

M. FISCHMAN.
MACHINE FOR FORMING SHOULDER PADS FOR GARMENTS.
APPLICATION FILED DEC. 4, 1911.

1,056,896.

Patented Mar. 25, 1913.

4 SHEETS—SHEET 1.

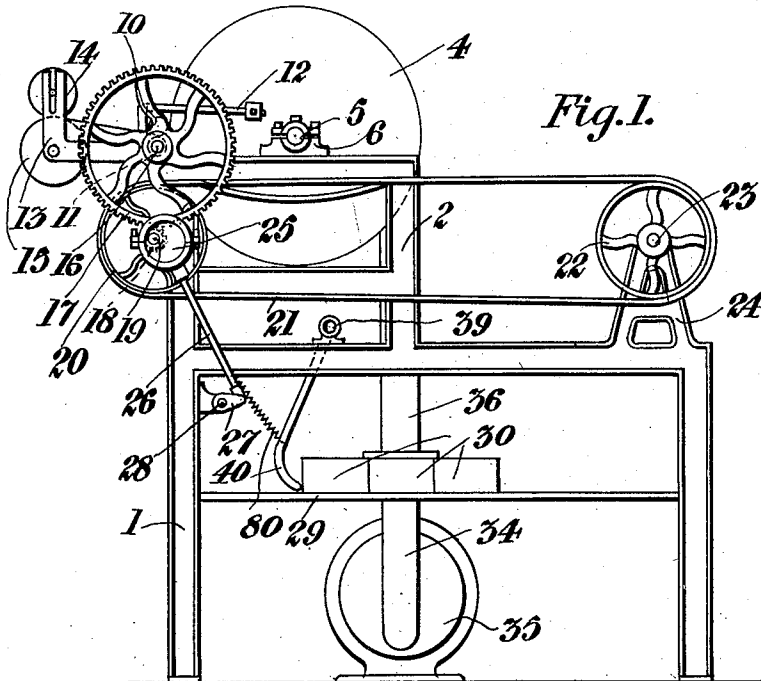


Fig. 1.

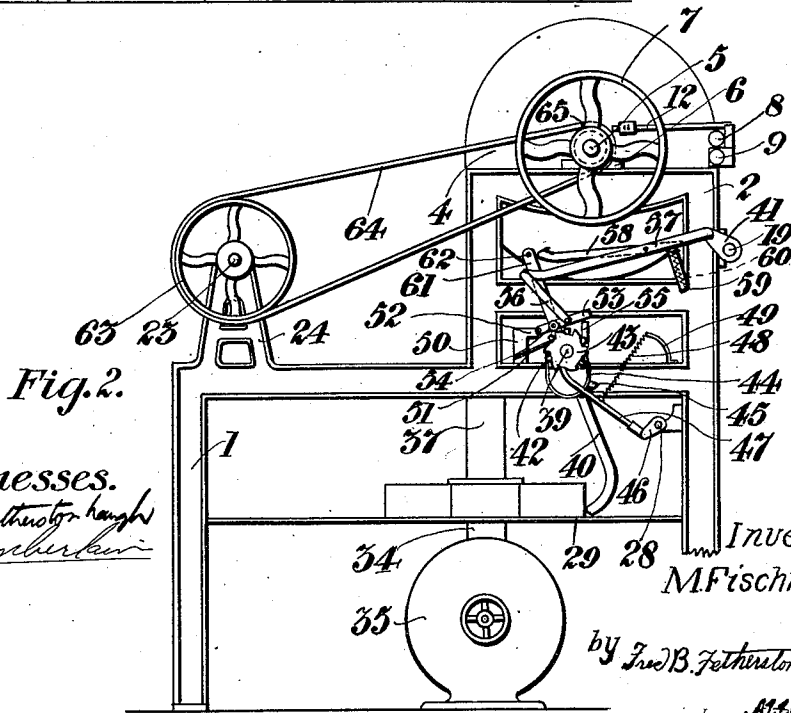


Fig. 2.

