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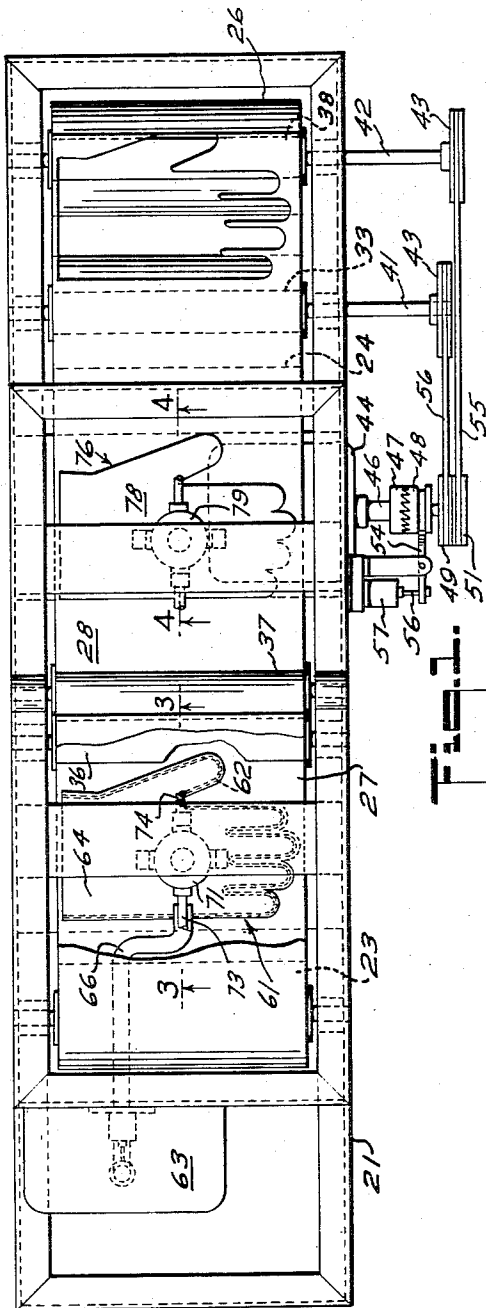
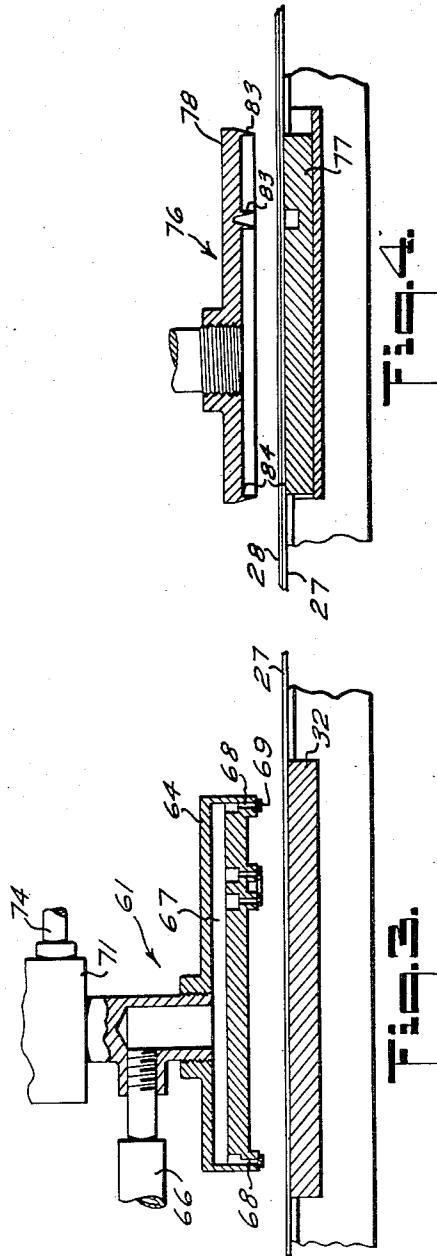
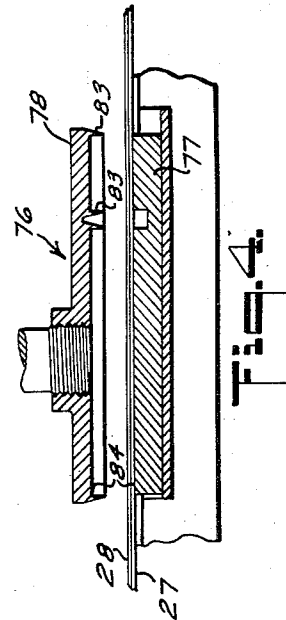
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PAPER GLOVE AND METHOD AND APPARATUS FOR PRODUCING SAME

