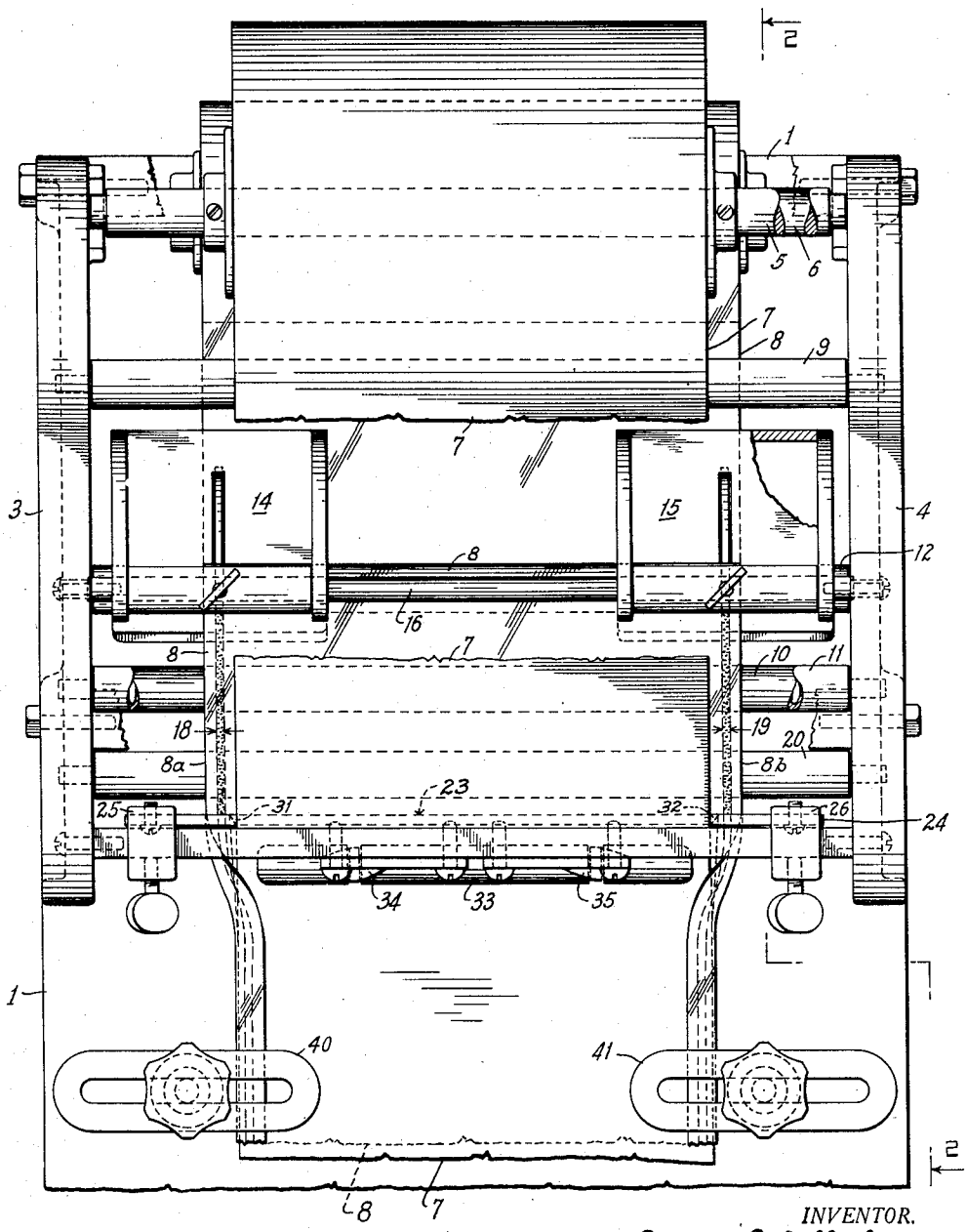
Dec. 20, 1938. L. L. SALFISBERG 2,140,599

