Jan. 31, 1928. 1,657,980

E. A. TURNER

MACHINE FOR CLEANING AND BLENDING STOCK

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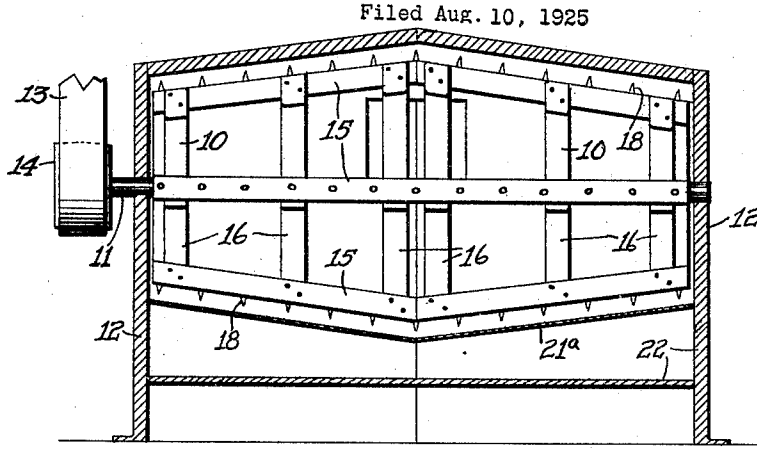


Fig. 1

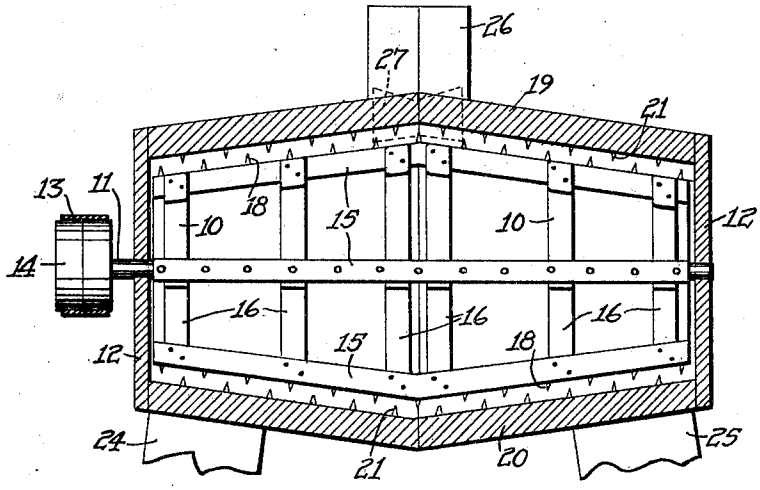


Fig. 2

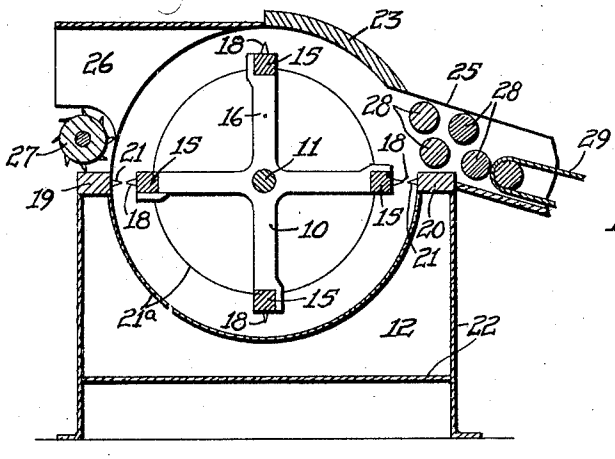


Fig. 3

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UNITED STATES PATENT OFFICE.

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MACHINE FOR CLEANING AND BLENDING STOCK.

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This invention relates to a machine for cleaning and mixing or blending stock such as cotton, wool or other fiber, this being an essential preliminary operation in the manufacture of yarn and other textile products.

It is the object of my invention to provide a machine which will receive supplies of stock or fiber from two different sources, thereafter opening and cleaning the stock, and advancing the two different portions thereof toward a common blending zone where they are thoroughly mixed and intermingled to form a perfect blend and from which point they are discharged from the machine.

