

Aug. 23, 1938.

N. J. NIKS

2,127,698

PAPER MAKING MACHINE

Filed Aug. 26, 1936

2 Sheets-Sheet 1

Fig. 1.

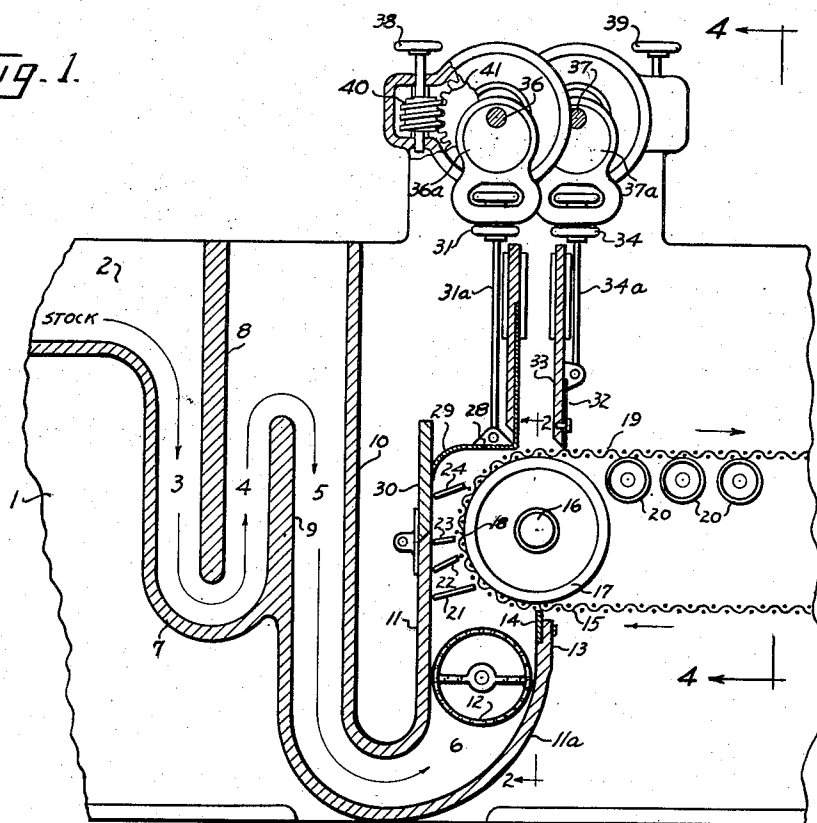


Fig. 2.

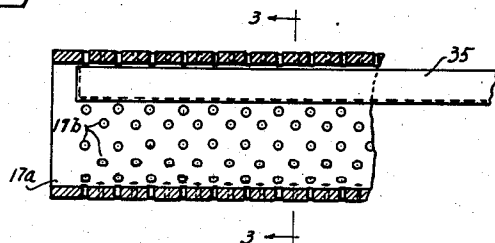
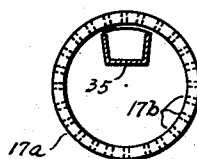


Fig. 3.



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Fig. 4.

