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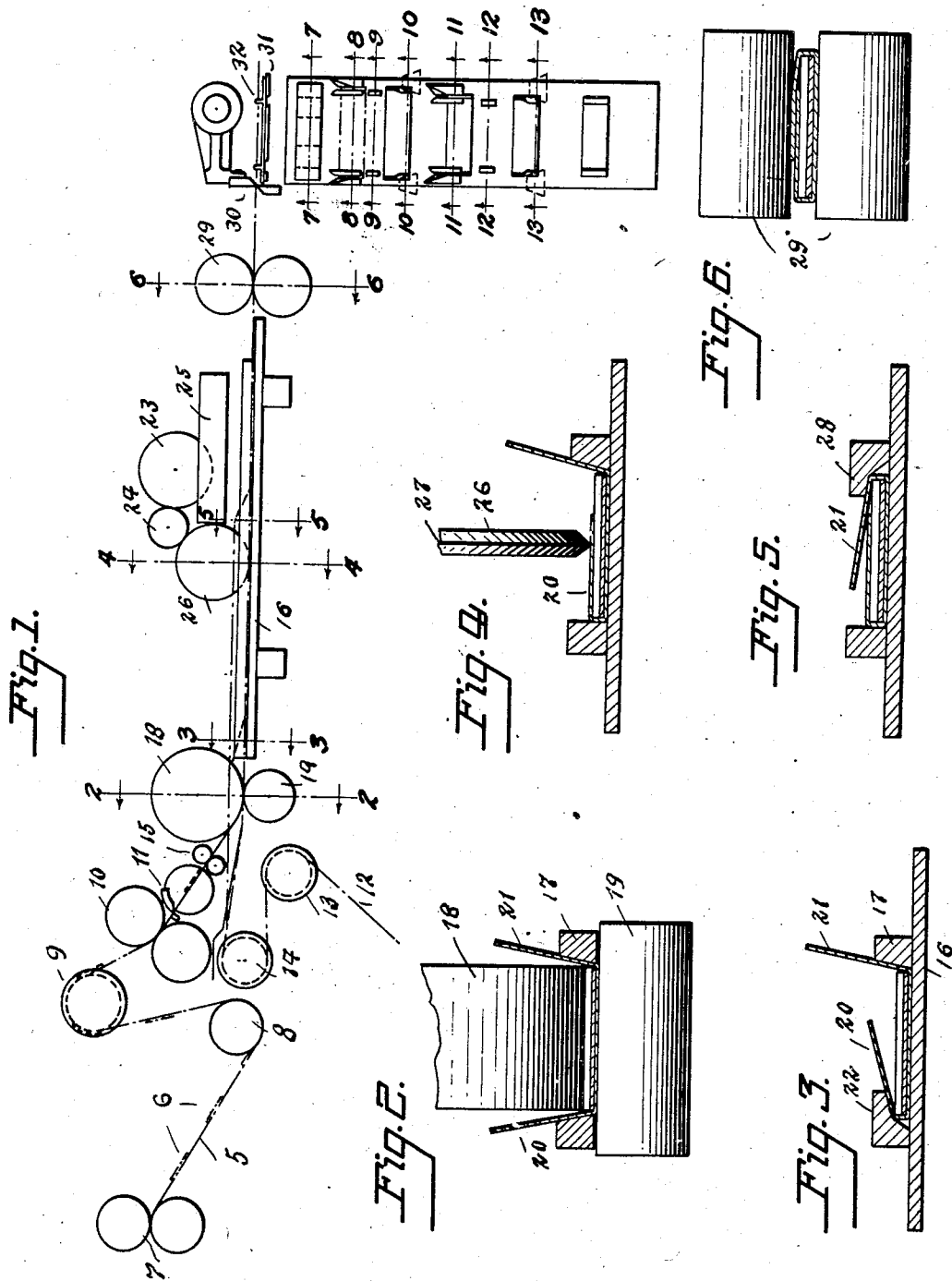
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METHOD FOR WRAPPING FIRST AID DRESSINGS