ENVELOPE FORMING MACHINE

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Fig. 1



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ENVELOPE FORMING MACHINE

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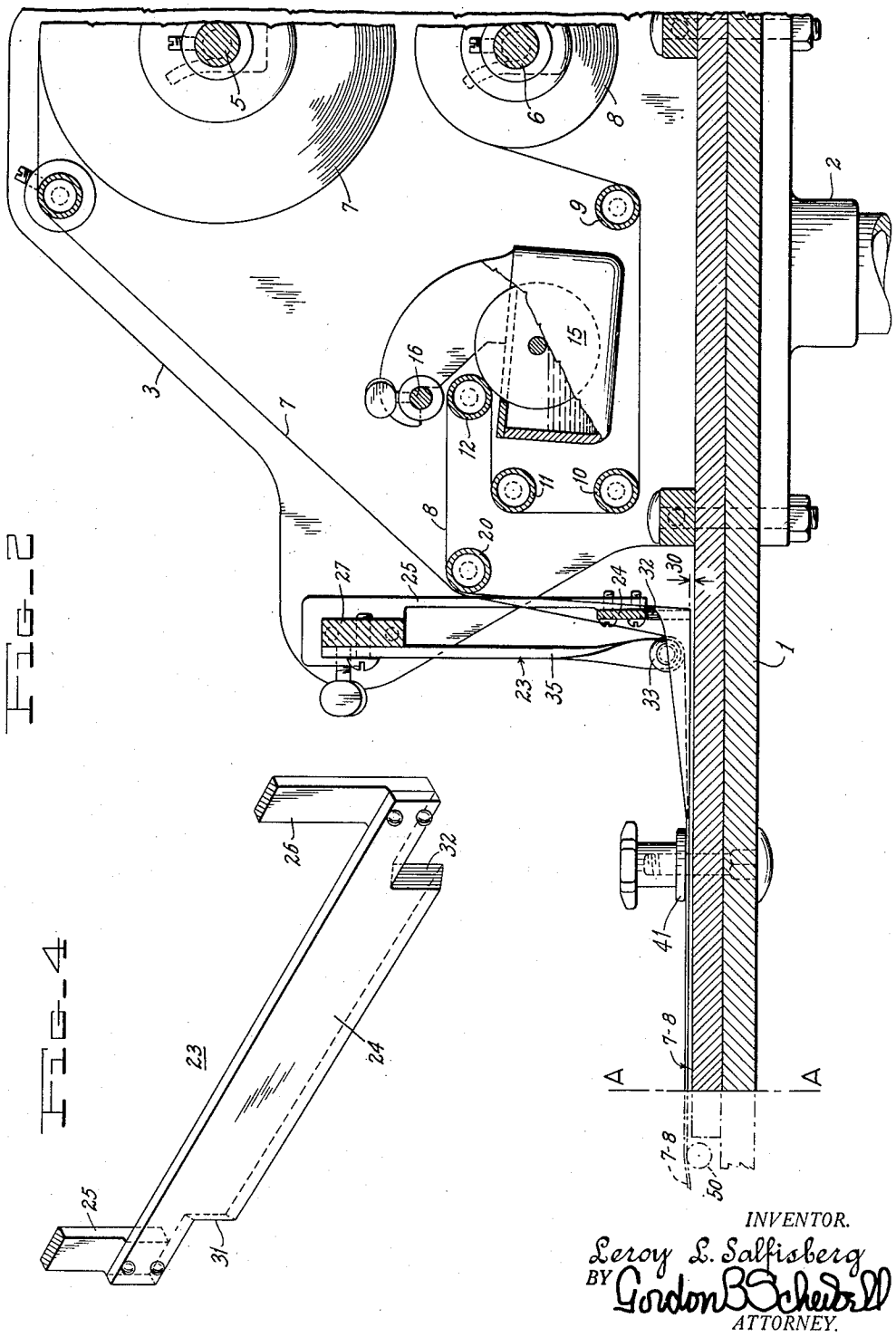