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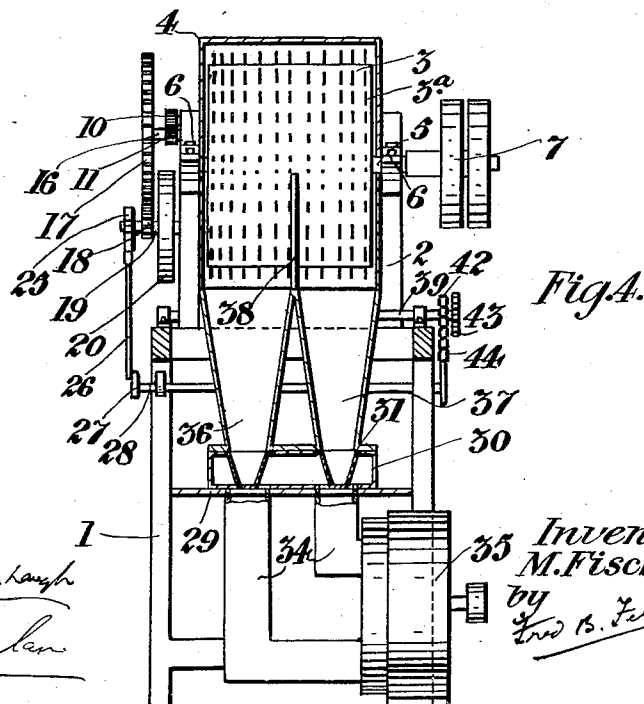
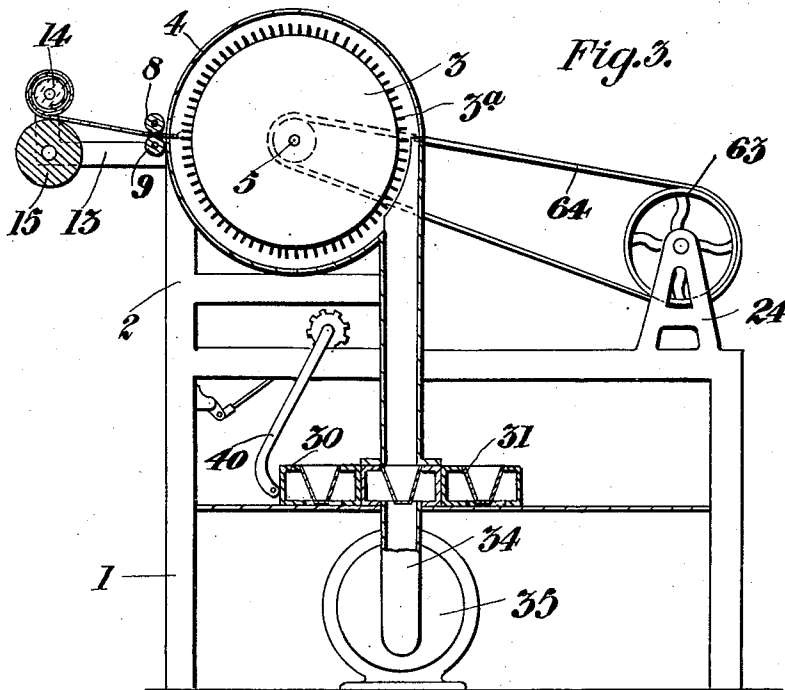
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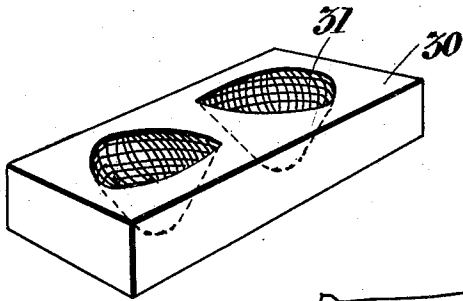


Fig. 7.

Fig. 5.

