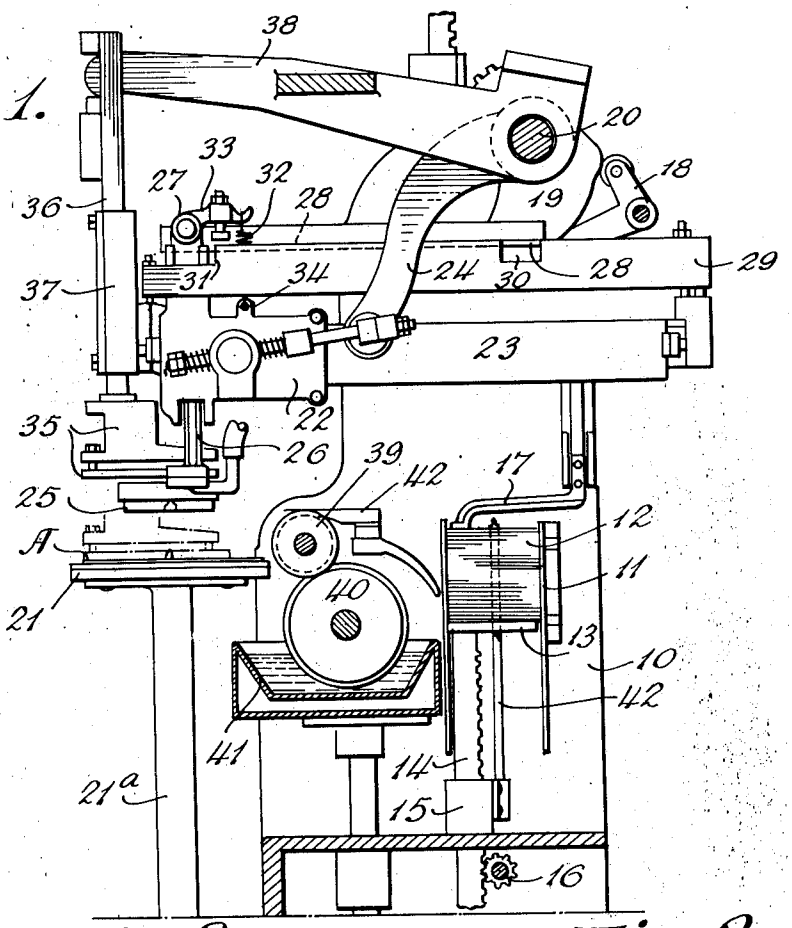


Fig. 3.

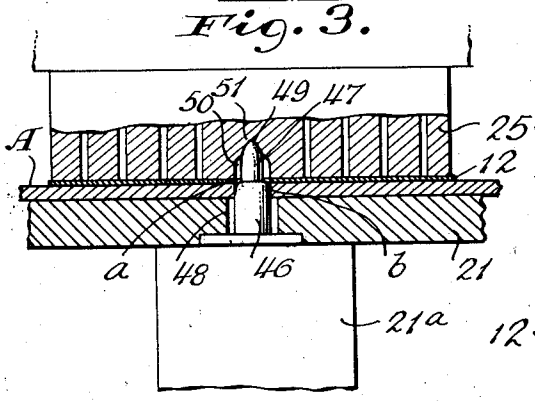
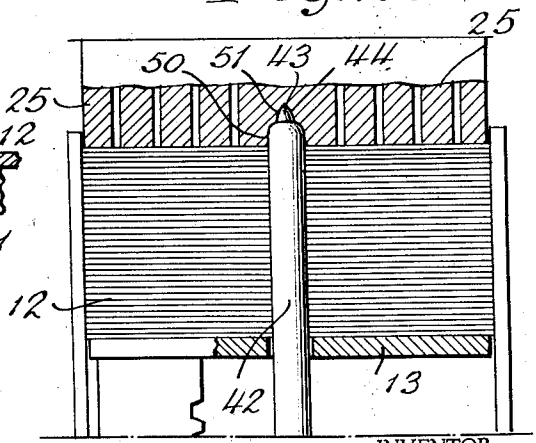


Fig. 2.



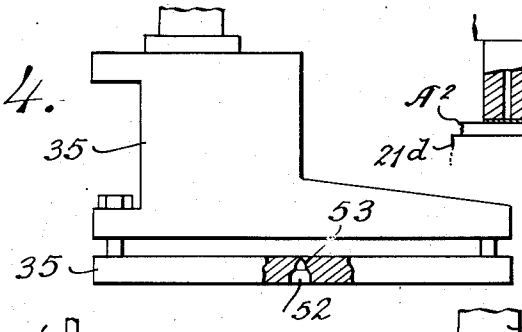
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Oct. 27, 1942. G. W. VON HOFE 2,300,185

REGISTERING MEANS FOR LABELING AND OTHER MACHINES

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Fig. 4.



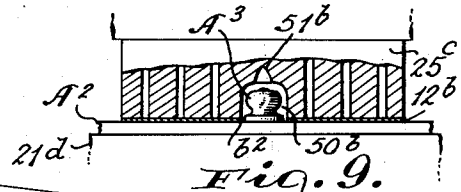


Fig. 9.

Fig. 5.

