

Oct. 10, 1950

H. W. LIGON
POUCH MAKING MACHINE

2,525,139

Filed March 4, 1946

4 Sheets-Sheet 1

Fig. 1.

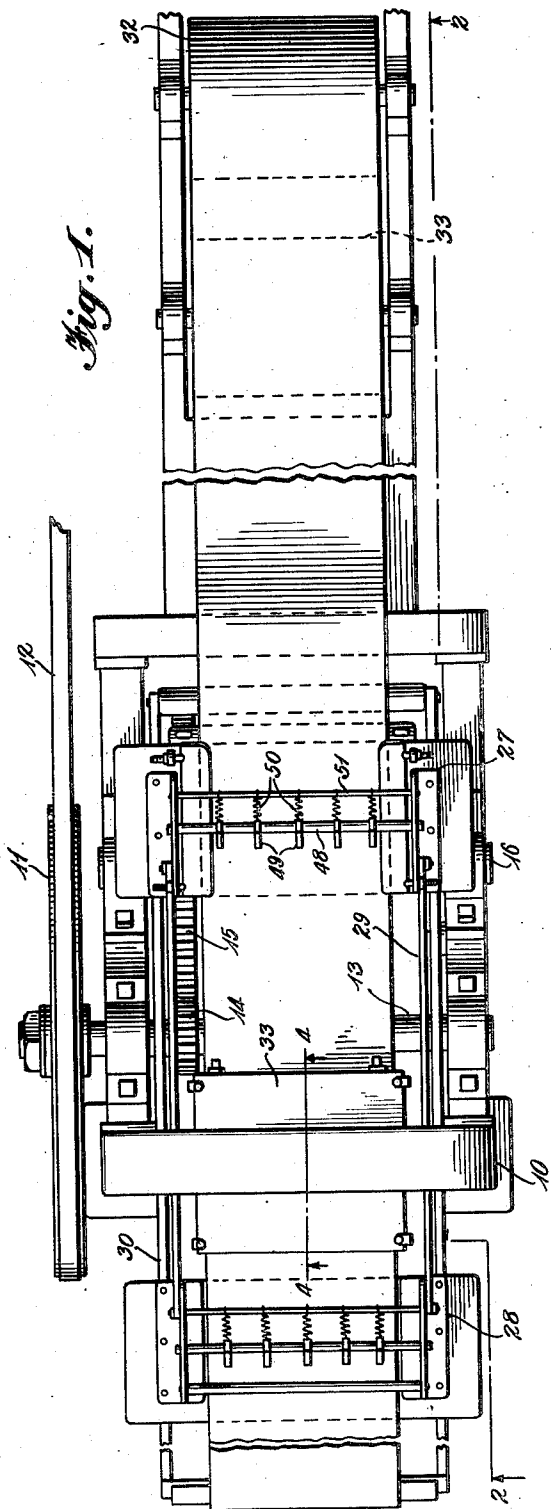
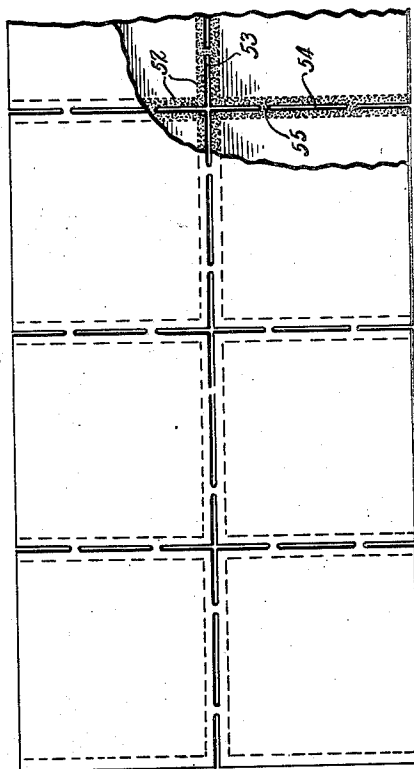


Fig. 3.