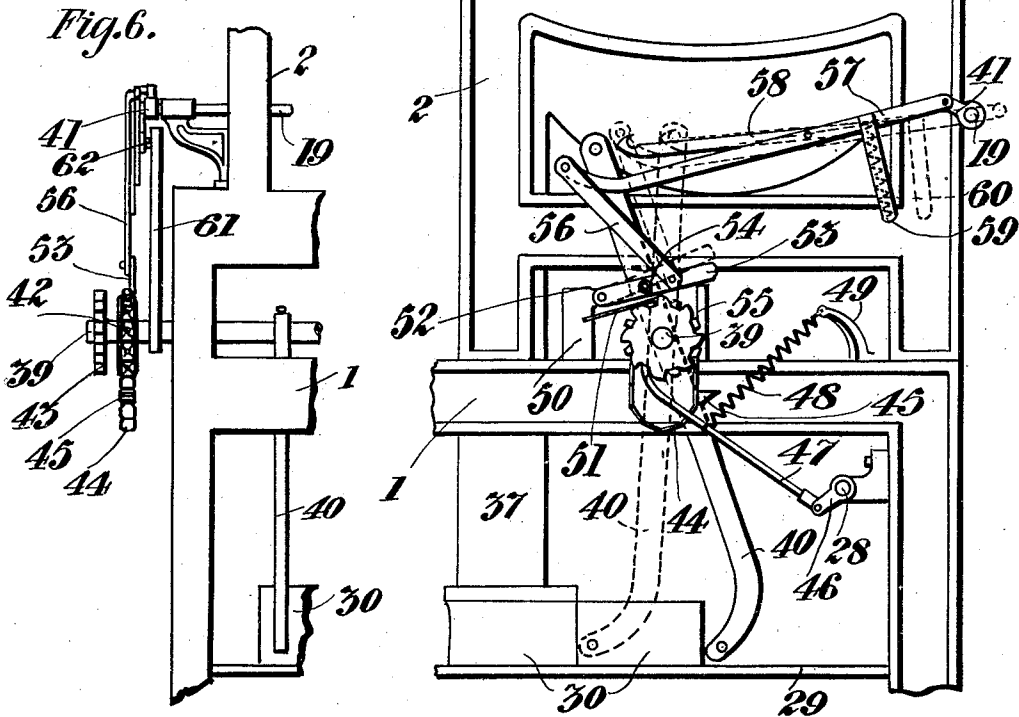
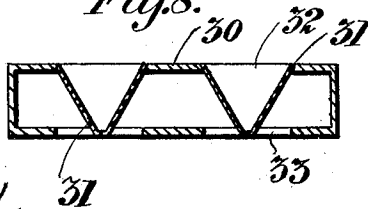


Fig. 8.



Witnesses.

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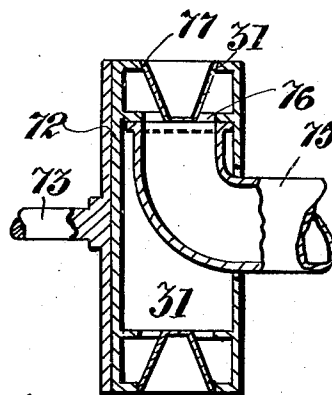
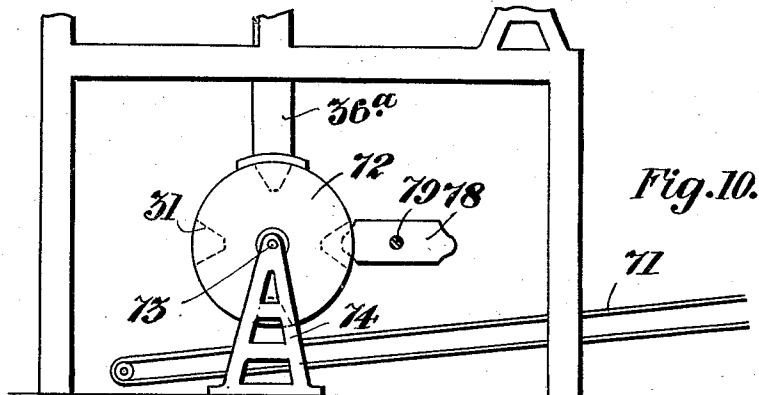
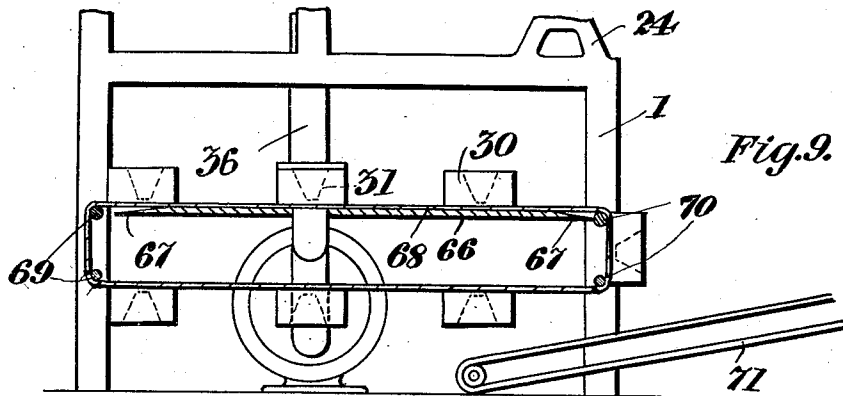
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