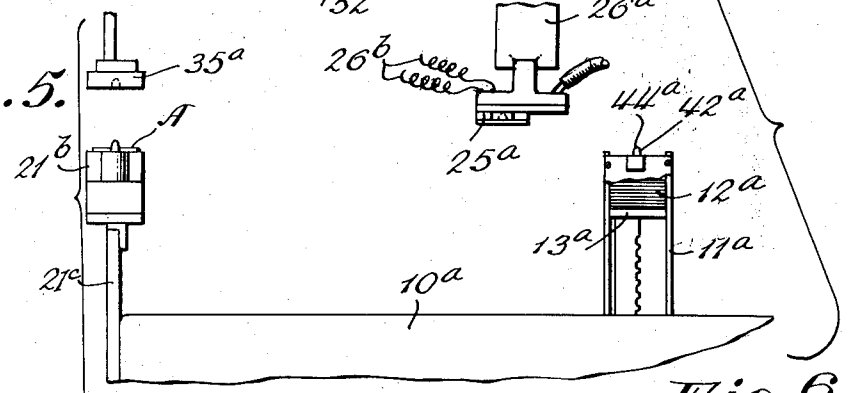
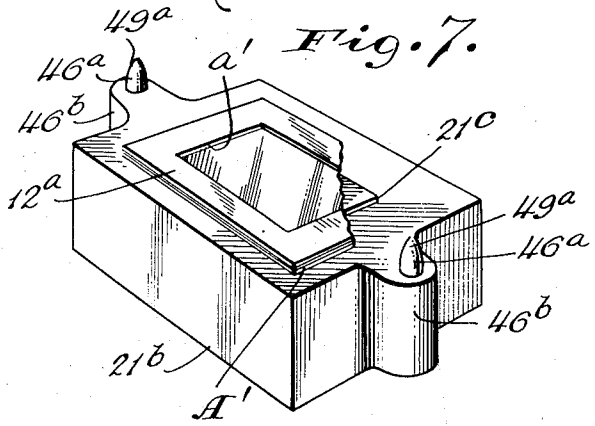


Fig. 6.

Fig. 7.



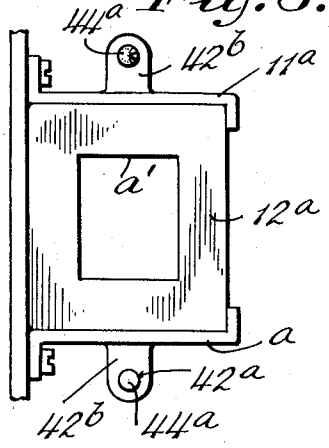
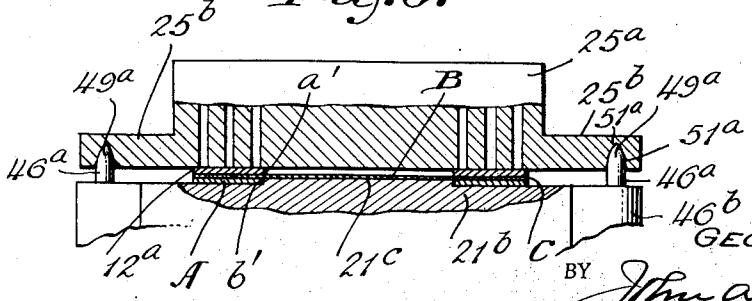


Fig. 8.



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UNITED STATES PATENT OFFICE

2,300,185

REGISTERING MEANS FOR LABELING AND OTHER MACHINES

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Application April 2, 1941, Serial No. 386,425

23 Claims. (Cl. 216—55)

In certain types of labeling it is desirable to apply the labels to the articles with predetermined parts of the labels in registry with predetermined parts of the articles. This is exemplified by the centrally apertured labels which are applied to conventional disk records for phonographs with the central apertures of the labels in registry with the customary central openings of said disk records. This is further exemplified by the labeling of articles having projections on the face to be labeled, as for instance pot covers having upstanding knobs, on which apertured labels are applied over and around the aforesaid projection or knob.

In the art of projecting photographic films on screens and the like, it is the custom to use individual films such as used, for instance, in the so-called candid cameras for this purpose. To facilitate such projection and to enable the films to be handled without difficulty, it is the practice to combine the films with frames, and more particularly frames of cardboard and the like, to provide slides for use in the projection apparatus. Such slides generally consist of two frames of duplicate dimensions and shape with the films mounted between the same in a manner to expose the areas of the films through the openings of the frames. To secure the most efficient results it is necessary to combine the frames with each other so that all parts thereof and particularly the openings of said frames are in accurate registry with each other and with the photographic areas of the films.

The above mentioned type of labeling and the manufacture of the aforesaid projection slides are most advantageously and most economically carried out automatically by means of suitable labeling and other machines.

The object of the invention is to provide such labeling and other machines with novel registering means whereby the desired registration of the elements being combined, as exemplified by the above-mentiond labeling of phonograph disk records and the aforesaid production of projection slides, is automatically brought about in an accurate and simple manner.

Other 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 examples of the invention without defining its limits,

Fig. 1 is a fragmentary sectional elevation of a labeling machine embodying the novel registering means;

Fig. 2 is a fragmentary elevation partly in section on an enlarged scale of the novel registering means at the label pick-up station of the labeling machine;

Fig. 3 is a similar view of the novel registering means at the label applying station of said labeling machine;

Fig. 4 is a detail view of a pressure member included in the labeling machine;

Fig. 5 is a diagrammatic view of another type of machine showing the novel registering means combined therewith;

Fig. 6 is a plan view of the novel registering means located at the pick-up station of the last-mentioned machine;

Fig. 7 is a perspective view of the supporting means at the applying station of the machine and including the novel registering means;

Fig. 8 is a fragmentary elevation partly in section showing the operation of the registering means at said applying station, and

Fig. 9 is a fragmentary detail view illustrating another form of the invention.

The labeling machine per se may be of any conventional type and may be operated in any customary manner, and it is to be understood that the labeling machine illustrated in Fig. 1 of the drawings is intended primarily to disclose the novel registering means and the operation thereof. The illustrated labeling machine, although it is particularly adapted for having said novel registering means embodied therein, nevertheless is not intended to define the scope of the invention.

In its illustrated form, the labeling machine comprises a conventional frame 10 on which a suitable hopper or container 11 arranged to contain a supply stack of labels 12 is supported in any convenient manner at the label pick-up station of the machine. The bottom 13 of the container 11 is vertically adjustable in any customary way, as by a rack 14 guided in a bracket 15 and operated by a pinion 16, for periodically restoring the upper end of the stack of labels 12 to a predetermined level in operative relation to the associated elements of the machine. The elevating mechanism may be controlled in any well-known way as by means of a feeler 17 operated in the intended manner by a bell-crank lever 18 and a cam 19 carried by a rock-shaft 20.