Filed June 18, 1956

2 Sheets-Sheet 1



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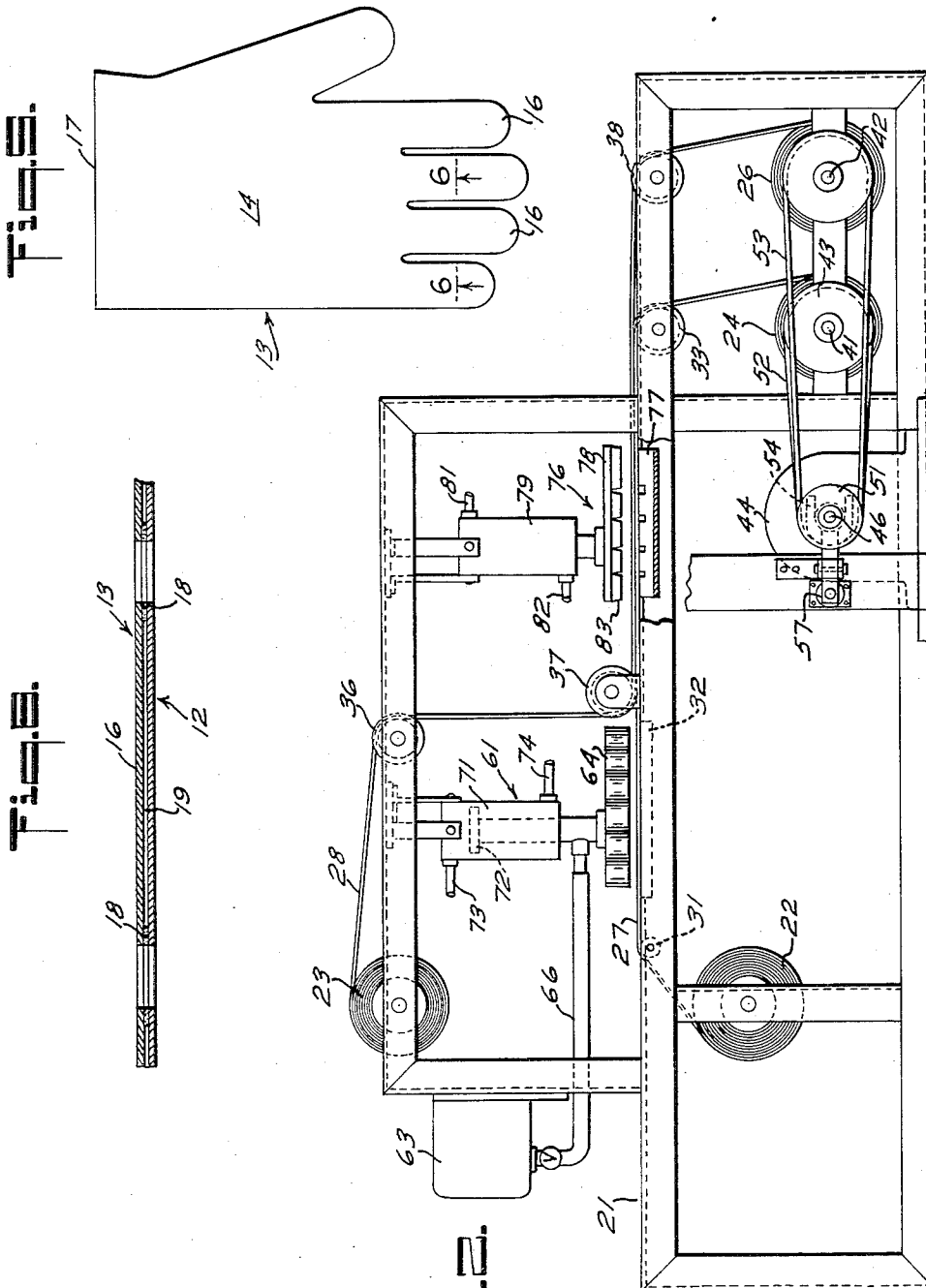
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**PAPER GLOVE AND METHOD AND APPARATUS
FOR PRODUCING SAME**