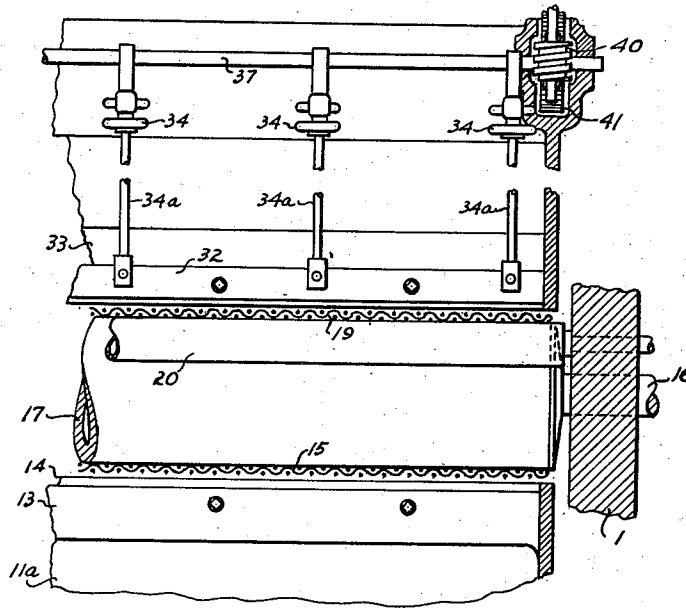
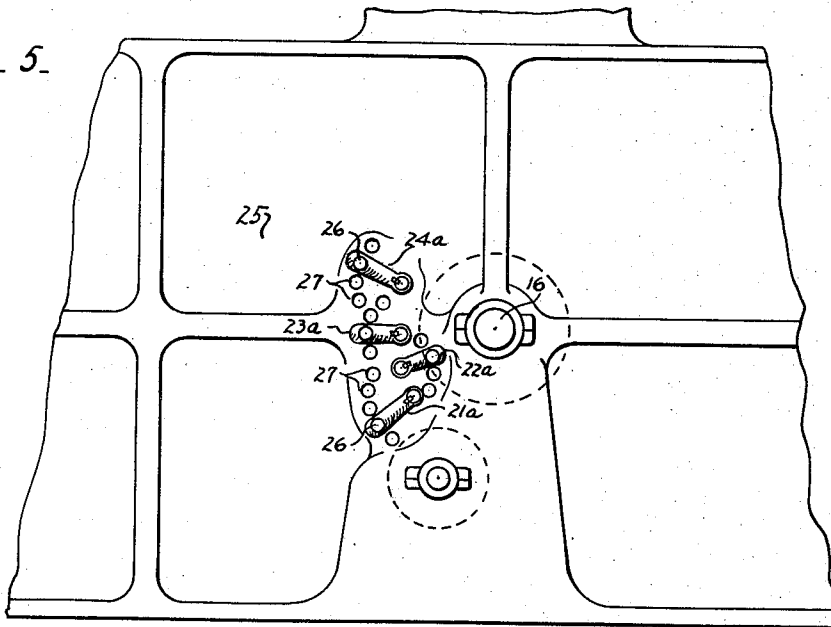


Fig. 5.



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PAPER MAKING MACHINE

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Application August 26, 1936, Serial No. 97,969

5 Claims. (Cl. 92-44)

My invention relates to a Fourdrinier type paper machine and in particular to the construction and operation of the slices thereof.

The main object of my invention is to form a sheet of paper on the wire of the Fourdrinier machine coming in contact with the outer periphery of the breast roll and controlled by means of a series of slices adjacent the vertical portion of the wire passing over the roll.

It is the object of my invention that the formation of the paper and the removal of water therefrom be started at once as soon as the stock and water come into contact with the wire.

It is a further object that the stock is fed to the head box at any pressure desired and passes through channels and through a perforated roll, and thence to the wire where the formation starts, and thereafter it passes under a series of adjustable slices. This construction allows more water to be used in making the sheet and consequently gives a better paper formation.

It is a further object to provide a construction in which the amount of water removal may be regulated by the use of a plain or perforated breast roll or by the use of a vacuum breast roll. In the event of using a plain roll, no water removal is effected until the wire has passed the upper center line of the breast roll, but the formation starts at the apron.

It is a further object of the invention to provide such an arrangement either with or without a shaker.

Referring to the drawings:

Figure 1 is a vertical section through one end of the stock box showing the position of the slices, the wire and the breast roll.

Figure 2 is a section on the line 2-2 of Figure 1 illustrating the perforated breast roll and a vacuum box.

Figure 3 is a section on the line 3-3 of Figure 2.

Figure 4 is a section on the line 4-4 of Figure 1 looking in the direction of the arrows.

Figure 5 is an outside elevation of the stock box showing the adjusting handles for the slices adjacent the vertical portion of the wire as it passes over the breast roll.

Referring to the drawings in detail, 1 is a stock box provided with a stock chamber 2 which communicates with a tortuous passageway having portions 3, 4, 5 and 6. These portions are formed by the guide partitions 7, 8, 9, 10, 11 and 11a.