A suitable support or table 21 for the articles A to be labeled is conveniently located at the label applying station of the machine, and as shown in Fig. 1, may be carried by an upright member 21a. The machine further includes label

transporting means whereby individual labels 12 are successively removed from the upper end of the supply stack at the pick-up station and transferred to the label applying station for application to the articles A thereat. As shown, the label transporting means consists of a carriage 22 slidably mounted on a horizontal guide rail 23, and reciprocated thereon by suitable mechanism exemplified by the arm 24 on the rock shaft 19, and associated elements. A suction head 25 is carried by a member 26 which is mounted on the carriage 22 and is vertically slidable thereon to raise and lower the suction head 25 relatively to said carriage 22 during an operative cycle of the machine as will appear more fully hereinafter. Provision is made in any well-known and customary manner for developing and controlling suction in the head 25 in proper timing in said operative cycle of the machine. At its upper end the member 26, in the illustrated machine, is provided upon opposite sides with rollers 27, one of which (not shown) travels along a movable rail 28 and the other of which, as shown in Fig. 1, travels along a fixed rail 29 recessed at spaced points as indicated respectively at 30 and 31. In order to insure efficiency of operation, a spring 32 has its one end connected with an arm 33 of the member 26 and its other end attached to a lug 34 on the carriage 22; the spring 32 exerts a tension tending to force the member 26 and suction head 25 downwardly relatively to the carriage 22. Suitable means is provided for raising and lowering the movable rail 28 to correspondingly raise and lower the member 26 and suction head 25 in the operation of the machine, for instance, as shown in applicant's United States Patent No. 2,227,816 of January 7, 1941.

The machine illustrated in the drawings further includes a pressure member 35 for completing the application of the labels 12 to the articles A. The pressure member 35 is carried by a plunger 36 vertically slidable in a guideway 37 suitably supported in proper position on the frame 10 at the label applying station of the machine. The plunger 36 is vertically reciprocated in the guideway 37 in properly timed relation with the associated elements of the machine by means of a lever 38 loosely mounted on the shaft 20 and having its free end suitably connected with the plunger 36 at the upper end thereof. The lever 38 is operatively rocked on the shaft 20 in any convenient manner for instance as disclosed in Patent No. 2,227,816 previously referred to herein.

In the labeling machine shown in the drawings, the labels 12 picked up successively by the suction head 25 from the supply stack are provided with a coating of adhesive on one surface during the transfer of said labels from the pick-up station to the label applying station of the machine. For this purpose the machine includes adhesive applying means consisting of an adhesive applying roll 39 and an adhesive distributing roll 40 which dips into a supply of adhesive in a conventional container 41, and is located in tangential distributing relation to the roll 39. The rolls 39 and 40 may be operated in any customary manner, suitable take-off members 42 being combined with the roll 39 to prevent the labels 12 from being carried around said roll 39 in the operation of the machine.

For the purpose of illustrating and describing the novel registering means, it will be assumed that the labeling machine shown in Fig. 1 of the drawings is designed for applying conventional circular labels 12 having a central aperture *a*, to conventional phonograph records provided with customary openings *b* at the centers thereof; the phonograph records in such case constitute the articles A being labeled. It is essential both for the sake of appearance and for efficiency in combining the records with conventional phonographs, to apply such labels to the phonograph records A in concentric relation to the central openings thereof with the central apertures of the labels 12 in axial registry with said central openings of said records A. While the aforesaid novel registering means is specially adapted for the above-mentioned type of labeling, it will be obvious that said registering means may be constructed and arranged for efficient use in connection with all classes of labeling in which it is desirable to apply the labels to the articles accurately and uniformly in predetermined relation with predetermined parts of the articles for which the labels are designed. It is accordingly to be understood that the specific illustration of the registering means in association with the labeling machine shown in Fig. 1 of the drawings, and the following description are not intended to arbitrarily define the limits thereof.

The novel registering means in its essentials comprises a device located at the label pick-up station in predetermined relation to the terminal label in the supply of labels thereat, and another device located at the applying station in co-operating predetermined relation to the articles supported thereat, and means on the label transporting means arranged to co-operate with said devices at the respective stations to position the pick-up label on the transporting means and subsequently to position the label on the article in the application of said label thereto.

In its illustrated form the registering means at the label pick-up station comprises a registering member or rod 42 which projects upwardly through the central openings of the labels 12 in the supply stack thereof and terminates at its upper end in a reduced section 43, the free end of which is shaped to develop a centering or other camming action as by being tapered for instance as indicated at 44. The member 42 may be supported in place in any convenient manner so that its upper end section 43 and the camming end 44 thereof are located in proper relation to the terminal label 12 at the upper end of the supply stack as illustrated in Figs. 1 and 2. The member 42 preferably is adjustably mounted in any suitable way as by being clamped upon the guide bracket 15 by means of a releasable clamp 45 as shown in Fig. 1.

A similar registering member or rod 46 is fixed upon the upright member 21^a and is formed with a corresponding reduced section 47 at its upper end which projects upwardly through an opening 48 in the support or table 21 and likewise has its free end shaped to develop a camming action as by being tapered as indicated at 49. The reduced section 47 is of an axial length to position the tapering free end 49 thereof at a predetermined distance above the support or table 21 so as to occupy a position in predetermined relation to a record A when the latter is in label receiving position on said support or table 21, as shown in Figs. 1 and 3.

It will be understood that the reduced sections 43 and 47 and the camming ends 44 and 49 thereof are duplicates of each other in dimensions and

shape so as to develop identical camming actions during operative periods of the machine.