Filed Jan. 31, 1940

2 Sheets-Sheet 1



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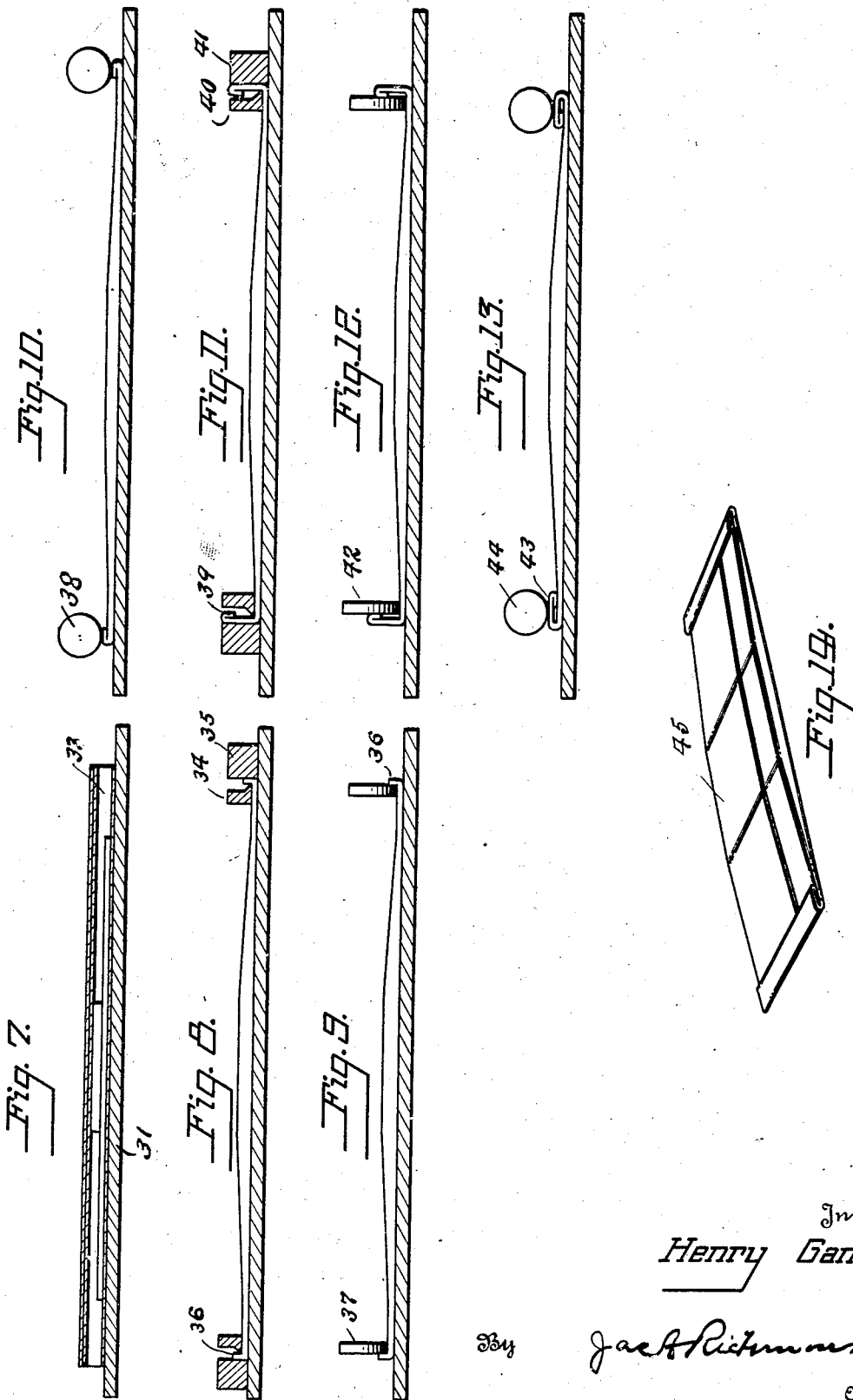
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METHOD FOR WRAPPING FIRST AID DRESSINGS

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10 Claims. (Cl. 93—3)

The invention relates to methods of and machines or devices for wrapping articles as separate units and is particularly addressed to the problem of wrapping and sealing soft, limp, flat objects of generally rectangular form, such as surgical dressing units comprising a strip of surgical adhesive and a complemental absorbent pad or dressing. Articles of this type are more or less conventional and are extensively used as emergency or first-aid dressings in the treatment of minor cuts and other injuries. It is desirable that they reach the consumer in a sterile state and this requires complete individual wrapping and sealing. It is further desirable that this be done by machine to keep pace with the machine production of the dressings and to eliminate the drawback of manual handling and its hazards. The problem is involved not only because of the difficult handling qualities of the article but because it is necessary to keep the manufacturing costs within a range that will not appreciably effect the selling price. Moreover the wrapper must be so designed as to permit unsealing and removal of the dressing with facility and dispatch.

Hence, the principal object of the invention is to provide a simple and economical method and means for the complete individual wrapping and effective sealing of commodities of the nature stated with particular emphasis on first-aid dressings.