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6 Claims. (Cl. 2—169)

This invention generally relates to the glove making art, and is more particularly directed towards a glove which may be readily fabricated entirely from paper or similar inexpensive material, and the method and apparatus for producing the same. By the term "glove" as used herein, including the claims, is meant to embrace as well mittens and other like covering or enclosure for the hands.

There are many occasions which present the need for an inexpensive disposable glove formed of paper or the like. By way of example, restaurants serving food such as spareribs adapted to be held in the hands of the user, housewives in washing dishes or clothes or having to handle garbage or other dirty or soiled material, physicians in conducting various types of examinations, and in fact all persons could take advantage of such a glove as a means of avoiding direct contact with any unsanitary, unclean, or possibly contaminated object which they may have to handle. The use of paper for such a purpose is particularly expedient because the rapid advances in paper technology have resulted in inexpensive paper products which may be water resistant, strong, and extremely thin whereby the user's sense of feeling is not unduly hampered. With such materials, it is possible to even produce a lace-like dress glove for women, thereby avoiding the need for washing conventional gloves after each use.

It is therefore an object of the present invention to provide a glove fabricated entirely of paper or like material, which may be inexpensively produced whereby it may be discarded after a single use thereof.

Another object of my invention is to provide a paper glove of the type described formed of two flat blanks of material in which the sole means of securing the blanks together consists of an adhesive binder extending along the conventionally seamed marginal portions of the glove.

A further object of this invention is to provide a method and apparatus for producing paper gloves of the above character which is extremely simple and inexpensive, yet which is capable of automatically fabricating the glove parts and securing the same together in a minimum of time.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawings and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawings:

Figure 1 is a top plan view of apparatus of the present invention for producing paper gloves.

Figure 2 is a side elevational view thereof.

Figure 3 is a cross-sectional view taken substantially in the plane indicated by line 3—3 of Figure 1, and illustrating the adhesive applying mechanism.

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Figure 4 is a cross-sectional view taken substantially in the plane indicated by line 4—4 of Figure 1, and illustrating the dies for cutting the paper blanks and securing the blanks together.

Figure 5 is a plan view of a paper glove produced by the method and apparatus described herein.

Figure 6 is a cross-sectional view, on an enlarged scale, taken substantially in the plane indicated by line 6—6 of Figure 5.

In accordance with the present invention, an apparatus and method are provided for automatically producing paper gloves of the type shown in Figures 5 and 6. It should be understood that such a glove is merely meant to be an example of a paper glove, since gloves of other forms or shapes, methods of adhesive securing, and the like, could be readily carried out by slight modification of the apparatus illustrated in the drawings.

The glove selected for purpose of illustration is extremely simple in construction, and merely consists of a pair of flat blanks 12, 13, formed entirely from paper and preferably but not necessarily as separate parts. By the term "paper," I mean to include paper-like materials of a natural or synthetic source. Each of the blanks as here shown are of the same size and shape and will be seen to include a main hand or body section or portion 14 and a plurality of finger sections or portions 16 extending therefrom. When the two blanks are placed in stacked or matching relationship, the marginal edges of the hand and finger portions of the respective blanks may be secured together so as to provide an enclosure for the wearer's hand, it being understood that the marginal edges 17 of the blanks remain unsecured so as to permit entry of the hand between the two blanks.

