May 16, 1933. H. R. WILLIAMS 1,909,083

METHOD AND APPARATUS FOR PREPARING WOOD PULP FOR CARDING

Original Filed Nov. 8, 1928

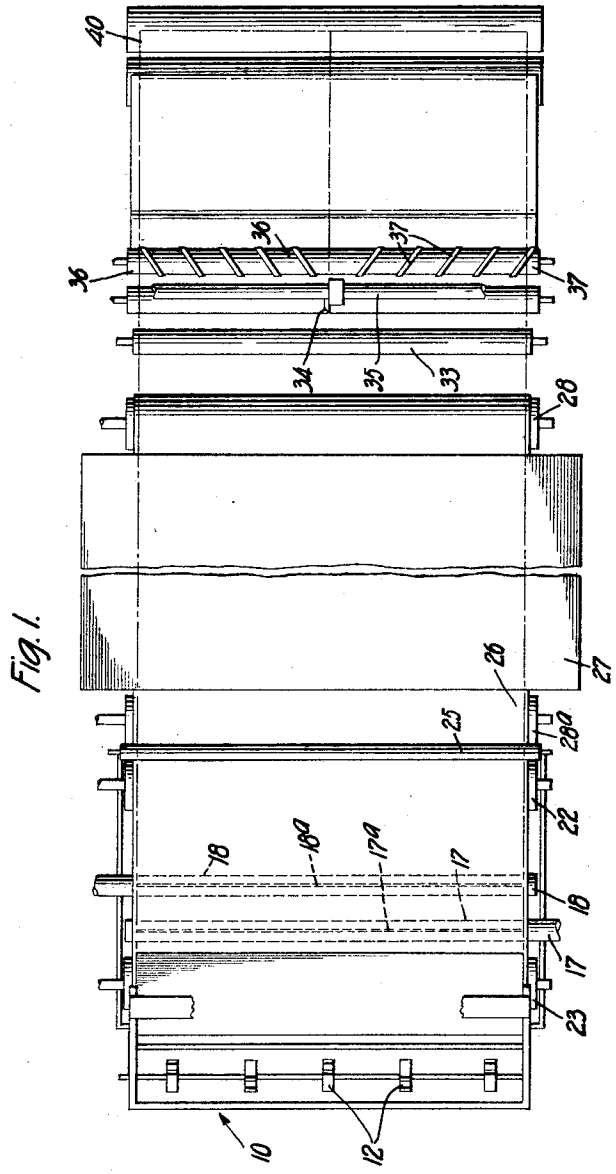


Fig. 1.

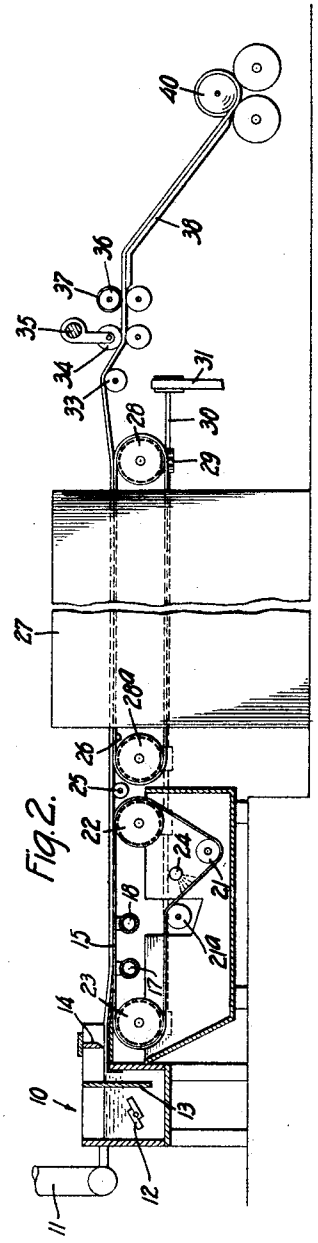


Fig. 2.