In the preferred embodiment of my invention I provide a rotating member having oppositely disposed cone-shaped portions which receive supplies of fiber at their outer and smaller ends, and which automatically advance the fiber toward the longitudinal center of the rotating member, at which point the two portions of fiber are blended and thereafter discharged from the machine.

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 drawings, in which

Fig. 1 is a sectional front elevation of my improved machine;

Fig. 2 is a sectional plan view thereof, and

Fig. 3 is a sectional end view.

Referring to the drawings, I have shown a rotating member 10 fixed to a shaft 11 which rotates in bearings in a rigid frame 12. The member 10 may be driven by a belt 13 running over a pulley 14 fixed to the end of the shaft 11 or may be rotated in any other suitable and convenient manner.

The outer portion of the rotating member 10 is formed by longitudinally extended bars or lags 15 which are shown as being four in number, but which may be increased in number when desired. These lags 15 are supported upon spiders 16 secured to the shaft 11 and are so formed that their portions adjacent the center of the machine rotate at a greater radius than the end portions of the lags. The lags thus outline a rotating member having reversed conical portions with the larger ends thereof adjacent.

These bars or lags 15 are provided with a large number of teeth 18 and rotate adjacent fixed bars 19 and 20 similarly provided with teeth 21. The opposite ends of the bars 20 are angularly disposed, corresponding to the angle of the lags 15.

A perforated screen 21ª extends below the rotating member 10 between the bars 19 and 20 and assists in cleaning the fiber by permitting dirt and grit to fall through the screen and accumulate in the bottom of the casing 22.

A solid cover 23 is provided for the upper portion of the machine, this cover 23 being curved to correspond with the surface generated by the rotation of the lags 15. Inlet openings 24 and 25 are provided near the opposite ends of the machine and an outlet or discharge opening 26 is provided at the opposite side near the center of the machine.

A small clearer or stripper roll 27 may be mounted adjacent the discharge opening 26 for a purpose to be described. Feed rolls 28 and a feeding conveyor 29 may also be provided for each feed opening 24 or 25.

Having described the construction of my improved cleaning and blending machine, the method of operation is as follows: Two different supplies of stock or fiber are provided, one for the feed opening 24 and another for the feed opening 25. These two stocks may be of different materials or may be the same material but of different colors, or may be otherwise selected as may be desired.

The stock is presented to the rapidly rotating member 10 by the conveyor 29 and feed rolls 28 or in any other convenient manner and is seized by the teeth 18 and carried rapidly past the fixed teeth 21. The stock is thus fully opened out and cleaned and the dirt and grit therein is largely discharged through the screen 21ª.

The fiber naturally works toward the larger diameter at the middle portion of the machine, being advanced thereto by centrifugal force, and the two supplies of fiber eventually meet near the longitudinal center and are effectively mixed and intermingled. After such mixing, and blending, the fiber

is discharged through the opening 26, being removed from the rotating member 10 by the stripping roll 27 or in any other convenient manner.

It will be seen that I have thus provided a machine in which two different supplies of stock may be simultaneously opened and cleaned and in which effective mixing and blending of the stock is followed by the delivery thereof to the discharge opening of the machine.

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 fibre cleaning and blending machine, comprising a double frustro-conical frame and means to rotate the same, said frame being composed of a shaft, radial arms secured thereto and lags secured to the outer ends of said arms and running at an angle to the shaft so that the center of the frame is of greater diameter than the ends thereof, and teeth on the outer sides of said lags; a screen surrounding the lower half of said frame, a casing surrounding the upper half of the same, teeth on the inside of said casing in the axial plane of said shaft, inlets for material in the ends of said casing and an outlet in the center thereof for the blended material.

2. A fibre cleaning and blending machine, comprising a rotary skeleton frame tapered towards its ends and having teeth on its periphery, a framework supporting said frame and having inwardly projecting teeth in the axial plane of said frame, a screen surrounding the lower half of said frame, a casing surrounding the upper half of the same, inlets for material near the ends of said casing, and an outlet from the center thereof.

In testimony whereof I have hereunto affixed my signature.

ELDON A. TURNER.