The label transporting means or specifically in the illustrated example the suction head 25 is provided in its active face with a recess 50 terminating at its inner end in a camming seat 51 dimentioned and shaped to accurately fit the camming ends 44 and 49 of the respective rods 42 and 46. The outer diameter of the registering member 42 preferably corresponds to the diameter of the central aperture of the labels 12 so as to fit the same, and the diameter of the recess 50 of the suction head 25 preferably also is such as to fit the member 42 as illustrated in Fig. 2. The depth of the recess 50 and its seat 51 is such as to enable the active face of the suction head 25 to properly co-operate with the terminal label 12 in the act of removing the same from the upper end of the supply stack of labels 12 at the pick-up station, and to properly deposit said label 12 on the record A at the applying station. The pressure member 35 is likewise designed for proper co-operation with the registering member 46 and its tapered or equivalent camming end 49 in the development of pressure on the deposited label 12 to complete the application thereof to the record A or other article at the applying station. For this purpose the pressure member 35 may be provided with a recess 52 and seat 53 similar respectively to the recess 50 and seat 51 of the suction head 25 or said pressure member may simply include an opening for the accommodation of the reduced end 47 of the rod 46.

In practice the carriage 22 is reciprocated on the rail 23 to cause the suction head 25 to travel between the pick-up station and the label applying station and vice versa. The arrangement is such that the carriage 22 and suction head 25 are temporarily at rest at the pick-up station and the applying station.

During the aforesaid reciprocation of the parts, the rollers 27 travel along the movable rail 28 and the fixed rail 29, it being understood that at the pick-up and applying stations, the roller 27 which traverses the fixed rail 29 is in registry respectively with the recesses 30 and 31 thereof.

During the period of rest at the pick-up station, the movable rail 28 is lowered, for instance, as shown and described in applicant's Patent No. 2,227,816 previously mentioned herein, to bring the active face of the suction head 25 into contact or corresponding receiving relation with the terminal label 12 of the supply stack; during such downward movement the one roller 27 enters the recess 30 of the fixed rail 29 and thus does not interfere with the operations described.

As the suction head 25 thus descends, the reduced section 43 of the rod 42 will pass into the recess 50 of the suction head 25 and the camming end 44 of said section 43 will finally enter the camming seat 51 of said recess 50 as shown in Fig. 2. As this occurs the camming seat 51 in co-operation with the camming end 50 will definitely and accurately position the suction head 25 in proper pick-up relation with the terminal label 12 of the supply stack. The mounting of the suction head 25 on the carriage 22 is such that said head 25 is capable of yielding and other relative movements sufficient to enable said head 25 to accommodate itself to the camming action of the camming seat 51 and camming end 50. At the proper moment suction is developed in the suction head 25 and the terminal label 12 is removed from the supply stack and temporarily fixed in place on the active face of said suction head 25. Because of the fact that the labels 12 in the supply stack are held in place therein by the registering member 42 and because of the setting of said suction head 25 as explained above, the picked up label 12 occupies a definite position on the active face of the suction head 25 in predetermined relation to the recess 50 thereof.

After the terminal label 12 has been picked up by the suction head 25, the movable rail 28 is elevated to raise the suction head 25 on the carriage 22, and the latter is shifted along the rail 23 to the label applying station. In the travel toward the latter station the label 12 on the suction head 25 contacts with the adhesive applying roll 39 and receives a coating of adhesive therefrom.

At the label applying station the suction head 25 with the adhesive coated label 12 thereon is lowered on the carriage 22 as at the pick-up station and deposits said label 12 on the record A or equivalent article in adhesive contact therewith. As the suction head 25 is thus lowered, the one roller 27 will enter the recess 31 of the fixed rail 29, and the reduced section 47 of the rod 46 will extend into the recess 50 of said suction head 25. The camming end 49 of the section 47 will finally enter the camming seat 51 and in co-operation therewith will set the suction head 25 and the label 12 carried thereby in accurate label applying relation with the record A or its equivalent. In the illustrated example this means that the label 12 is deposited upon the record A in concentric relation to the central opening thereof and with the central opening of the record A and the central aperture of the label 12 accurately in registry with each other.

At the proper moment the suction in the suction head 25 is discontinued and the latter is raised leaving the label 12 in adhesive connection with the record A. The carriage 22 is then moved in a return direction to carry the suction head 25 back to the pick-up station after which the operative steps set forth above are repeated. In proper timing with the operative steps preceding the same, the pressure member 35 is shifted downwardly to apply pressure to the previously deposited label 12 whereby the application of said label 12 to the record A is completed. During the pressing of the label 12 the reduced section 47 of the rod 46 and the camming end 49 project through the opening thereof or into the recess 52 and camming seat 53 of the pressure member 35 so as to register the latter with the previously deposited label and so as not to interfere with the completion of the application of said label 12 to the article A and so as not to disturb the position of said label 12 thereon.

In the form shown in Figs. 5 to 8 inclusive, the machine may be of essentially the same construction and operation as the labeling machine of Fig. 1 with the exception of differences in detail incidental to the particular functions of the machine illustrated diagrammatically in Fig. 5. For purposes of disclosure and description the latter machine is shown in the drawings and described hereinafter in a form designed primarily for the production of slides whereby individual photographic films are mounted in associated projection devices whereby the photographic areas of said films may be projected on a screen or the like.

Such slides, in their illustrated form, comprise a base frame A' and a sealing frame 12a

both of predetermined dimensions and shape and having respectively a central opening *b'* and a central aperture *a'* with the film B mounted and fixed in place between said frames A' and 12a. In the example shown in Figs. 5 to 8, the latter are of rectangular form and of the same dimensions with central openings *b'* and the central aperture *a'* also of rectangular shape and of the same dimensions. The sealing frame 12a is fastened to the base frame A' in any convenient manner as by means of thermoplastic adhesive *c* to clamp the film B in place between said frames.