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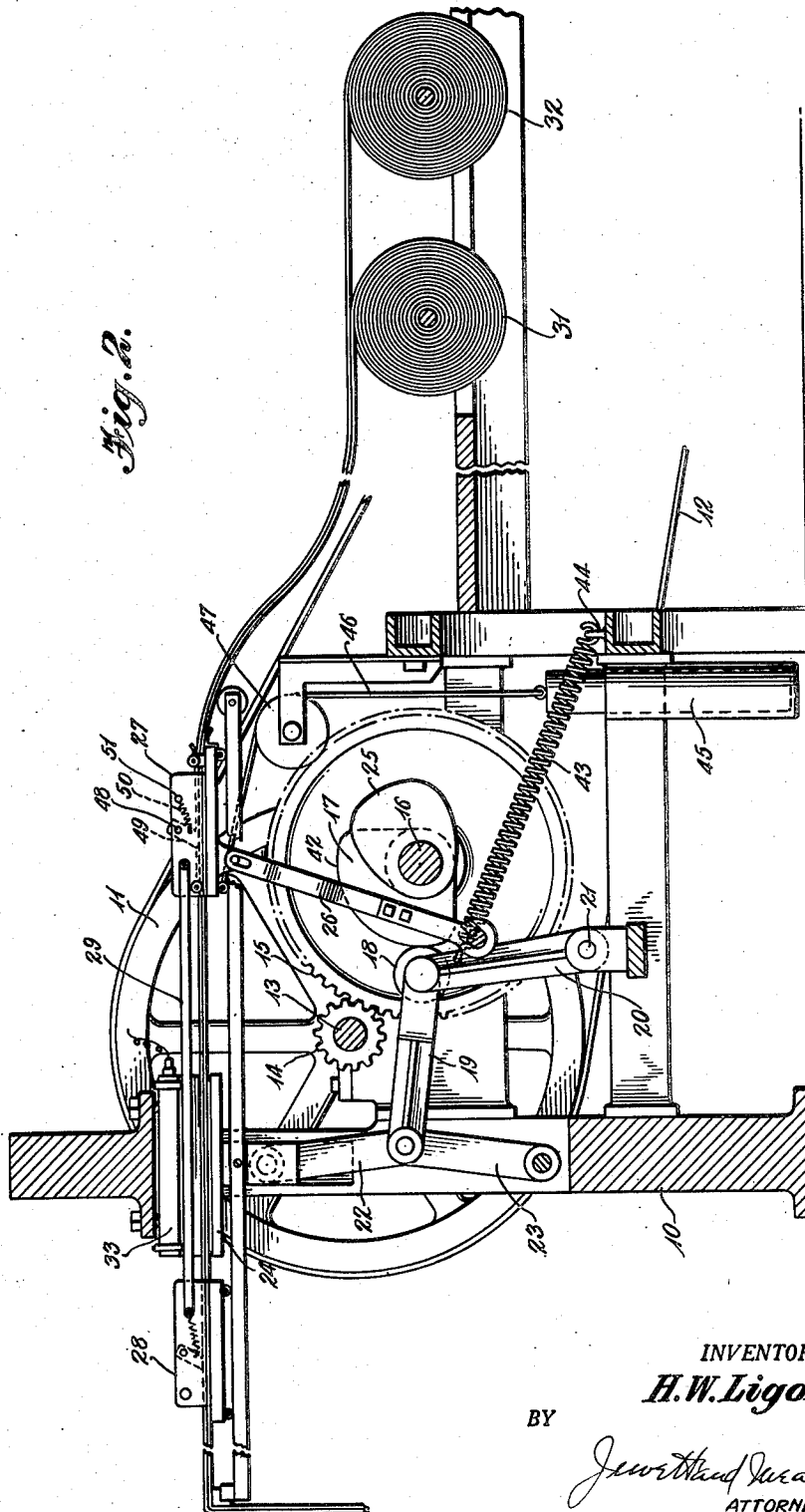