The nature, characteristic features and scope of the invention more readily will be understood from the following description taken in connection with the accompanying drawings, forming a part hereof, wherein

Figure 1 is a schematic representation in part side elevational and in part plan, the elevational part showing instrumentalities for contemporaneously feeding continuous strips of first-aid dressings and wrapping material, spotting the dressings, side folding the wrapper, pasting the side folds, and cutting off the leading side wrapped article; and the plan shows the cross conveyer and instrumentalities for performing the various operations for completing the folding and sealing.

Fig. 2 is an enlarged sectional view on line 2—2 and shows the initial stage of the side folding operation.

Fig. 3 is a section on line 3—3 showing one side flap nearly closed upon the dressing.

Fig. 4 is a section on line 4—4 showing the first flap fully closed upon the dressing and operated on by a paste depositing device.

Fig. 5 is a section on line 5—5 showing an advanced stage of the side folding operation in which the second flap is closing upon the active paste surface of the first flap.

Fig. 6 is a section on line 6—6 showing the lapped side flaps undergoing squeezing by the rolling instrumentalities which transmit the side wrapped article to the wrapper cutting off device.

Fig. 7 is a section on line 7—7 showing the wrapped article on the cross conveyer before the end closing operations.

Fig. 8 is a section on line 8—8 showing the bead forming or initial end closing operation.

Fig. 9 is a section on line 9—9 showing the application of paste for securing the beads.

Fig. 10 is a section on line 10—10 showing the beads or turned end edges being squeezed to place to effect the first end sealing.

Fig. 11 is a section on line 11—11 showing the formation of the end flaps.

Fig. 12 is a section on line 12—12 showing the pasting operation preliminary to sealing of the end flaps.

Fig. 13 is a section on line 13—13 showing the final operation of closing down and sealing the end flaps.

Fig. 14 is a perspective view of an article completely wrapped and sealed in accordance with the invention, more particularly showing the cross reinforced or stiffened ends to facilitate cross tearing of the wrapper in order to remove the first-aid unit.

Referring more particularly to Fig. 1, it will be understood that a web or strip 5 of first-aid material, comprising surgical adhesive tape and absorbent pads 6 affixed at intervals to the adhesive face thereof, is continuously fed from rolls 7 over suitable tension and guide rolls 8, 9, and 10, to a suitable cutting device 11 which severs the tape appropriately between its padded intervals. Wrapping material, which may be waxed paper, or any other suitable fabric, is fed contemporaneously and, likewise, in the form of a continuous strip 12, and is guided over rolls 13 and 14 to a position below the tape cutting device 11 and tape guiding and spotting rolls 15. The arrangement is such that the paper or other wrapping material is fed faster than the tape or dressing material whereby the units of the latter are appropriately spotted or spaced on the paper, for example, one inch apart.

The strip of wrapping material with the first-aid units supported thereon, in the manner and relation stated, is caused to traverse a trough-

like guide 16 whose side wings 17 are designed to initiate the side folding of the wrapper, the feed rolls 18 and 19 exerting appropriate shape retaining pressure on the superimposed parts of the stock and wrapping material during the up-bending of the side flaps 20 and 21. Flap 20 is then closed down upon the stock by an undercut former 22. A dipping roller 23, and its follower 24, supply paste or glue from a tank 25 to a paste-depositing roller 26. As shown in Fig. 4 the latter is preferably formed with a relatively sharp V or knife tread 27 so that it delivers a relatively narrow line of paste upon the top surface of the closed flap 20. Thereupon the outer flap 21 is closed over to sealing position by a side former 28, and both flaps are then effectively closed and sealed by passage through the feed rolls 29, Fig. 6.

After the sealing of the side flaps the wrapped stock passes to wrapper cutting device 30 which severs the wrapped stock appropriately to provide for end flaps and then delivers the wrapped units upon a cross conveyor 31 equipped with suitable guides or gripping devices 32 for proper handling of the units during the final sealing operations.

The first of such operations is the crosswise stiffening or reinforcing of the end flaps or closures 33 by beading their end extremities. At the station, Fig. 8, there are coordinate forming devices 34 and 35 for forming the beads 36. At the next station, Fig. 9, paste depositing rollers 37 lay lines of paste immediately adjoining the beads 36 which are thereupon pressed down and sealed with relation to the wrapper by, for example, rollers 38 as shown in Fig. 10.