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Patented May 16, 1933 1,909,083

UNITED STATES PATENT OFFICE

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METHOD AND APPARATUS FOR PREPARING WOOD PULP FOR CARDING

Application filed November 8, 1928, Serial No. 317,994. Renewed August 15, 1932.

The present invention relates to a method of forming a felt of wood pulp suitable when carded for a variety of purposes, but particularly for use in the manufacture of sanitary napkins. An important object of the invention is to accomplish the formation of the web of the pulp material without the use of pressure rollers in any way whereby a maximum of fluffiness of the web results while producing a web having a tensile strength sufficient to be handled in the machine.

In performing my invention according to its preferred embodiment, I first form a suspension of the finely disintegrated, digested pulp fiber in water, feed same out onto a traveling belt, and remove the moisture from same by means of narrow suction slots transversely disposed beneath the belt and dry the web thus formed all without the use of pressure rollers.

In the drawing accompanying this specification and forming a part thereof,

I have shown in Figure 1 a plan view of a machine for carrying out the method as described in the foregoing, and,

In Figure 2 I have shown a side elevation of said machine.

The material with which the invention is particularly concerned is digested wood pulp which as received from the manufacturer is commonly in hard, highly compacted form. Accordingly, the first step is to disintegrate this hard material by means, which per se form no part of the present invention, and form from this disintegrated pulp a suspension thereof in water.

Referring now in detail to the drawing for further description of the process, 10 denotes a hopper into which the digested wood pulp and water mixture is fed through a pipe 11, the beater 12 serving to prevent the settling out of the heavier particles. The pulp then passes beneath a partition 13 and under a wier 14 onto the traveling belt 15, which is formed of the usual screen material, and technically known as a "wire".

Having thus spread out the pulp mixture on the screen, the same then passes over a pair of suction boxes 17, 18, which, as shown in Figure 1 are provided with relatively very narrow suction slits 17*a*, 18*a*, such boxes being provided with a comparatively strong suction. The function of these boxes is to remove the water by a rather powerful suction action without compacting the formed felt except to a minimum degree. The belt or wire 15, conveys the pulp as far as the roller 22 around which it passes, and thence over guide rolls 21, 21*a* back to roll 23, such belt being subjected to the cleansing action of a spray 24 during its return travel.

The felt which now passes over a supporting roll 25 is conveyed by a second belt 26 through a drying way 27, belt 26 passing around the rollers 28, 28*a* roll 28 being driven by means of a worm 29, a shaft 30 and belt 31.

The now dried felt passes over a guide roll 33, and in the embodiment shown, beneath a knife 34 suspended from a supporting rod 35, such knife serving to cut the felt longitudinally, as shown by the dotted line in Figure 1. For the purpose of keeping the sheets formed from buckling toward the middle, and facilitating the action of the knife 34, a feed roll 36 having corrugations 37 which are directed outwardly with respect to the center is provided. After passing this roll, the pulp strips pass over a table 38 and are wound up in a roll 40.

Various changes may be made in the construction described in the foregoing without departing from the spirit of my invention or the scope of the appended claims.

I claim:

1. The method of preparing wood pulp for carding which consists in first forming a suspension of the disintegrated digested wood pulp in water, flowing the suspension upon a foraminous travelling belt, removing the excess of moisture in said pulp by applying a comparatively strong suction over a narrow area extending the width of the band of felt formed, thereby subjecting a small area of the pulp to a strong suction and rendering pressure rollers unnecessary, and then drying the pulp.

2. The method of preparing wood pulp for carding which consists in first forming a suspension of the disintegrated digested wood

pulp in water, flowing the suspension upon a foraminous travelling belt, removing the excess of moisture in said pulp by applying a comparatively strong suction over a narrow area extending the width of the band of felt formed, thereby subjecting a small area of the pulp to a strong suction and rendering pressure rollers unnecessary, then drying the pulp, severing the band of felt in a longitudinal direction and applying pressure in an outward direction upon each severed strip while feeding same away from the point of severance.

In testimony whereof I have affixed my signature to this specification.

HARRISON R. WILLIAMS.