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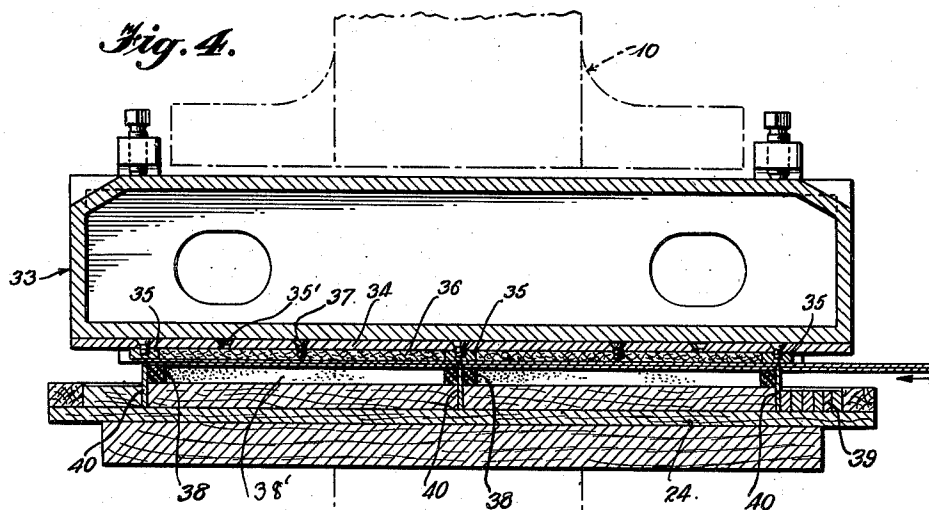
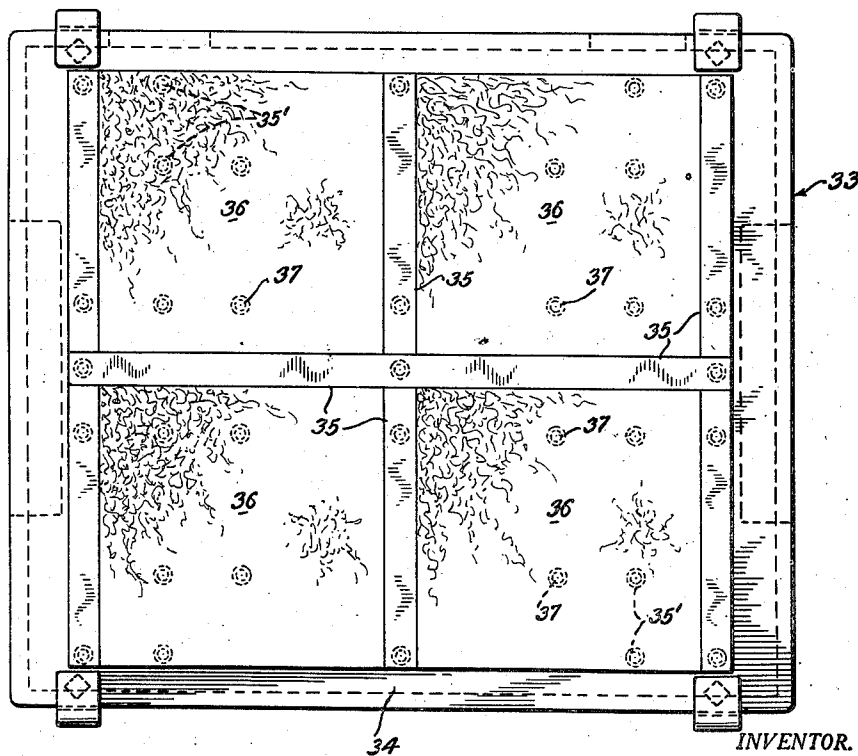


