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CONTINUOUS PROCESS PICKING MACHINE

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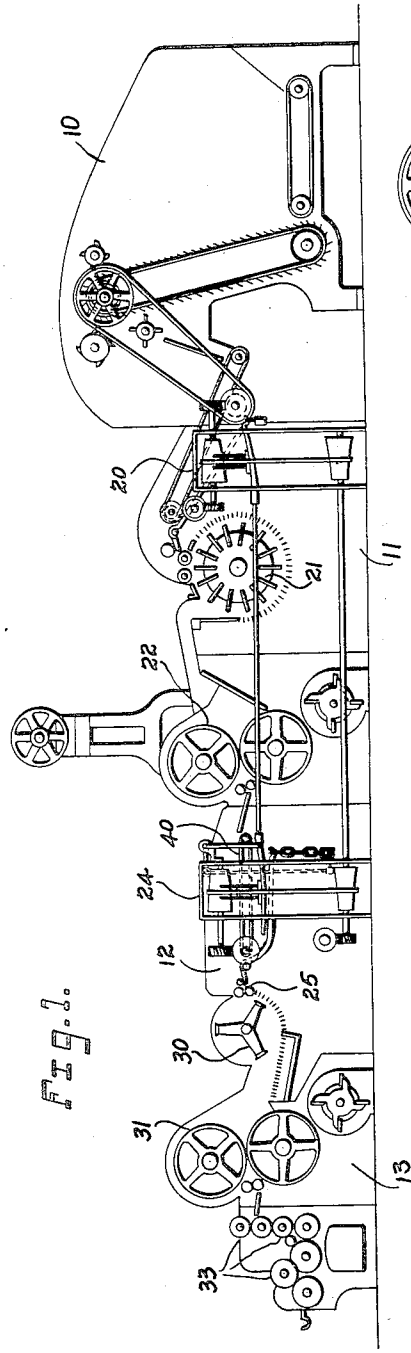


Fig. 1.

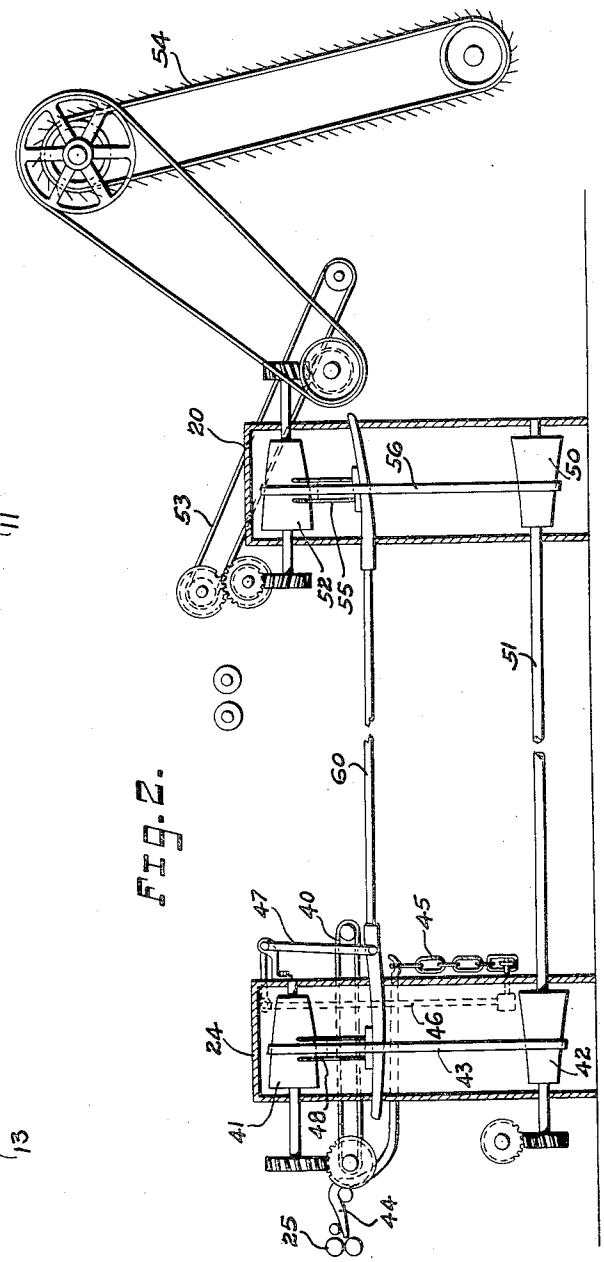


Fig. 2.

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CONTINUOUS PROCESS PICKING MACHINE

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2 Claims. (Cl. 19—70)

This invention relates to mechanism for preparing a lap of wool, cotton or other textile fabrics by a continuous two-step process. A two-step picking machine has been previously used in which an intermediate hopper feed was utilized between the first and second picking operations, thus destroying the continuity of the partially formed bat between the two picking operations.