In its illustrated form, the machine shown diagrammatically in Fig. 5 may, as in the first form, comprise a conventional frame 10a on which a suitable hopper or container 11a arranged to contain a supply stack of sealing frames 12a is supported in any convenient manner at the frame pick-up station of the machine. The bottom 13a of the container 11a is vertically adjustable as in the form first described, for periodically restoring the upper end of the stack of sealing frames 12a to a predetermined level in operative relation to the associated elements of the machine. The elevating mechanism may be controlled in any well-known way for instance as shown in Fig. 1.

A suitable support or table 21b for the base frames A' is conveniently located at the applying station of the machine and, as shown in Fig. 5, may be carried by an upright member 21c. The machine further includes transporting means whereby individual sealing frames 12a are successively removed from the upper end of the supply stack at the pick-up station and transferred to the applying station for application to the base frames A' thereat. The transporting means may be constructed and operated in the same way as shown in Fig. 1 and likewise may include a suction head 25a carried by a member 26a which may be mounted on a carriage and vertically slidable thereon to raise and lower the suction 25a during an operative cycle of the machine in the same way as in Fig. 1.

The machine illustrated diagrammatically in Fig. 5 may further include a pressure member 35a for completing the application of the sealing frames 12a to the articles or base frames A'. The pressure member 35a may be arranged and operated as in Fig. 1.

For the purpose of illustrating and describing the registering means in another embodiment, it will be assumed that the machine shown diagrammatically in Fig. 5 of the drawings is designed for combining the sealing frames 12a with the base frames A' in the production of the projection slides mentioned hereinbefore. The base frames A' in such case correspond to the articles A being labeled in Fig. 1, and the sealing frames 12a correspond to the labels 12 thereof. It is essential both for the sake of appearance and for efficiency to combine the sealing frames 12a with the base frames A' in accurate registry therewith and so that the openings *b'* and apertures *a'* thereof are also in exact registry with each other and with the photographic area of the film B. Obviously the novel registering means may be constructed and arranged for efficient use in connection with other classes of production in which it is desirable to combine different elements with each other in accurate and uniform predetermined relation with each other. It is accordingly to be understood that the specific illustration of the aforesaid alternative embodiment of the invention shown in Figs. 5 to 8 inclusive of the drawings and the following description are not intended to arbitrarily define the limits thereof.

The novel registering means in the form now under discussion, as in the first form, comprises means located at the pick-up station in predetermined relation to the terminal sealing frame 12a in the supply stack of frames thereat, and another means located at the applying station in co-operating predetermined relation to the articles or base frames A' supported thereat, and means on the label transporting means arranged to co-operate with said registering means at the respective stations to position the picked up frame 12a on the transporting means and subsequently to position said frame 12a accurately on the base frame A' in the application of said sealing frame 12a thereto.

In its illustrated form the positioning device at the label pick-up station comprises registering members 42a which project upwardly from lugs 42b extending outwardly from the opposite walls of the hopper or container 11a in which the supply stack of sealing frames 12a is slidably fitted so that the upper terminal frame 12a of the stack always occupies a definite, fixed position. The registering members 42a terminate in camming ends 44a of suitable type which are located in proper relation to the terminal frame 12a at the upper end of the supply stack, as illustrated in Figs. 5 and 6, upon opposite sides thereof.

At the applying station, the support or table 21b is provided on its upper surface with a raised rib or projection 21c of rectangular form and dimensioned to fit within the central opening *b'* of the base frames A' with sufficient snugness in a definite, fixed position on said support 21b. The rib or projection 21c is dimensioned and arranged so that its upper surface lies flush with the upper face of the particular base frame A' in place thereon.

In addition, the above registering members 46a project upwardly from lugs 46b at opposite sides of the support 21b and are formed with camming ends 49a similar to the camming ends 44a of the registering members 42a. The arrangement is such that the camming ends 49a of the members 46a are located at a predetermined distance above the support or table 21a and are spaced apart in exact accordance with the spacing of the camming ends 44a of the members 42a so as to occupy positions in predetermined relation to a base frame A' when the latter is in position on said support or table 21a as shown in Figs. 5 and 6.

In other words, the camming ends 44a and 49a of the respective members 42a and 46a are duplicates of each other in dimensions and shape and are located in corresponding relation respectively to the uppermost sealing frame 12a of the supply stack and the base frame A' or the support 21b so as to develop identical camming actions during operative periods of the machine.

The label transporting means or specifically in the illustrated example the suction head 25a includes opposite extending lugs 25b preferably lying flush with its active face and each provided with a recess 50a terminating at its inner end in a camming seat 51a dimensioned and shaped to accurately fit the camming ends 44a and 49a of the respective registering members 42a and 46a. The recesses 50a and the camming seats 51a are spaced apart in accurate accordance with the spacing of camming ends 44a of

the members 42ª and the camming ends 49ª of the members 46ª, and the depth of the recesses 50ª and seats 51ª is such as to enable the active face of the suction head 25ª to properly co-operate with the terminal sealing frame 12ª in the act of removing the same from the upper end of the supply stack thereof at the pick-up station, and to properly deposit said sealing frame 12ª on the base frame A' in accurate registry therewith at the applying station. The pressure member 35ª is likewise designed for proper co-operation with the registering members 46ª and the tapered or equivalent camming end 49ª thereof in the development of pressure on the deposited frame 12ª to complete the application thereof to the base frame A' at the applying station. For this purpose the pressure member 35ª may be provided with recesses and camming seats similar to the recesses 50ª and seats 51ª of the suction head 25ª or said pressure member 35ª may include a simple opening for the accommodation of the camming ends 49ª of the registering members 46ª.

In practice the parts of the machine are operated in the same way as in Fig. 1 to cause the suction head 25ª to travel between the pick-up station and the applying station and vice versa. As in the first form the arrangement is such that the suction head 25ª is temporarily at rest at the pick-up station and at the applying station.