For reasons of economy and simplicity of construction, the sole means for securing the edges of the blanks together constitutes a glue or similar adhesive 18 disposed between the confronting surfaces of the blanks, and preferably extending continuously along the marginal edges thereof, with the exception of edge 17 as previously explained. In this manner, the matching finger portions 16 of the respective blanks will each provide an elongated sleeve-like finger receiving member having a normally flat chamber 19 disposed between the confronting portions 16, and peripherally bounded by the adhesively secured portions of such blanks. Naturally, when a finger is inserted into the chamber, the surrounding paper portions will deform so as to permit entry thereof, and for this reason, the width of each of the finger portions is larger than the normal width of the proposed user's finger. However, it will be appreciated that other forms of adhesively secured marginal seams could be provided without departing from the scope of the invention.

Apparatus is disclosed in Figures 1 through 4 of the drawings which is capable of producing the glove hereinabove described. In broad terms, such apparatus is designed to sequentially cut, glue and secure the blanks 12 and 13 together while requiring a minimum of manual attention or supervision. More particularly, by supplying continuous strips of paper, applying adhesive to one of said sheets in a pattern corresponding to the configuration of the adhesive joint 18, and then simultaneously cutting the blanks from the strips and forcing the same together in adhesive contact, the finished glove article will be produced.

With reference to said figures, the apparatus will be seen to include a suitable framework 21, on the forward end of which is journaled a pair of paper supply rolls 22 and 23 which may be horizontally disposed with the latter roll vertically above the former. At the rear or discharge end of the framework, there is provided a pair of take up rolls 24 and 26, the former being adapted to engage a paper strip 27 from roll 22 and the latter

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adapted to engage a paper strip 28 being unwound from roll 23. As will be later explained, the blanks 12 and 13 are cut from the respective strips 27 and 28 as they pass between their supply and take up rolls.

Paper strip 27, upon passing from its supply roll first engages a supporting guide roller 31, then passes along the upper surface of a platform 32 extending horizontally along the length of the framework, engages another guide roller 33 and is then wound about its take up roll 24. The other strip 28 is spaced above the platform 32 and first engages a guide roller 36 then passes downwardly towards a roller 37 from which it continues in a horizontal path adjacent and overlying the strip 27 until it reaches a roller 38 from which it winds about its take up roll 26.

As will be presently explained in detail, during the initial horizontal movement of strip 27, the glue or other adhesive is applied thereto, and when the two strips are in contiguous relation, the blanks are cut and sealed together, the portions of the strips remaining after the cutting of the blanks being wound around the respective take up rolls 24 and 26.

To accomplish the foregoing the strips are moved in unison with an intermittent motion. As here illustrated, the take up rolls serve as the drivers for pulling the paper strips, and obviously suitable friction means can be employed to prevent overrunning of the supply rolls. To effect the desired intermittent rotation of the rolls 24 and 26, shafts 41 and 42 are provided on the respective rolls, each carrying a suitable pulley or sheave 43. A motor 44 is mounted on the framework and includes a drive shaft 46 having a clutch element 47 attached thereto. A cooperating clutch element 48 is adapted to be selectively engaged with and disengaged from element 47, element 48 being provided with a pair of sheaves 49 and 51 for driving sheaves 43 through separate belts 52 and 53. Clutch element 48 is carried on one end of an arm 54 pivotally mounted to the frame, the other end of the arm being actuated by a plunger arm 56 of a solenoid 57. Thus, upon energization and release of the solenoid, the arm will be oscillated, the clutch elements engaged and disengaged, and consequently the strips moved intermittently, although in unison along the apparatus.