Fig-2

Fig-4

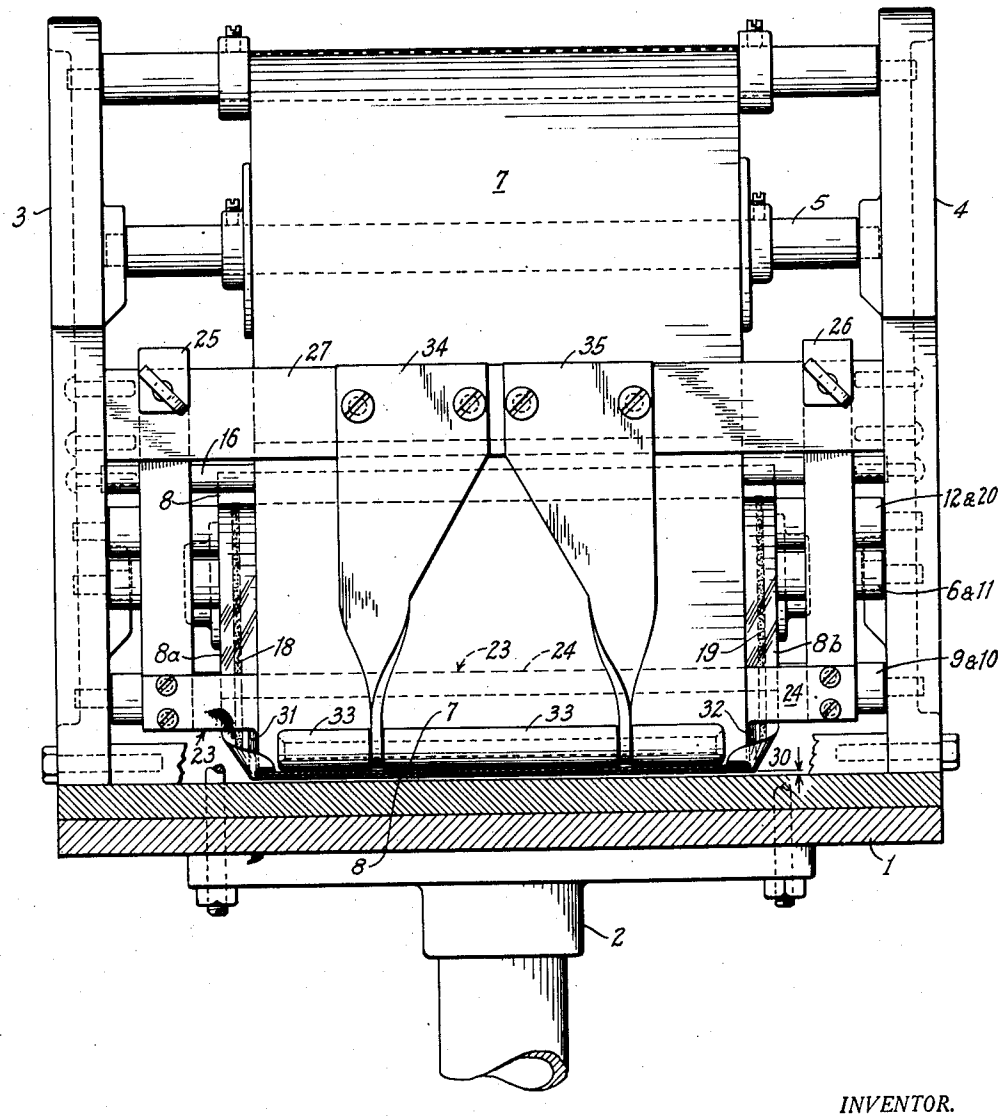
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ENVELOPE FORMING MACHINE