During the period of rest at the pick-up station the suction head 25ª is lowered into contact or corresponding receiving relation with the terminal sealing frame 12ª of the supply stack.

As the suction head 25ª thus descends, the camming ends 44ª of the registering members 42ª will pass into the recesses 50ª of said suction head 25ª and will finally enter the camming seats 51ª of said recesses 50ª. As this occurs, the camming seats 51ª in co-operation with the camming ends 50ª will definitely and accurately position the suction head 25ª in proper pick-up relation with the terminal sealing frame 12ª of the supply stack. In this instance also the mounting of the suction head 25ª on its carriage is such that said head 25ª is capable of yielding and other relative movements sufficient to enable said head 25ª to accommodate itself to the camming action of the camming seats 51ª and the camming ends 50ª. At the proper moment suction is developed in the suction head 25ª and the terminal sealing frame 12ª is removed from the supply stack and temporarily fixed in place on the active face of the suction head 25ª. Because of the fact that the sealing frames 12ª in the supply stack are definitely held in place therein by the container 11ª, and because of the registering setting of said suction head 25ª as explained above, the pick-up frame 12ª occupies a definite position on the active face of the suction head 25ª in predetermined relation to the recesses 50ª thereof. After the terminal frame 12ª has been picked up by the suction head 25ª, the latter is operated to carry said frame 12ª to the applying station. At the latter, the suction head 25ª with the sealing frame 12ª thereon is lowered and deposits the latter on the base frame A' and film B. It will be understood that at an appropriate point in the operations the base frame A' has been deposited upon the rib or projection 21ᶜ and that the film B has been set in proper place upon the base frame A', after which a coating of adhesive *c*, preferably thermoplastic adhesive, has been deposited upon said base frame A' so as to surround the perimeter of the film B.

As the suction head 25ª is lowered to deposit the sealing frame 12ª carried thereby on the base frame A', the camming ends 49ª of the registering members 46ª will enter the camming seats 51ª and in co-operation therewith will set the suction head 25ª in such a manner that the sealing frame 12ª will be combined with the base frame A' in accurate registry therewith. In the illustrated example this means that the sealing frame 12ª is deposited upon the base frame A' with the openings of both frames in accurate registry with each other and with the photographic area of the film B and preferably with both frames otherwise in accurate registration with each other.

At the proper moment suction in the suction head 25ª is discontinued and the latter is raised, leaving the sealing frame 12ª in adhesive connection with the base frame A'. The parts are then operated to carry the suction head 25ª back to the pick-up station and to repeat the operative steps set forth above. In proper timing with he operative steps preceding the same, the pressure member 35ª is shifted downwardly to apply pressure to the previously deposited sealing frame 12ª whereby the application thereof to the base frame A' is completed. During this pressing operation the registering members 46ª and their camming ends in co-operation with the recess and camming seat or alternatively the aperture of the pressing head 35ª control the latter in a manner to develop the pressure on the parts in the most efficient manner. It will be understood when the slides for which the machine of Fig. 5 is specially designed comprise the two frames A' and 12ª with the film B mounted between the same, that the thermoplastic adhesive *c* which is applied to the frame A' and surrounds the film B acts as a ridge or flange to properly position this film B. When thermoplastic adhesive *c* is used for combining the frames, it is advisable to heat the suction head 25ª in any suitable manner for instance, electrically as indicated by the wires 25ᵇ in Fig. 5.

In Fig. 9, I have illustrated a fragmentary detail view of another form of the invention designed primarily for applying apertured labels to articles provided with projections in which the labels surround the projection with the latter projecting through the aperture of the label. The detail illustration shows the parts at the applying station of the machine at the label applying stage thereof.

In the form under discussion, the machine, generally speaking, may be constructed and operate in the same way as illustrated in Fig. 1, and includes a suction head 25ᶜ provided in its active label supporting face with a recess 50ᵇ terminating, for instance, at its inner end in a camming seat 51 both similar to the recesses and camming seats of the forms previously described. The labels 12ᵇ are arranged in the form of a stack at the pick-up station with the registering means comprising a registering member or rod similar to the rod 42 of Fig. 1 and likewise projecting upwardly through the central openings of the labels 12ᵇ in the supply stack thereof. The registering member or rod of the instant form of the invention also terminates at its upper end in a camming section corresponding to the camming end 44 of the registering member or rod 42 of the first form and correspondingly arranged or located.

To illustrate the operation of this form of the

invention, it will be assumed that labels 12b provided with a central aperture b^2 is to be applied to a pot cover A^2 having an upstanding knob or handle A^3 projecting upwardly from the surface thereof. The label 12b is applied to the pot cover A^2 which constitutes the article to be labeled in such a manner that the knob A^3 projects upwardly through the aperture b^2 of the label 12b or in other words, so that the latter surrounds the projection or knob A^3.

In the operation of the machine now being described, the suction head 26c is lowered at the pick-up station into contact with the terminal label 12b at the upper end of the supply stack to pick up said terminal label and convey it to the applying station for application to the pot cover or other article A^2. As the suction head 25c is lowered at the pick-up station, the camming end of the registering member or rod will pass upwardly into the recess 50b and into the camming seat 51b thereof. The co-operative action of this camming seat 51b and the camming end of the registering member or rod will bring the suction head 25c into predetermined registry with the terminal label 12b so that the aperture b^2 of the latter will register with the recess 50b of said suction head 25c. It will be understood that the recess 50b of the suction head 25c conforms to the dimensions and preferably the shape of the aperture b^2 of the label 12b. The picked up label 12b supported on the active face of the suction head 25c is carried to the applying station at which the suction head is lowered into contact with the pot cover A^2, or other article, in such relation thereto that the knob A^3 or other projection projects through the aperture b^2 of the label 12b and projects into the recess 50b of the suction head 25c. The operation from this stage forward may be the same as previously described to complete the application of the label 12b to the article A^2.

