Oct. 5, 1937. W. E. AESCHBACH 2,094,866

CLOTH FOLDING ATTACHMENT

Filed April 17, 1936 2 Sheets-Sheet 1

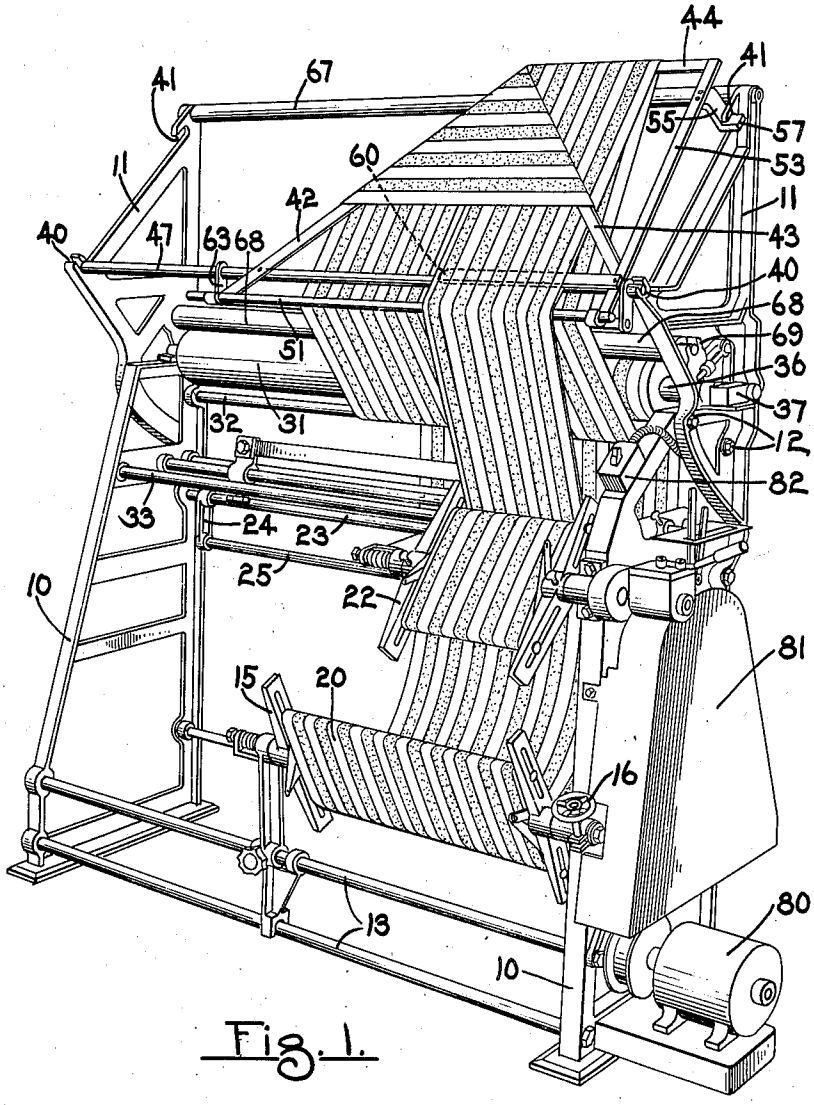


Fig. 1.

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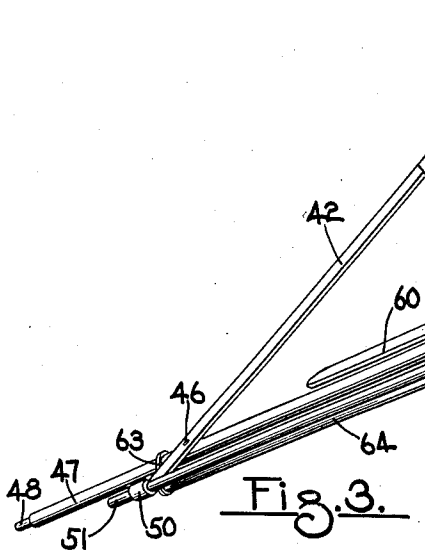


Fig. 3.

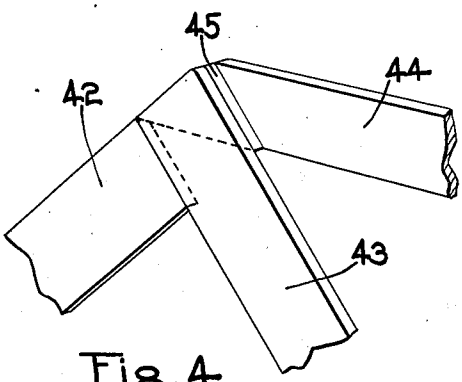


Fig. 4.