Adhesive applicator means 61 is provided to apply adhesive to the upper surface of strip 27 during stoppage of movement thereof, the adhesive being applied in a pattern as indicated by the dotted lines 62 in Figure 1, this pattern corresponding to the marginal edges of the blanks after the same are formed. Glue or like adhesive may be supplied from a tank 63 to an applicator 64 through a valve controlled flexible conduit 66. The applicator has an internal chamber 67 communicating with vertical passages 68 whose lower ends define the above described pattern 62. Pads 69 may be provided at the lower ends of the passages, such pads serving to absorb a quantity of adhesive and transfer the same to the paper strip. To effect such transfer, the applicator 64 may be raised and lowered through suitable hydraulic mechanism, including a cylinder 71 having a piston 72 therein connected to the applicator, and suitable conduits 73 and 74 for introducing fluid under pressure to opposite sides of the piston. By moving the applicator downwardly upon strip stoppage, the pads will contact the upper surface of the strip 27 and deposit the adhesive pattern 62 thereon.

Adjacent the applicator means 61 is a suitable die mechanism 76 which performs the dual function of cutting both of the blanks 12 and 13 and causing the marginal portions of the latter blank to be pressed against the adhesive pattern 62 on the blank 12. Such a die may include a stationary lower die member 77 and an upper movable die member 78, the latter being vertically reciprocated through a cylinder 79 and suitable fluid inlet and outlet conduits 81 and 82. The die members

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are naturally complementary to each other and define cutting edges 83 which cut the blanks through the superimposed strips 27 and 28, and immediately adjacent the cutting edges, relatively flat portions 84 of the die members come into contact and effectively force the recently cut blank 13 against the adhesive pattern 62 on blank 12 so as to secure the blanks together.

The upper die member may then be raised, the finished glove removed, the strips advanced, and another cycle of glue application and blank cutting is commenced.

What is claimed is:

1. The method of forming a paper glove which comprises moving a pair of strips of paper along a defined path and in spaced relationship to each other, cutting substantially corresponding glove blanks from each of said strips, applying adhesive to preselected areas of one of said strips constituting marginal portions of a blank, and causing said blanks to be brought into contiguous matching relationship under pressure whereby said adhesive will secure said blanks together along said marginal portions at which adhesive was applied.

2. The method of fabricating a paper glove which consists of moving a first continuous strip of paper along a prescribed path, applying adhesive to predetermined surface portions of said strip with said adhesive defining the outline of a glove, moving a second continuous strip of paper along a prescribed aligned path adjacent said first strip with said strips being in parallel vertically spaced relation, cutting a substantially identical flat blank in the shape of a glove from each of said strips whereby the blank of said first strip has said adhesive along peripheral portions thereof, and then urging said blanks towards each other into peripheral adhesive engagement.

3. A method of producing a paper glove which consists of intermittently moving a first strip of paper along a defined path, simultaneously intermittently moving a second strip of paper along a path adjacent and overlying said first path, and during stoppage of said strip movements simultaneously cutting congruent glove blanks from each of said strips and forcing said strips together along marginal portions of said blanks to secure said blanks together along peripheral portions thereof to provide a glove, and removing the excess material of said strips after the cutting of said blanks.

4. Apparatus of the character described comprising a pair of paper feed rolls and a pair of paper take up rolls, means for moving a strip of paper from each of said feed rolls to respective ones of said take up rolls, means for guiding said strips between the respective pairs of rolls, a pair of glove blank dies positioned intermediate said feed and take up rolls and between which each of said strips passes, and a reciprocating adhesive applicator disposed adjacent a surface of one of said strips with said surface being in opposed relation to the other of said strips.

5. Glove making apparatus including a first and second die movable selectively from and towards each other for simultaneously forming a pair of like blanks in a pair of paper strips passing between said dies, and means for pressing said blanks together whereby said blanks will be secured together along the marginal portions thereof, and a first roll member and a second roll member for engaging end portions of each of said strips, said dies and said means being positioned intermediate said first and second rolls.

6. A method of producing a paper glove which consists of moving a first strip of paper along a defined path, simultaneously moving a second strip of paper along a defined path adjacent and overlying said first mentioned path, simultaneously forming identical glove blanks in each of said strips at confronting portions along the length of the strips, and forcing said strips together along marginal portions of said blanks to secure said

blanks together along peripheral portions thereof to form
a glove.

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