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Fig. 3

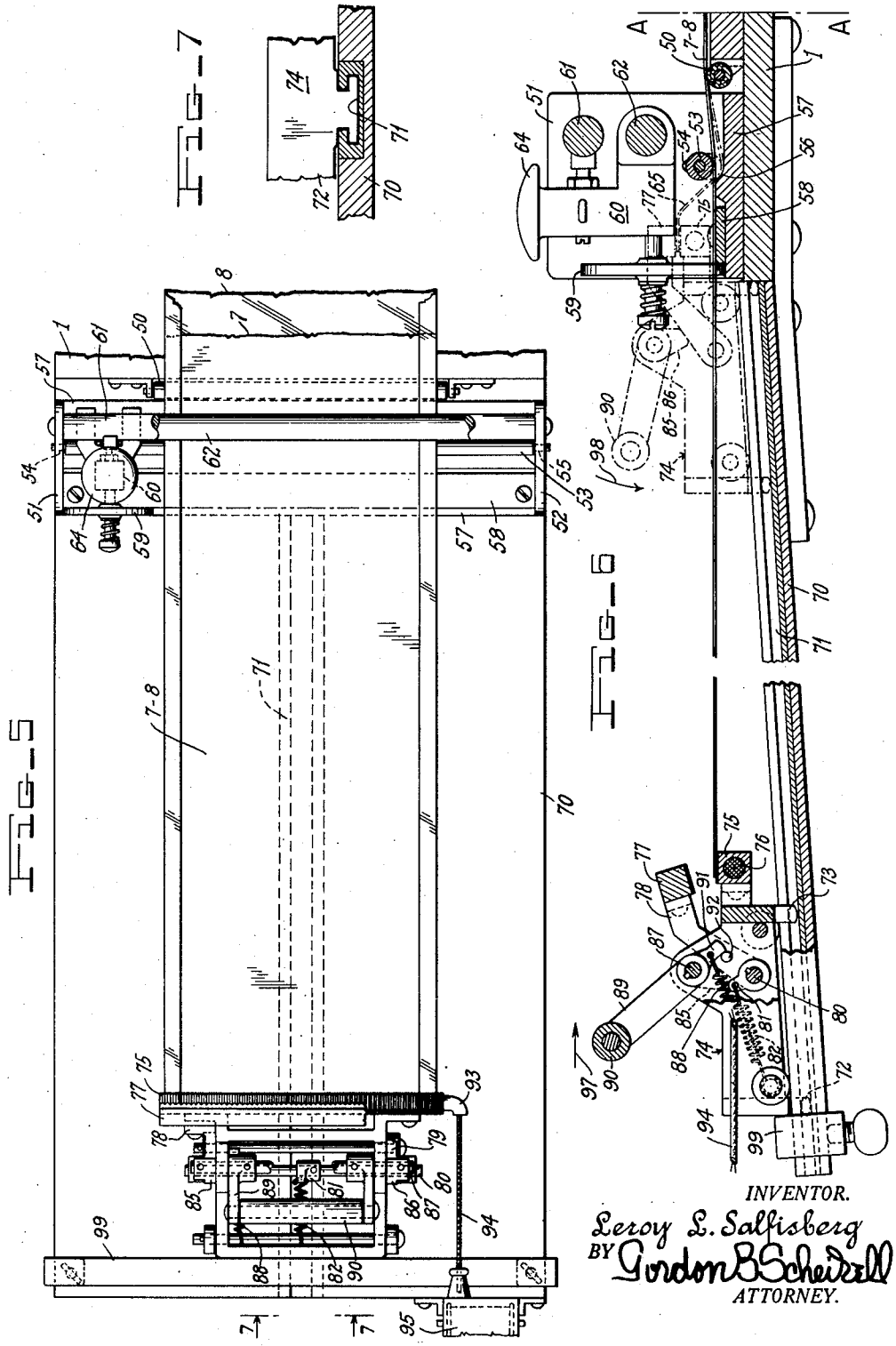


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Patented Dec. 20, 1938 2,140,599

UNITED STATES PATENT OFFICE

2,140,599

ENVELOPE FORMING MACHINE

Leroy L. Salfisberg, South Orange, N. J., assignor to Wrap-Ade Machine Company, Newark, N. J., a corporation of Delaware

Application September 20, 1937, Serial No. 164,690

3 Claims. (Cl. 93—18)

This invention pertains in general to wrapping machines and specifically relates to a construction of mechanism for handling wrapping material.

The principal object of the invention consists in providing a wrapping machine having means for producing prepared wrappings.

Another object of the invention comprises providing apparatus to enable an operator to pull out selected lengths of folded wrapping material which is severed at a desired length.

A further object of the invention comprises providing a wrapping machine having a reciprocative mechanism for withdrawing selected lengths of wrapping material from a supply source.

A still further object consists in producing an arrangement for pulling out selected lengths of wrapping material from a supply source and concomitantly applying seals in the material.

These and other objects will be apparent from the following, reference being made to the accompanying drawings forming a part of the specification in which like reference numerals designate corresponding parts, and in which:

Fig. 1 is a plan view of a part of a preferred embodiment of the machine in accordance with the invention, showing the supply reels and webs of material together with the folding mechanism and a selective adhesive applying arrangement;

Fig. 2 is a longitudinal sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is an elevational view of the apparatus depicted in Figs. 1 and 2;

Fig. 4 is a detailed view of a forming device used in the invention;

Fig. 5 is a plan view of another part of the machine represented in Fig. 6 as an elevational view, partially sectioned;

Fig. 6 is an elevational view partially sectioned along a longitudinal line showing parts of the apparatus not shown in Figs. 1, 2, and 3, and being a continuation of Fig. 2 extending from the line A—A thereof; and

Fig. 7 is a fragmentary cross-section of a guide track arrangement utilizing mechanism depicted in Figs. 5 and 6.