At the next station, as more particularly shown in Fig. 11, the beaded end flaps 39 are struck up by forming devices 40 and 41. The next operation, as shown in Fig. 12, is the application of paste lines crosswise of the wrapper substantially immediately adjacent the flaps 39, as by the use of paste rollers 42. The end flaps 39 are then closed down and sealed with relation to the wrapper, as at 43, through the medium of pressing instrumentalities 44.

The completely wrapped and sealed article is shown at 45 in Fig. 14 and it will be understood that the beaded ends of the wrapper provide adequate transverse crosswise support to permit the crosswise tearing of an end flap thereby simplifying the removal of the first-aid unit.

Having described the invention what is claimed as new is:

1. Method for the complete wrapping and sealing of first-aid units, which comprises spotting the units upon a travelling strip of wrapping material, subjecting the wrapping material with the spotted units thereon to a pressing operation, folding and sealing the side margins of the strips with relation to the units, dividing the wrapping material in the inter-spotted areas, and folding and sealing the end flaps.

2. Method for the complete wrapping and sealing of first-aid units, which comprises spotting the units upon a travelling strip of wrapping material, subjecting the wrapping material with the spotted units thereon to a pressing operation, wrapping and sealing the units with provision for end flaps, severing the wrapping material at the interconnected end flaps, reinforcing the end flaps by beading the end edges thereof, and folding and sealing the end flaps.

3. Method for the complete wrapping and sealing of first-aid units, which comprises spotting

the units upon a travelling strip of wrapping material, subjecting the wrapping material with the spotted units thereon to a pressing operation, wrapping and sealing the units with provision for end flaps, severing the interconnected end flaps, reinforcing the end flaps by beading the end edges thereof, and folding and sealing the end flaps with the beads turned in.

4. Method for the complete wrapping and sealing of first-aid units, which comprises spotting the units upon a travelling strip of wrapping material, subjecting the wrapping material with the spotted units thereon to a pressing operation, wrapping the units while supporting them against deformation, disconnecting the leading unit from the next adjacent unit, and sealing the end flaps.

5. The method of completely wrapping and sealing first-aid units, which comprises the steps of spotting units of first-aid material upon a strip of wrapping material in spaced relation, pressing the wrapping material with the units thereon, closing one of the side margins of the wrapping material upon a unit, applying paste to one of said side margins, closing the other side margin upon the first side margin, severing the wrapping material between the units, and folding and sealing the end flaps of the wrapping material.

6. The method of completely wrapping and sealing first-aid units, which comprises the steps of spotting first-aid units in spaced relation upon a strip of wrapping material, subjecting the wrapping material and spotted units thereon to a pressing operation, closing one side margin of the wrapping material upon the unit, applying paste to one of the side margins, closing the other side margin upon the first side margin, severing the wrapping material between the units, beading the severed ends of the wrapping material, and folding and sealing the beaded end flaps.

7. The method of completely wrapping and sealing first-aid units, which comprises the steps of spotting first-aid units upon wrapping material in spaced relation, subjecting the wrapping material and units to a pressing operation, closing one side margin of the wrapping material upon the unit, depositing longitudinally thereon a relatively narrow line of bonding substance, closing the other side flap upon the unit, sealing the two flaps together, severing the wrapping material between the units, and folding and sealing the end flaps of the wrapping material.

8. The method of completely wrapping and sealing limp, flat first-aid units, which comprises the steps of spotting the first-aid units in spaced relation upon a continuous strip of wrapping material, subjecting the spotted units and wrapping material to a pressing operation, causing the side margins of the wrapping material to successively close upon and longitudinally seal the units, severing the wrapping material at a point between the spaced units and sealing the end flaps of the wrapping material.

9. The method of completely wrapping and sealing first-aid units, which comprises the steps of spotting first-aid units in spaced relation upon a continuous strip of wrapping material, folding the side margins of the wrapping material longitudinally about the spaced units while supporting the units upon the wrapping material against deformation, severing the wrapping material at a point between the spaced ends of the spotted units and folding and sealing the end flaps of the wrapping material.

10. The method of completely wrapping and sealing limp, flat first-aid units, which comprises feeding individual units to a continuous strip of wrapping material, feeding the wrapping material at a rate faster than the feed of the first-aid units to cause the units to be spaced on the wrapping material, subjecting the wrapping material and units thereon to a pressing operation, folding one side margin of the wrapping mate-

5 rially longitudinally over the material, applying a thin line of paste to one of the side margins of said wrapping material, folding the other side margin of the wrapping material longitudinally over the first side margin and pressing the two margins together, severing the wrapping material between the units and folding and sealing the end flaps of the wrapping material.

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