It is the object of my invention to simplify and improve this prior machine by providing a continuous two-step picking mechanism so constructed that the partially formed bat of fibre is fed continuously from the preliminary picking mechanism to the finishing picking mechanism.

Another feature of the invention relates to simultaneous control of the conveying devices which feed the two picking mechanisms of the machine and more specifically to the control of both conveying devices from the feeding mechanism of the finishing picking mechanism.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawing, in which

Fig. 1 is a side elevation of my improved machine; and

Fig. 2 is an enlarged sectional side elevation of certain conveying and evener mechanisms.

Referring to the drawing, I have shown a continuous process picking machine comprising a feeder 10, a preliminary picking mechanism 11, an intermediate feeding mechanism 12, and a finishing picking mechanism 13. The feeder 10 is of a usual commercial construction and comprises a hopper to which cotton is delivered from any suitable opening mechanism.

The cotton is carried from the feeder 10 to a conveying device 20 and is thereby delivered to a beater 21 forming a part of the preliminary picking mechanism 11. From the beater 21 the cotton is delivered to the cage roll section 22 of the preliminary picking mechanism 11 and then passes through the intermediate feeding mechanism 12, which includes a second conveying and evening device 24, to the feed rolls 25 of the second or finishing picking mechanism.

This finishing picking mechanism comprises a beater 30, a cage roll section 31, and a series of rolls 33 by which the lap is formed in a cylindrical roll.

In Fig. 2 I have indicated the operation of the conveying and feeding devices 20 and 24. The speed of the feeding apron 40 of the device 24 is controlled by upper and lower cone pulleys 41 and 42 and a shiftable belt 43. The lower cone pulley is continuously driven at a fixed rate of speed and the position of the belt 43 is determined by the pressure or thickness of the cotton acting upon a series of fingers or levers 44. These levers act through a chain connection 45 and bell crank connections 46 and 47 to move the shipper fingers 48 axially of the cone pulleys 41 and 42, thus varying the speed of the conveyer apron 40 in accordance with the pressure of the cotton on the fingers 44. The details of construction of this evener device need not be further described, as the device is of a well-known commercial form.

The conveying device 20 is of similar construction and comprises a lower cone pulley 50 mounted on the shaft 51 which also supports and drives the lower cone pulley 42. An upper cone pulley 52 is connected to drive the upwardly inclined conveyer apron 53 which feeds the first beater 21. This upper cone pulley 52 is also connected to control the rate of movement of the conveyer 54 by which the cotton is removed from the feeder 10. Shipper fingers 55 control the movement of a belt 56 connecting the cone pulleys 50 and 52 and the fingers 55 are directly connected to the fingers 48, previously described, by a longitudinally extending rod 60.

With this construction, it will be apparent that the rate of movement of the conveyer apron 40 is directly controlled from the fingers 44 adjacent the fed rolls 25 of the finishing picking mechanism and it will be further apparent that the rate of movement of the conveying aprons 53 and 54 are simultaneously controlled and that their rates of movement increase or decrease in direct proportion to the increase or decrease of the rate of movement of the feeding apron 40.

It will thus be apparent that the operation of the feeder 10 and the rate of feed of the fibre to both the preliminary and finishing picking mechanisms is all directly controlled by the thickness of the fibre as it is delivered to the feed rolls 25 of the finishing picking mechanism.

The fibre thus achieves a continuous passage through the machine and the bat of fibre is not destroyed by being fed into an intermediate hopper between the preliminary and finishing picking operations as has been heretofore customary. The machine is substantially simplified and is found to deliver a lap of very satisfactory uniformity, both as to weight and thickness.

Having thus described my invention and the

advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:—

1. A continuous process picking machine comprising a first picking mechanism, a second picking mechanism, a separate conveying and feeding mechanism for each picking mechanism, common driving means for said two conveying and feeding mechanisms, a separate speed-varying device in each conveying and feeding mechanism, and a single control device effective to simultaneously adjust the speed-varying devices of both conveying and feeding mechanisms, whereby said two conveying and feeding mechanisms are operated at all times in a predetermined speed relation.

2. A continuous process picking machine comprising a first picking mechanism, a second picking mechanism, a separate conveying and feeding mechanism for each picking mechanism, common driving means for said two conveying and feeding mechanisms, a separate speed-varying device in each conveying and feeding mechanism, and a single control device effective to simultaneously and equally adjust the speed-varying devices of both conveying and feeding mechanisms, thereby establishing a predetermined speed relation between said conveying and feeding mechanisms which relation is maintained during all collective speed adjustments of said conveying and feeding mechanisms.

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