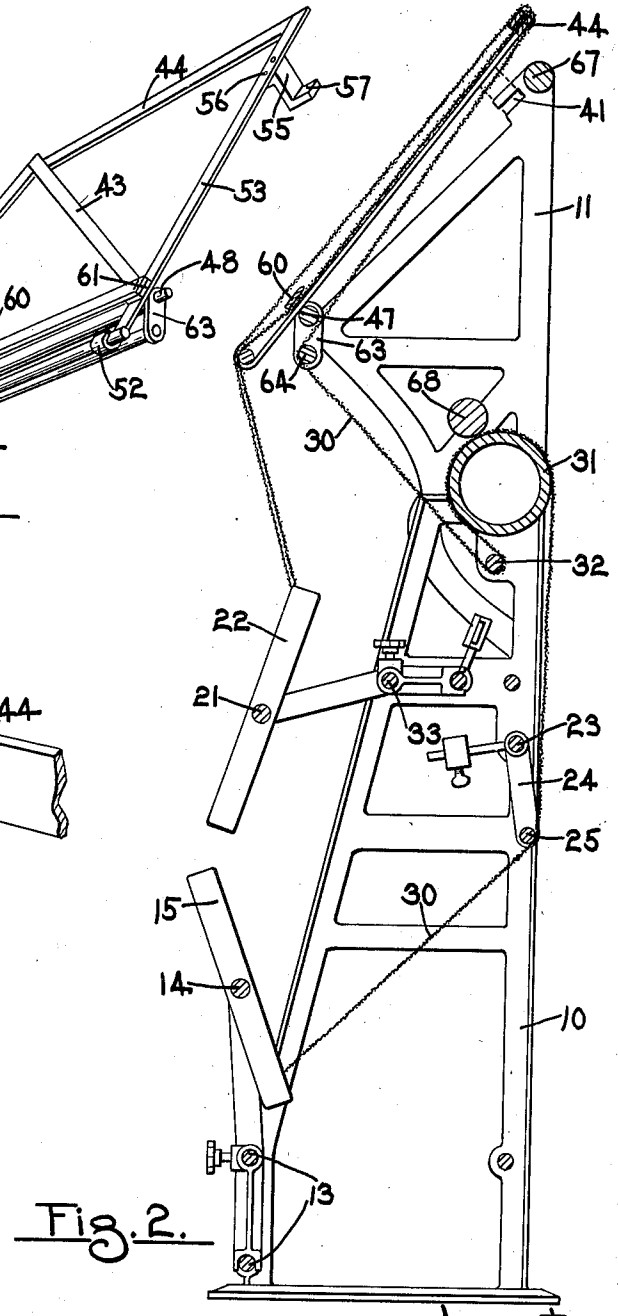


Fig. 2.

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2,094,866

UNITED STATES PATENT OFFICE

2,094,866

CLOTH FOLDING ATTACHMENT

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Application April 17, 1936, Serial No. 74,860

6 Claims. (Cl. 270—86)

This invention relates to a cloth folding machine. Also, the invention contemplates the unwrapping, measuring and rewrapping mechanism combined together in the same machine whereby an exceedingly compact mechanism is obtained.

One main feature of my device resides in the novel positioning of the unwrapping and rewrapping mechanisms with respect to the other functioning units whereby expediency of operation will be obtained. Furthermore, my invention includes the novel cloth folding mechanism, which is readily substituted for the examining board, these two units being quickly interchangeable whereby the machine may serve several distinct functions.

Other advantages will become apparent as the description proceeds.

In the drawings:

Fig. 1 is a perspective view of my improved unit, the folding attachment being detachably mounted thereon.

Fig. 2 is a sectional view taken vertically through the machine.

Fig. 3 is a perspective view of the cloth folding attachment.

Fig. 4 is an enlarged fragmentary perspective showing the juncture of the several folding bars.

Similar numerals refer to similar parts throughout the several views.

As clearly shown in Fig. 1, lower side frames 10, of right and lefthand construction, carry the upper side frames 11, bolted thereto at 12. Suitable cross bars 13 extend between the lower frames 10 to maintain them in parallel position.

As shown in Fig. 2, a shaft 14 carries the bolt supporting mechanism 15. The shaft 14 is frictionally regulated in its rotative movement by means of the mechanism 16. See Fig. 1. The bolt of cloth 20, see Fig. 1, of flat or round shape, is positioned upon the mechanism 15.

Located above and parallelly to the shaft 14 is a shaft 21 which carries bolt holding means 22, similar to the mechanism 15, and the cloth terminates its movement by winding around this shaft.

Referring to Fig. 2, numeral 23 indicates a shaft on which links 24 depend. These links 24 carry an idler bar 25 around which the cloth 30 passes. The gravitational effect of this counterbalanced bar 25 maintains the cloth 30 more or less taut to insure its proper movement through the machine.

A roller 31 is supported between the frames 10 and the cloth passes over this relatively large roller and then downwardly behind a roller 32, extending between the frame members. The roller 31 is mounted on a shaft 36 which operates the measuring mechanism 37. It will be understood that the cloth 30 contacts a relatively large portion of the periphery of the roller 31 and thus this roller is driven with no slippage, thus insuring an accurate measurement of the cloth.

The upper frame members 11 are provided with upwardly extending U-shaped sockets 40 and open ended sockets 41. See Fig. 1. The sockets 40 receive the ends of the upper shaft of the examining board. (Not illustrated).