It will be understood that with this arrangement suitable provision is made to accurately locate and fix the pot cover A^2 or equivalent article on the supporting table 21d which may correspond to the supporting tube 21 of Fig. 1.

If desired, the suction head 25c may be constructed as shown in Fig. 8 and arranged to cooperate with registering means of the type shown in Figs. 5 to 8 inclusive. In such case the recess indicated as 50b is provided in the suction head 25c simply for the purpose of accommodating the knob A^3 or other projection on the article to which the labels 12b are to be applied.

With the arrangements illustrated and described herein, the parts of the mechanisms of the machines are definitely controlled first to pick up each label or each sealing frame in a manner to accurately position the same on the transporting means, and second to apply each label or each sealing frame respectively to the article A, A', or A^2, in predetermined accurate relation to an inherent feature thereof or in predetermined registration therewith.

The novel registration means is simple in construction and uniformly accurate and efficient in action, and requires no particularly skilled supervision. In addition, the aforesaid registering means may be readily installed in existing machines and in all instances functions automatically with maximum efficiency.

Although the present invention has been described in conjunction with specific embodiments, it is to be understood that modifications and variations may be resorted to without departing from the spirit and scope of the invention, as those skilled in the art will readily understand. Such variations and modifications are considered to be within the purview and scope of the claims.

I claim:

1. In a machine of the kind described including a pick-up station and an applying station, the combination of a container for a supply stack of elements at said pick-up station, registering means permanently located at said pick-up station in predetermined relation to the terminal element in said supply stack, transporting means for removing said terminal element from said stack and depositing it on an element at said applying station, and means on said transporting means co-operating with said registering means by engagement therewith to predetermine the position of said transporting means relatively to said terminal element and thereby predetermine the position of the removed element on said transporting means.

2. In a machine of the kind described including a pick-up station and an applying station, the combination of a container for a supply stack of elements at said pick-up station, registering means located at said applying station for positioning an associate element thereat, applying means for depositing an element from said supply stack on said associate element, and means on said applying means co-operating with said registering means by temporary engagement therewith during deposit of said element to predetermine the position of said applying means relatively to said associate element and thereby predetermine the position of the deposited element on said associate element.

3. In a machine of the kind described having a pick-up station and an applying station, registering means located in predetermined position at said pick-up station, a pick-up device for removing an element from said pick-up station and for depositing said element on an associate element at said applying station, positioning means on said pick-up device co-operating with said registering means by engagement therewith to automatically adjust the position of the pick-up device relatively to the element to be removed to thereby predetermine the position of the pick-up device, the position of the removed element on said pick-up device, and a second registering means located in predetermined position at said applying station, said second registering means co-operating with the positioning means of said pick-up device by engagement therewith to predetermine the deposit position of said picked up element on said associate element.

4. In a machine of the kind described including a pick-up station and an applying station, the combination of a container for a supply stack of elements at said pick-up station, registering means located at said applying station in predetermined position relatively to an associate element thereat, applying means for depositing an element from said pick-up station on said associate element, means on said applying means co-operating with said registering means by engagement therewith coincidentally with said deposit to predetermine the position of the deposited element on said associate element, a pressure member for pressing the deposited element on said associate element to complete the application thereof, and means on said pressure member co-operating with said registering means to avoid

interference with the pressing action of said pressure member.

5. In a labeling machine including a label pick-up station and a label applying station, the combination of a container for a supply stack of labels having central apertures, an upright rod extending lengthwise of said container and through the central apertures of said supply stack of labels, a camming section at the upper end of said rod projecting beyond the terminal label at the upper end of said stack, a support at said label applying station for supporting a phonograph disk record having a central opening in label receiving position, a second upright rod at said label applying station projecting into the central opening of said disk record, a camming section at the upper end of said second rod projecting beyond said phonograph disk record, a suction head movable between said pick-up station and said applying station and vise versa and operable at said stations to pick up a terminal label from said stack and for depositing the picked up label on said disk record, said suction head having a camming seat cooperating with the camming sections of the respective rods to predetermine the position of the picked up label on said suction head and to apply said label to said record with the aperture of the label in accurate registry with the opening of the record.

6. In a labeling machine including a label pick-up station and a label applying station, the combination of a container for a supply stack of labels at said label pick-up station, a support at said label applying station for supporting articles in label receiving position thereat, corresponding registering means located respectively at said pick-up station for positioning the terminal label in said supply stack, and at said label applying station for positioning said articles thereat, camming devices on said respective registering means, a suction head for picking up said terminal label from said supply stack and for depositing the picked up label on the article at said applying station, and camming means on said suction head co-operating with the camming devices of the respective registering means to predetermine the position of the picked-up label on the suction head and the deposited position of said label on said article.

7. In a labeling machine including a label pick-up station and a label applying station, the combination of a container for a supply stack of labels at said label pick-up station, registering means at said pick-up station for positioning the terminal label in said supply stack, transporting means for removing said terminal label from said stack and depositing it on an article at said applying station, and means on said transporting means co-operating with said registering means to predetermine the position of the removed label on said transporting means.

8. In a labeling machine including a label pick-up station and a label applying station, the combination of a container for a supply stack of labels at said label pick-up station, registering means located at said label applying station for positioning an article to be labeled thereat, label applying means for depositing a label on said article, and means on said label applying means co-operating with said registering means by temporary engagement therewith during deposit of said label whereby said label applying means is automatically adjusted to predetermine the position of the deposited label on said article.

9. In a labeling machine having a label supply station and a label applying station, registering means located at said supply station for registering a label in a predetermined position at said supply station, a pick-up device for removing said label from said supply station and for depositing said label on an article at said label applying station, positioning means on said pick-up device co-operating with said registering means by engagement therewith to predetermine the position of the removed label on said pick-up device, and a second registering means located at said applying station for registering the article in a predetermined position at said applying station, said second registering means co-operating with the positioning means of said pick-up device by engagement therewith to predetermine the deposit position of said label on said article.