Fig. 5.



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Fig. 6.

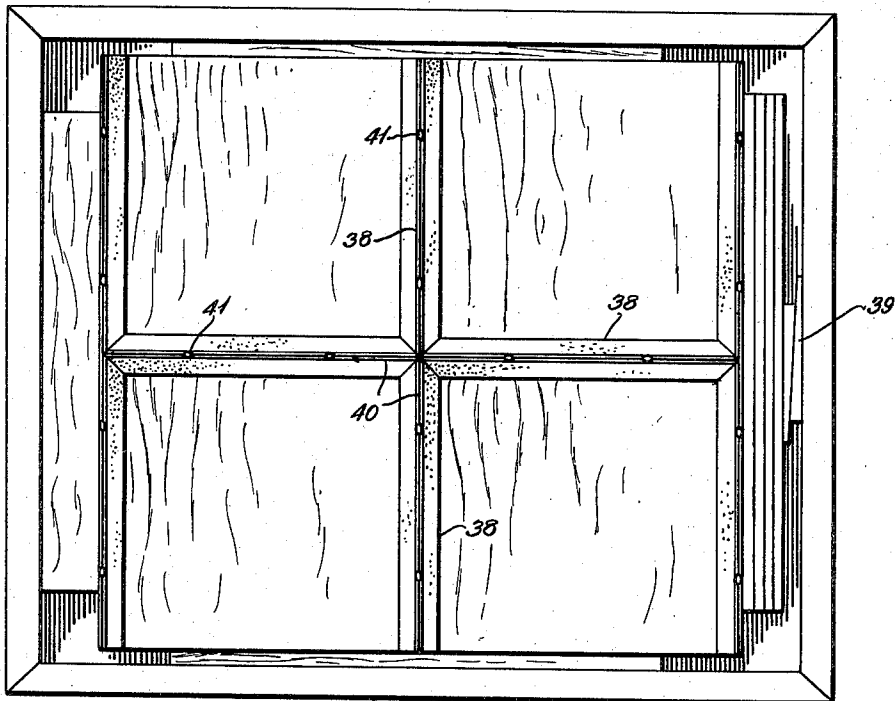


Fig. 7.

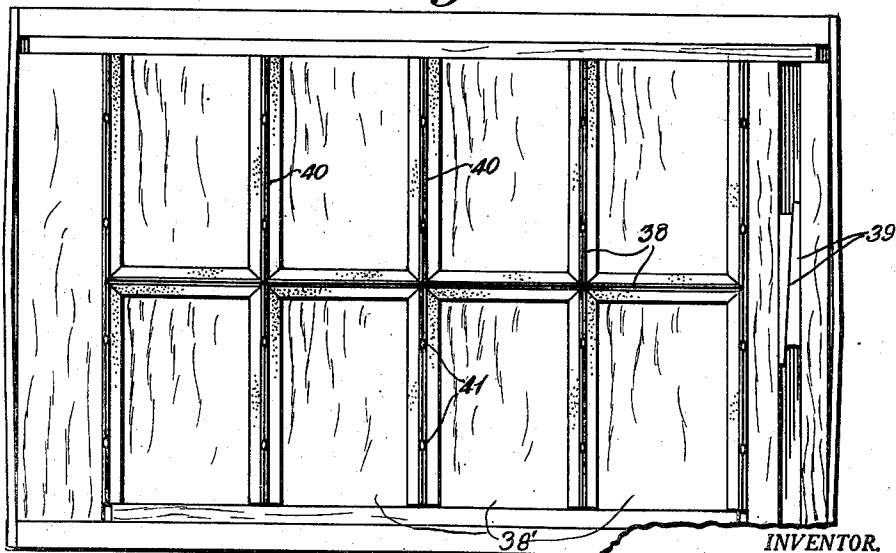
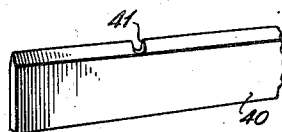


Fig. 8.



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UNITED STATES PATENT OFFICE

2,525,139

POUCH MAKING MACHINE

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Application March 4, 1946, Serial No. 651,911

1 Claim. (Cl. 93—8)

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The invention relates to machines for making pouches as of paper and has as an object the provision of a machine for making a variety of sizes of pouches by automatic action.

A further object of the invention is the provision of a machine for sealing together two strips of paper at three sides of rectangles and at least partially severing the said rectangles to provide pouches open at one edge and sealed at the three remaining edges.

It is a further object of the invention to provide a novel sealing means for the purpose referred to.

It is a further object to provide novel feeding means which will advance the material to the sealing and cutting means without placing strain upon the portion of the material under treatment.

Further objects will appear from the following description when read in connection with the accompanying drawings showing illustrative embodiments of the invention and wherein:

Figure 1 is a plan view of a machine of the invention;

Fig. 2 is a vertical section on line 2—2 of Figure 1;

Fig. 3 is a plan view of a strip of pouches with one wall of certain of the pouches broken away;

Fig. 4 is a detail transverse section of the heat plate for sealing the pouches;

Fig. 5 is a bottom plan view of the structure of Fig. 4;

Figs. 6 and 7 are plan views of presser plates carrying the cutting knives; and

Fig. 8 is a perspective view of a portion of a knife.