MAX FISCHMAN, OF TORONTO, ONTARIO, CANADA, ASSIGNOR OF ONE-THIRD TO ALEXANDER NELSON BURNS AND ONE-THIRD TO JOHN DAWSON MONTGOMERY, OF TORONTO, CANADA.

MACHINE FOR FORMING SHOULDER-PADS FOR GARMENTS.

1,056,896.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed December 4, 1911. Serial No. 663,909.

To all whom it may concern:

Be it known that I, MAX FISCHMAN, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Machines for Forming Shoulder-Pads for Garments, of which the following is the specification.

My invention relates to improvements in machines for forming shoulder pads for garments and the object of the invention is to devise a machine which will form the pads into shape instead of turning same out by hand as is now done.

The invention consists of dies for shaping the material, such as wool, of which the pads are made and means for feeding the material to the dies by suction all as hereinafter more particularly described, and illustrated in the drawings in which:—

Figure 1 represents an elevation of one side of the machine. Fig. 2, is an elevation of the other side of the same. Fig. 3, is a longitudinal vertical section thereof. Fig. 4, is a vertical cross-section of the machine. Fig. 5, is an enlarged side elevation of a portion of the die shifting mechanism shown in Fig. 2. Fig. 6, is an end view thereof. Fig. 7, is a perspective view of the box containing the dies. Fig. 8, is a longitudinal section thereof. Fig. 9 is a longitudinal section of a portion of the machine similar to Fig. 1 showing a modified form of mounting the die boxes, *i. e.*, upon an endless belt. Fig. 10, is a similar view of a second modification, showing the dies contained in a revolving drum. Fig. 11, is a section through the drum.

Like letters of reference indicate corresponding parts in each figure.

1 is a rectangular frame having a rectangular upper portion 2 formed above the same.

3 is a drum provided with a series of teeth 3^a extending around the periphery of the same.

4 is a case for containing the drum mounted in the portion 2 of the frame.

5 is a shaft extending through the drum and being provided with bearings 6 on the portion 2.

7 is a pulley connected to one end of the shaft and designed to be driven by a belt from a pulley on the main shafting.

8 and 9 are feed rollers having suitable gears 10 and 11 intermeshing, said gears being connected to one end of the rollers.

12 is a weighted lever for holding the rollers in engagement with one another.

13 is a bracket containing the roll of wool 14 or other material of which the pads are to be formed.

15 is a roller mounted below the roll of wool and designed to bear against same.

16 is a spindle formed on the end of the roller 9 and carrying the large gear 17 and designed to mesh with a pinion 18 keyed to a cross shaft 19 extending laterally of the portion 2 of the frame.

20 is a pulley mounted on one end of the shaft and connected by a belt 21 with a pulley 22 on a counter shaft 23 mounted on brackets 24 extending upwardly from the frame 1.

25 is an eccentric connected to shaft 19 and also connected by a rod 26 with a crank 27 on a cross shaft 28 extending laterally of the frame.

29 is a table upon which the boxes 30 containing the dies 31 are placed. The top and bottom of the boxes are provided with holes 32 and 33, the upper holes receiving the dies and the lower being designed to coincide with suction pipes 34 connected to a suction fan 35.

36 and 37 are pipes, the lower ends extending over the dies 31 and the upper ends connecting with the lower portion of the drum case 4.