10. In a labeling machine including a label pick-up station and a label applying station, the combination of a container for a supply stack of labels at said label pick-up station, registering means located at said label applying station for positioning an article to be labeled thereat, label applying means for depositing a label on said article, means on said label applying means co-operating with said registering means by engagement therewith to predetermine the position of the deposited label on said article, a pressure member for pressing the deposited label on said article to complete the application thereof, and means on said pressure member co-operating with said registering means to avoid interference with the pressing action of said pressure member.

11. In a machine of the kind described including a pick-up station and an applying station, the combination of a container for a supply stack of sealing frames having central apertures, upright registering members at said pick-up station, camming sections at the upper ends of said registering members in predetermined relation to the terminal frame at the upper end of said stack, a support at said applying station for supporting a base frame having a central opening in receiving position, upright registering members at said applying station in predetermined relation to the central opening of said base frame, camming sections at the upper ends of said second registering members, a suction head movable between said pick-up station and said applying station and vice versa and operable at said stations to pick up a terminal sealing frame from said stack and for depositing the picked up sealing frame on said base frame, said suction head having a camming seat co-operating with the camming sections of the respective registering members to predetermine the position of the picked up sealing frame on said suction head and to apply said sealing frame to said base frame with the aperture of the sealing frame in accurate registry with the opening of the base frame.

12. In a machine of the kind described including a pick-up station and an applying station, the combination of a container for a supply stack of sealing frames at said pick-up station, a support at said applying station for supporting base frames in receiving position thereat, corresponding registering means located at said pick-up station in predetermined relation to the terminal seating frame in said supply stack, and at said applying station in corresponding predetermined relation to the base frame thereat, camming devices on said respective registering means, a suction head for picking up said terminal sealing frame from said supply stack and for depositing the picked up sealing frame on the base frame at

said applying station, and camming means on said suction head co-operating with the camming devices of the respective registering means to predetermine the position of the picked up sealing frame on the suction head and the deposited position of said sealing frame on said base frame.

13. In a machine of the kind described including a pick-up station and an applying station, the combination of a container for a supply stack of sealing frames at said pick-up station, registering means located at said pick-up station in predetermined relation to the terminal sealing frame in said supply stack, transporting means for removing said terminal sealing frame from said stack and depositing it on a base frame at said applying station, and means on said transporting means co-operating with said registering means by engagement therewith to predetermine the position of the removed sealing frame on said transporting means.

14. In a machine of the kind described including a pick-up station and an applying station, the combination of a container for a supply stack of sealing frames at said pick-up station, positioning means located at said applying station for positioning a base frame thereat, registering means located at said applying station in predetermined fixed relation to said positioning means, applying means for depositing a sealing frame on said base frame, and means on said applying means co-operating with said registering means by engagement therewith to predetermine the position of the deposited sealing frame on said base frame.

15. In a machine of the kind described having a supply station and an applying station, registering means located in predetermined position at said supply station, a pick-up device for removing a sealing frame from said supply station and for depositing said sealing frame on a base frame at said applying station, positioning means on said pick-up device co-operating with said registering means by engagement therewith to predetermine the position of the removed sealing frame on said pick-up device, and a second registering means located in predetermined relation to the base frame at said applying station, said second registering means co-operating with the positioning means of said pick-up device by engagement therewith to predetermine the deposit position of said sealing frame on said base frame.

16. In a machine including a pick-up station and an applying station, the combination of a container for a supply stack of sealing frames at said pick-up station, registering means located at said applying station in predetermined relation to a base frame thereat, applying means for depositing a sealing frame on said base frame, means on said applying means co-operating with said registering means by engagement therewith to predetermine the position of the deposited sealing frame on said base frame, a pressure member for pressing the deposited sealing frame on said base frame to complete the application thereof, and means on said pressure member co-operating with said registering means to avoid interference with the pressing action of said pressure member.

17. In a machine including a pick-up station and an applying station, the combination of a container for a supply stack of sealing frames at said pick-up station, a support at said applying station, a raised projection on said support arranged to fit into a base frame to position the latter on said support, said base frame supporting a photographic film and having an application of thermoplastic adhesive surrounding the same, registering means at each of said stations, heated means for removing a sealing frame from said supply stack and depositing it on the base frame, and means on said heated means co-operating with said registering means to predetermine the position of the removed sealing frame on said heated means and the deposit position on said base frame.

18. In a labeling machine, the combination of a registering device, and a suction head having an active label supporting face provided with a recess adapted to co-operate with said registering device.

19. In a labeling machine for applying labels each having a substantial hole therein, a suction head having an active face adapted to support said labels and provided with a recess arranged to register with the hole of a supported label and conforming to the dimensions of said hole.

20. In a labeling machine for applying apertured labels to articles having projections, a suction head having a recess in the label supporting face thereof for accommodating a projection of an article passing through the aperture of a label carried on said label supporting face.

21. In a machine of the kind described having a pick-up station and an applying station, a suction head, registering means located at said pick-up station, and registering means located at said applying station, said registering means at both stations co-operating with said suction head by engagement therewith to effect predetermined registration thereat.

22. In a machine of the kind described having a pick-up station and an applying station, a suction head for carrying apertured labels from the pick-up station to the applying station, registering means located at said pick-up station, and registering means located at said applying station, said registering means at said pick-up station passing through the aperture of a label to position the same thereat and both registering means co-operating with said suction head by engagement therewith at the respective stations to effect predetermined registration of said carried label at both stations.

23. In a labeling machine, the combination of means for supporting a label in position for removal, registering means associated with said first-named means as a part thereof for predetermining the removal position of said label on said first-named means, a suction head for picking up and removing said label from said first-named means, and means on said suction head co-operating with said registering means by engagement therewith to predetermine the removal position of said suction head relatively to the label to be removed and thereby predetermine the position of the removed label on said suction head.

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