As shown, the device comprises a frame 10 having a drive pulley 11 belted by a belt 12 to a source of power not shown. The pulley 11 fast on the shaft 13 drives gear 14 in mesh with a gear 15 keyed to a cam shaft 16. Upon the cam shaft is a main cam 17 engaging roller 18 actuating link 19 and supported by arms 20 pivoted at 21 to the frame. The link 19 actuates toggle arms 22, 23 to cause reciprocation of block 24 carrying the presser plate and knives to be described. Upon shaft 16 is also shown a cam 25 actuating an arm 26 to cause reciprocation of the feed blocks 27, 28 which are linked together by links 29, 30. The material from which the pouches are to be formed is shown as supplied in rolls 31, 32 and webs from the respective rolls are led in superposed relation into the machine, the inner surface at least of the webs being of such a character that when heated and pressed together they will adhere.

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Heating for the purpose is shown as provided by a stationary heating head 33 which may be provided to receive steam or may be heated by electrical means, not shown. The heat transmitting plate 34 at the bottom of the head is shown as provided with metal bars 35 to contact the material only at the portions which it is desired shall be caused to adhere. The surface of the plate 34 between the bars 35 is shown as heat insulated by material 36 such as asbestos secured to the plate as by means of screws 37. The bars 35 may be removed and other bars differently spaced may be placed upon the heating head, screw holes 35' being provided for the purpose, to produce pouches of different sizes, the heat insulating material being correspondingly adjusted.

To press the pouch material against the heating bars 35 there are shown bars of compressible material 38 as of rubber carried by the reciprocating plate 24.

The assembly of the bars 38 and interspersed blocks 38' with a carrying plate is shown as locked into a form by means of quoin wedges 39 and the assembly of the bars with a supporting structure may be made up of units locked up in a chase by the quoins in a manner common in the printing art, whereby the manufacture of different sized pouches may be provided for with corresponding arrangements of the heat bars 35.

To cut the pouches apart along the center of the adhering localities there are shown knife bars 40 held between the compressible strips 38 and so arranged as to be flush or slightly below the surface of the compressible strips when the latter are not under pressure.

To leave the strips of pouches in assembled condition to assist in feeding the material to and away from the pressing elements, there are shown notches 41 in the cutting bars at which locations the pouches are not severed and are left in a strip from which individual pouches can be readily removed by tearing the uncut portions apart.

The cam 17 is shown as formed with an extended raised portion 42 to provide a dwell of the pressure against the pouch material of a predetermined interval of time, taking the speed of the machine into account, in order to give the adhesion required.

To return the arm 20 from pressing position there is shown a spring 43 anchored to the arm and to the frame at 44. The arm 26 between feed movements caused by cam 25 is returned in operation for a new stroke by means of a counterweight 45 and a flexible strip or cord 46 pass-

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ing over pulley 47 and connected to the block 27.

To feed material to the presser the blocks 27 are shown as connected by a rod 48 having dogs 49 pivoted thereon drawn against the material by springs 50 anchored to a rod 51. The blocks 28 are provided with a similar rod and spring pressed dogs, and it will be seen that upon the return stroke of the block 27, 28 the dogs will slide freely over the material while when pressed to the left in Fig. 2 they will feed the material a distance required to make a set of pouches.

In Fig. 3 the pouches are shown as united at adhered strips 52 and cut apart through the centers of the strips as at 53, 54 except at the small locations 55 corresponding to the notches 41 in the cutter bars.

The operation of the device will be clear from the above description.

Minor changes may be made in the physical embodiments of the invention within the scope of the appended claim without departing from the spirit of the invention.

I claim:

In a pouch making machine, in combination: a plurality of strips associated to form the geometrical outlines of a plurality of pouches; means to heat said strips; means to press a sheet, comprising a plurality of layers of material adherent when heated and each in the form of a

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continuous web, against said strips; means to at least partially sever the sheet along the center line of the adhered portions in the act of sealing the same; and means to intermittently feed said sheet between said heated strips and said pressing and severing means, comprising a rod extending over the web at the intake side of the pressing means and a second rod at the discharge side thereof; a plurality of dogs pivoted about said rods and spring pressed for pressure against the web; said dogs inclined in the direction of feed; means linking said rods together; and means to move said feed means synchronously in alternation with press movements.

HARRY W. LIGON.

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