38 is a partition in the drum case between the two pipes 36 and 37.

39 is a cross shaft mounted in suitable bearings on the frame 1 and having curved levers 40 connected thereto.

The end of the cross shaft 19 remote from the eccentric 25 is provided with a crank 41. The end of the cross shaft 39 (Fig. 2) has a sprocket 42, and a ratchet wheel 43, mounted loosely thereon. A chain 44 with a projecting lug 45 formed on one link is placed on the sprocket. The end of the cross shaft 28 is provided with a crank 46 to which an actuating rod or pawl 47 is secured.

48 is a spring, one end of which is secured to a bracket 49 and the other to the rod 47, said spring holding the rod in engagement with the ratchet wheel.

50 is a bracket connected to the frame and provided with a spring dog 51 designed to engage the teeth of the ratchet wheel 43. The upper end of the bracket 50 is provided with a lip 52 to which a lever 53 is pivotally connected. 54 is a roller on the lever for the purpose of limiting the upward movement of the spring dog 51.

55 is a vertical support for the end of the lever.

56 is a lever pivotally connected with the lever 53 and also with the end of a lever 57 which is pivotally connected to the crank 41.

58 is a hook pivoted to the lever 57.
59 is a bar formed on the lever 57 at right angles thereto and 60 is a spring connected to the bar and to the end of the hook 58 normally pulling one end of member 58 downwardly bringing the hooked end in position to resiliently engage beneath the pin 62 when the lever 57 is moved to the left.

61 is a lever secured to the cross shaft 39 and provided near its top with an outwardly extending pin 62.

63 is a pulley keyed to the shaft 23 and connected by the belt 64 to the pulley 65 on the drum shaft 5.

In the modification shown in Fig. 9 a table 66 with beveled ends 67 is used and the die boxes 30 are mounted on an endless belt 68 which revolves over rollers 69 and 70. 71 is an endless belt carrier which carries the formed pad deposited from the dies 31 to a suitable table (not shown).

In the modification shown in Figs. 10 and 11, 72 is a die drum having the dies 31 inserted therein and having a shaft 73 at one end designed to be held in a bracket 74, the die shaft being capable of being revolved in the bracket. The other end is open and a suction pipe 75 with an elbow is inserted therein, the end of the pipe coinciding with an aperture 76 in the drum. A suction pipe 76^a extends over the drum and coincides with apertures 77 into which the dies 31 are inserted. 78 is a device for pressing the wool into the die and is mounted on a suitable shaft 79.

The operation of the machine is as follows:—The roll of wool or other suitable material of which the shoulder pads are formed is mounted in the bracket 13 and is fed between the feed rollers 8 and 9 onto the toothed or picker drum 3, where it is picked or separated. It is then drawn down from the drum by the suction produced by the fan 35 in the pipes 36, 37 and 34 into the gauze die 31 which is situated between the pipes 36 and 37 and the pipes 34 connecting with the fan. The drum 3 is driven by a belt from the main shafting onto the pulley 7. The pulley 65 on the same shaft 5 also drives the counter shaft 23 through the belt 64 and pulley 63 which in turn drives the cross shaft 19 through the pulleys 22

and 20 connected by the belt 21. The pinion 18 on the shaft 19 drives the large gear 17 which drives the feed roller 9 directly and the feed roller 8 through the gears 10 and 11. The shaft 28 is also rotated from the shaft 19 by the eccentric 25 connected to the crank 27 on the shaft by the rod 26. This shaft 28 operates the pawl 47 which turns the ratchet wheel 43 and the sprocket 42 which is keyed thereto. Thus the chain 44 is revolved until the lug 45 engages the lever 53 raising same and raising the lever 57 which causes the hook 58 to come into engagement with the pin 62 on the lever 61. This takes place when the crank 41 is turned to the extreme left, and thus the crank revolving causes the lever 61 to be pulled to the right which turns the curved lever 40 forward moving another box 30 into position under the pipes 36 and 37. The hook then releases the lever 61 and a spring 60 pulls same back into the initial position.