One of the features of this invention resides in the particular cloth folding attachment as now to be explained. The folding bars 42, 43 and 44 are joined together as clearly shown in Fig. 4, that is, the bars 42 and 43 are in the same plane whereas the bar 44 is spaced therefrom by means of the filler block 45. The bar 42 extends downwardly, see Fig. 3, and is connected at 46 onto the cross shaft 47 having reduced ends 48 which are receivable in the U-shaped sockets 40. The bar 42 is curved upwardly at 50 to receive a cross member 51, the other end of this cross member 51 lying in the curved end 52 of a bar 53. The bar 53 is attached at the end of the bar 44, and carries a Z-shaped bracket 55 fastened thereto at 56. See Fig. 3. The lower flange 57 of the Z bar 55 is slidably receivable in the upper slot 41 as clearly shown in Fig. 1.

A cantilever bar 60 is attached to the bar 53 with a spacing block 61 therebetween.

The cross shaft 47 carries links 63 which in turn carry the roller 64, as shown in Fig. 2. The cloth, during the process of being folded, passes upwardly over the roller 64 and this roller 64 is free to swing about the shaft 47 on the depending links 63.

Below the measuring roller 31 is provided an idler bar 33, this idler bar being controlled by the action of gravity similarly to the bar 25.

If the machine is being utilized with the examining board substituted for the folding device then the cloth is threaded directly from the large roller 31 to underneath the idler bar 33 and it then passes upwardly from the bar 33 to the outside of the roller 67. The idler cross member 68, see Fig. 2, rests in sockets 69 and holds the cloth against the roller 31. Also, this roller 68 prevents inadvertent contact under these conditions between the large roller 31 and the cloth 30. That is, whenever the examining board is being used, the cloth passes upwardly

from the bar 33 to the roller 67 and the roller 68, rotating under frictional contact with the large roller 31, contacts the cloth more or less and aids in this movement.

The cloth 30, when being folded, passes upwardly over the bar 44 and the bar 42, which bar 42 extends at 45° to the prolonged extension of the bar 44, and this causes the initial folding action. The bar 43 is likewise positioned at 45° to the bar 44 and at 90° to the bar 42. The cantilever member 60, shown in dotted lines in Fig. 1, extends between the folded cloth and straightens out any irregularities therein.

The cloth next passes downwardly to its wrapping mechanism, which is operated through reduction gearing concealed under the housing 81, by the electric motor 80. The motor is operated by the switch 82.

From the above it will be seen that my machine is compact, easy to operate and positive in action. When used to examine the cloth the cloth is not brought to a position underneath the examining board as it is when the same is being folded. This eliminates friction and makes for a smoother running machine. When the cloth is being folded, it is necessary that the cloth be threaded around the depending roller 64 and then turned through approximately 180° so as to give perfect folding operation.

The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. In a machine of the class described having a spaced pair of upwardly extending U-shaped sockets in the same plane and a downwardly extending slot thereabove, the combination of, a cloth folding attachment having a frame including a shaft having extending ends, said ends fitting into the pair of sockets, said frame also including an extension receivable in the downwardly extending slot.

2. A combination as recited in claim 1 in which said attachment includes a pair of swinging links depending from said shaft and a guiding member extending between the links for the purpose described.

3. In combination, a main supporting frame, means for revolubly supporting a bolt of cloth near the bottom thereof, a relatively large measuring roll thereabove, means for guiding the cloth from the bolt around the top of the roll for a minimum of 180 degrees, a gravity roll riding against the cloth at the top of the roll, folding mechanism, and means for guiding the cloth from the measuring roll through the folding means.

4. In a sub-frame having a cloth unwinding mechanism, means for supporting the same, a cloth winding mechanism, means for supporting the same, a series of rollers over which the cloth travels during its movement from the cloth unwinding mechanism to the cloth winding mechanism, said series including a relatively large roller positioned near the top of the sub-frame, a smaller roller positioned therebelow, an idler bar positioned below both of the aforesaid rollers and to one side thereof and a second smaller roller located near the top of the sub-frame, said sub-frame having a spaced pair of sockets and a slot, the combination of, a folding attachment consisting of a frame including a shaft having ends, said ends fitting into said pair of sockets, said frame also including an extension receivable in the said slot, said cloth normally passing around and over the first mentioned large roller and underneath the second mentioned roller and then being threaded through the cloth folding attachment, said cloth at other times being threaded similarly over the large roller but not under the second smaller roller, instead being threaded under the said bar, the position of the bar and the position of the second smaller roller at the top of the sub-frame being more or less in alinement with the large roller and means for preventing contact between the cloth and the said large roller.

5. A combination of elements as set forth in claim 4 in which the last mentioned means includes a gravity mounted roller which rolls against the said larger roller.

6. The combination of elements as set forth in claim 4 which includes a measuring device located on the axis of the said larger roller and a gravity mounted roller riding against the cloth to hold it snugly against the said larger roller, said gravity means also preventing contact between the cloth, when it is moving directly between the idler bar and the second smaller roller, from contacting the surface of the said larger roller.

WALTER E. AESCHBACH.