The invention contemplates the provision of a machine for providing prepared wrappings from a continuous web supply source. In accordance with the invention, one or more webs of packaging material are fed to mechanism which folds the material and adhesively joins and cuts the same as desired. The machine is adapted to permit selected lengths of the material to be pulled out and severed, the severed material being utilized in wrapping and packaging processes. The machine is provided with means for automatically transversely sealing the pulled out lengths of material so that envelopes and other sealed packaging structures can be provided.

Referring to the drawings in detail, a table 1 is mounted upon an upright support 2 and is provided with parallel upstanding side plates 3 and 4. Mounted between these two side plates are rotatable reels 5 and 6. Rolls of web material 7 and 8 are mounted on the reels 5 and 6 respectively. The materials 7 and 8 may be of various compositions. In the present embodiment, the material 8 comprises a web of transparent material such as regenerated cellulose with a thermo-setting coating contained thereon. The material 7 comprises a web of soft cardboard somewhat less in width than the width of the material 8. The reels 5 and 6 are transversely adjustable so that the webs 7 and 8 can be positioned in different overlying relations.

The material 8 is fed around rollers 9–12 so that lines of adhesive can be applied to the top side of the material 8. The adhesive applying arrangement comprises a pair of gluing devices 14 and 15 including pots 14 and 15 adjustably suspended from a transverse rod 16 mounted between the plates 3 and 4. The pots 14 and 15 contain glue and include rollers which dip in the contained glue and apply lines of adhesive 18 and 19 along the web of material 8.

The two webs 7 and 8 are brought together over roller 20 and thence, in the operation of the machine, are fed together to and from a forming device 23. The forming device 23 comprises a transverse bar 24 suspended from uprights 25 and 26 which depend from a transverse bar 27 mounted between plates 3 and 4. The uprights 25 and 26 have hook members adjustably supported by the top of the bar 27 and are provided with set screws so that the bar 24 can be easily removed and replaced with a bar of different width to form wrappings of different dimensions. The bar 24 is suspended a slight distance 30 from the surface of the table 1 and includes sharp prism shaped corners 31 and 32. In addition to the foregoing, a roller 33 is rotatably mounted between mounting members 34 and 35 which are adjustably suspended from the bar 27 as shown in Figs. 2 and 3.

Referring to Figs. 1 and 2, the edges 8*a* and 8*b* of the web 8, respectively extending upon opposite sides of the web 7, and accommodating the glue lines 18 and 19, are brought around the edges of the web 7 to pass beneath guide members 40 and 41 adjustably secured to the table 1 upon opposite sides of the webs.

Referring to Fig. 2, it will be seen that the webs 7 and 8, after passing the roller 20 are fed toward the surface of the table 1 in a direction substantially perpendicular thereto and, after passing around the forming bar 24, pass substantially parallel to the surface of the table 1,

thus forming an approximation of a right angle in passing to and from the forming device. The united webs, with the edges of the web 8 folded over the web 7, form a composite web which is now fed for further operations in the making of prepared wrappings.

Referring to Figs. 5 and 6, the composite web 7—8 is fed over roller 50 between two upright plates 51 and 52. A transverse ejector rod 53 is slidably mounted in slots 54 and 55 in the plates 51 and 52. The weight of the rod 53 causes the same to rest in a depression 56 of horizontal plate 57 mounted on the surface of table 1 and extending between the plates 51 and 52.

The composite web structure 7—8 passes beneath the roller 53 and over a hardened cutting plate 58, secured to the plate 57. The plate 58 has a perpendicular front edge engaged by a hardened roller 59 mounted upon a carriage 60 riding upon transverse rods 61 and 62. The carriage 60 has a manual knob 64 and is adapted to move the roller 59 back and forth across the front edge of the plate 58 to produce a shearing action for transversely severing the composite web 7—8. When the composite web 7—8 is thus severed, the end is distended away from the plate 58 as represented by dotted line 65 in Fig. 6. The distended end 65 may be grasped in a repeat operation to pull out a further section of the composite web 7—8.