In the modification shown in Fig. 9 an endless belt 68 is used which may be driven by any suitable means and suitable means is used for detaining the die boxes under the pipes 36 and 37 for a sufficient time to fill the dies to a requisite extent. The pads thus formed are turned out as the boxes are inverted and are carried by the carrier 71 to the operator's table. In the modification shown in Figs. 10 and 11 a circular die drum is used instead of the endless belt.

It is to be understood that the boxes or drum can be enlarged to contain any number of dies, the number only depending on the width of the picker drum 3 and the number of the pipes 36 and 37 and 34.

The advantages of my machine will be readily apparent.

The pads are formed by the machine instead of being done by hand as is now the case. This will materially decrease the cost of the pads as well as make them more uniform in size and thickness, as all the pads formed by the machine will be identical instead of varying as occurs when made by hand.

Many modifications may be made without departing from the spirit of the invention or the scope of the claims and the form shown is to be taken in an illustrative and not in a limiting sense. For instance, I do not confine myself to the mechanism for feeding the wool to the picker or for moving the die boxes as any suitable mechanism for these purposes will do equally as well.

What I claim as my invention is:

1. A machine for forming shoulder pads for garments comprising dies shaped to the form required and suction means for drawing the material into the dies as and for the purpose specified.

2. A machine for forming shoulder pads for garments comprising dies shaped to the

form required, feed rollers for the material, a picker drum, and suction means for drawing the material from the picker drum into the dies as and for the purpose specified.

5 3. A machine for forming shoulder pads for garments comprising dies contained in suitable boxes having apertures above and below the dies, a picker drum, feed rollers for feeding material to the picker drum, a
10 case surrounding the picker drum, pipes leading from the case, a suction fan, and pipes immediately below the aforesaid pipes connected to the suction fan, the die boxes being interposed between the aforesaid
15 pipes substantially as described.

4. A machine for forming shoulder pads for garments comprising a suitable frame, dies contained in suitable boxes, a roll having the material from which the pads are
20 made wound thereon, a bracket for supporting the roll, a revolving picker drum suitably driven, a cross shaft, a pinion on one end thereof, feed rollers having intermeshing gears at one end, a gear secured
25 to the lower roller and driven by the aforesaid pinion a suction fan, a case surrounding the picker drum, pipes leading from the case, and pipes immediately below the aforesaid pipes connected to the suction fan, the die boxes being interposed between the
30 the aforesaid pipes substantially as described.

5. A machine for forming shoulder pads for garments comprising a suitable frame, dies contained in suitable boxes, a roll having the material from which the pads are
35 made wound thereon, a bracket for supporting the roll, a revolving picker drum suitably driven, a cross shaft, a pinion on one end thereof, feed rollers having intermeshing gears at one end, a gear secured to the lower roller and driven by the afore-
40 said pinion, a case surrounding the picker drum, pipes leading from the case, a suction fan and pipes immediately below the afore-

said pipes connected to the suction fan, the 45 die boxes being interposed between the aforesaid pipes and means for bringing the die boxes between the pipes for filling and for moving them from between the pipes as and for the purpose specified. 50

6. A machine for forming shoulder pads for garments comprising a suitable frame, dies contained in suitable boxes, a roll having the material from which the pads are
55 made wound thereon, a bracket for supporting the roll, a revolving picker drum suitably driven, a cross shaft, a pinion on one end thereof, feed rollers having intermeshing gears at one end, a gear secured to the lower roller and driven by the afore- 60 said pinion, a case surrounding the picker drum, pipes leading from the case, a suction fan and pipes immediately below the aforesaid pipes connected to the suction fan, the die boxes being interposed between the 65 aforesaid pipes and automatic means for bringing the die boxes from between the pipes as and for the purpose specified.

7. In a machine for forming shoulder pads for garments, a die box, dies contained 70 therein, said box having upper and lower coinciding apertures, the dies fitting into the upper apertures and means for causing material to pass to and through said upper apertures as and for the purpose specified. 75

8. In a machine for forming shoulder pads for garments, a die box, dies of suitable wire gauze contained therein, said box having upper and lower coinciding apertures, the dies fitting into the upper apertures and 80 means for causing material to pass to and through said upper apertures as and for the purpose specified.

MAX FISCHMAN.

Witnesses:

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