The table 1 is provided with a sub-table 70 which slopes slightly with respect to the horizontal surface of the table 1. The sub-table 70 is provided with a longitudinally extending track 71 in which rider members 72 and 73 form part of a carriage 74. The carriage 74 includes a front transverse gripping jaw 75. The gripping jaw 75 consists of a metallic bar having an upper serrated surface and an internal electrical heating element 76.

Another transverse gripping jaw member 77 is mounted on side arms 78 and 79, which are pivoted to the carriage 74 so that the jaw member 77 may come into gripping engagement with the bar 75. The jaw 77 also comprises a metal bar having a serrated surface adapted to mesh the serrated surface of the bar 75. The members 78 and 79 are mounted upon a shaft 80, journalled transversely in the carriage 74 and centrally provided with a lever 81. The lever 81 is connected with a tension spring 82 secured to a rear part of the carriage 74 for normally maintaining the bar 77 in an extended upward position away from bar 75. The members 78 and 79 are adapted to be engaged by cam members 85 and 86 mounted upon a shaft 87, journalled transversely in the carriage 74. The shaft 87 has keyed thereon a handle 89 having a transverse manual pulling member 90. The member 90 is normally maintained in an upward extended position as shown in the left hand part of Fig. 6, by virtue of the tension spring 88, a stop member 91 mounted on the shaft 87 limiting the movement of the handle 89 through contact with the pin member 92.

The electrical heat element 76 in bar 75 has electrical connections in a flexible cable 94 protruding from a conduit 93 and extending rearwardly of the table 70 to a take-up device 95. The take-up device 95 includes a casing containing a spring driven reel for automatically coiling the cable 94 except for the parts thereof withdrawn by movement of carriage 74. The other end of the coiled cable 94 is connected with suitable electrical supply terminals.

In the operation of the machine, the member 90 is manually grasped and moved in the direction of the arrow 97 in Fig. 6 to a limiting position, as represented in dotted lines in Fig. 6. In this limiting position, the jaw members grasp the distended end of composite web 7—8 and the handle 90 is moved in the direction of the arrow 98 in Fig. 6. Due to this action, the jaw members are pressed together and engage the distended end 65 of the composite web. The handle 90 is then pulled back toward the operator along the track 71, whereupon the webs are pulled from the supply source past the forming device 23. The carriage 74 may be moved any desired distance, such as determined by the adjustable stop member 99, whereupon the member 90 is released and the knob 64 transversely actuated to sever the composite web. During the pull out movement of the composite web 7—8, the two webs will have been longitudinally united by overlapping of the edges 8a and 8b and will have been transversely sealed together by the pressure-heat action of the gripping jaw members 75 and 77. When desired, the reciprocative cutting roller 59 may be actuated by foot levers, for example, as shown in my United States Patent No. 2,054,523, issued September 15, 1936 and entitled "Universal wrapping machine".

It will be seen that the present invention provides for the economical and efficient production of prepared wrappings such as laundry shirt envelopes, and other packaging structures. Although a preferred form of apparatus has been disclosed, it will be recognized that various changes and equivalent structures can be made without departing from the intended scope of the invention. Therefore, no limitation is intended except as pointed out in the appended claims.

What is claimed as new and original to be secured by Letters Patent of the United States is as follows:

1. A machine for supplying prepared wrappings which comprises, means for supplying a plurality of web layers of packaging material, forming means for folding the edges of one layer around the edges of another, means for pulling the composite layers past said last-mentioned means and including a reciprocatively operated gripping device.

2. A machine for producing prepared wrapp'ngs comprising, a supply means for feeding web packaging material in opposed layers, means for pulling out selected lengths of said material including a gripping device for gripping said material and moving the gripped material from one position to another, said gripping device including means for applying heat and pressure to the opposed layers of said webbed material to seal said layers together.

3. A machine for supplying prepared wrappings comprising, means for supplying different width webs of packaging material, a forming device positioned transversely of said webs, means for guiding said webs in a superimposed condition to and from said forming device with the edges of the wider web folded around the edges of the narrower web, means for applying a line of adhesive to the edges of said wider web before being folded, means for severing selected lengths of the composite web structure, a pull-out device having jaws for gripping a severed end of said composite web structure to move the same a selected distance and having means for heat sealing said gripped ends of said composite structure to form a transverse seal therein.

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