In the final passageway 6 is mounted a perforated roll 12. The lip 13 is provided with an apron 14 which engages yieldingly with the bot-

tom of the wire 15. This apron is on an axis with the center 16 of the breast roll 17. The wire 15 passes between the apron 14 and the breast roll 17 and thence vertically as at 18 and then horizontally outwardly at 19 over the tube rollers 20. The wire is traveling in the direction of the arrow.

Adjacent the face of the roll where the wire is moving at 18 in a generally vertical direction, there is a plurality of adjustable slices 21, 22, 23 and 24 that are adjusted by the levers 21a, 22a, 23a and 24a on the outside of the side wall of the stock box at 25. As these levers have pins 26 for insertion in a plurality of holes 27, the slices 21 to 24 inclusive can be adjusted in any position for the purpose hereinbefore described.

The slice 28 which is curved as at 29 and which engages with the hinge portion 30 of the partition 11 can be vertically adjusted by the hand wheel 31. Likewise the adjustable lip 32 on the slice 33 can be adjusted vertically by the hand wheels 34.

The breast roll can be made solid, perforated, or can be used perforated with the vacuum arrangement shown in Figures 2 and 3 where the perforated breast roll 17a having the perforations 17b is provided with a vacuum box 35.

The vertical position of the shafts 36 and 37 supporting the plurality of slice rods 31a and 34a can be adjusted by actuating the hand wheels 38 and 39. Each of these hand wheels has a worm 40 engaging with a rack 41 on one of the shafts 36 or 37 so that the rotation of the shaft will rotate the eccentrics 36a and 37a for raising and lowering bodily the slice structures as a unit, while the independent adjustments are effected by the wheels 31 and 34 transversely of the wire.

It will be understood that I desire to comprehend within my invention such modifications as may be necessary to adapt it to varying conditions and uses.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In combination, a breast roll, a wire belt extending around said roll, at least one reach of said wire belt extending in a horizontal direction from said breast roll, means for conveying stock from a point below said breast roll including a passageway having one wall extending vertically downwardly from a point adjacent the periphery of and substantially beneath the center of the breast roll, and a second vertical wall opposite said first vertical wall thereby defining a vertical portion of said passageway below said breast roll,

said second wall extending upwardly to a point above the breast roll, and an adjustable substantially horizontal slice extending from a point above the breast roll to said second vertical wall.

2. In combination, a breast roll, a wire belt extending around said roll, at least one reach of said wire belt extending in a horizontal direction from said breast roll, means for conveying stock from a point below said breast roll, including a passageway having one wall extending vertically downwardly from a point adjacent the periphery of and substantially beneath the center of the breast roll, and a second vertical wall opposite said first vertical wall, thereby defining a vertical portion of said passageway below said breast roll, said second wall extending upwardly to a point above the breast roll, and an adjustable substantially horizontal slice extending from a point above the breast roll to said second vertical wall, said slice having a curved portion adjacent said second vertical wall.

3. In combination, a breast roll, a wire belt extending around said roll, at least one reach of said wire belt extending in a horizontal direction from said breast roll, means for conveying stock from a point below said breast roll, including a passageway having one wall extending vertically downwardly from a point adjacent the periphery of and substantially beneath the center of the breast roll, and a second vertical wall opposite said first vertical wall, thereby defining a vertical portion of said passageway below said breast roll, said second wall extending upwardly to a point above the breast roll, and an adjustable substantially horizontal slice extending from a point above the breast roll to said second vertical wall, and an apron mounted on said first vertical wall

and engaging said wire belt at a point below said breast roll.

4. In combination, a breast roll, a wire belt extending around said roll, at least one reach of said wire belt extending in a horizontal direction from said breast roll, means for conveying stock from a point below said breast roll, including a passageway having one wall extending vertically downwardly from a point adjacent the periphery of and substantially beneath the center of the breast roll, and a second vertical wall opposite said first vertical wall, thereby defining a vertical portion of said passageway below said breast roll, said second wall extending upwardly to a point above the breast roll, and an adjustable substantially horizontal slice extending from a point above the breast roll to said second vertical wall, and a perforated roll extending between said vertical walls at a point below the breast roll.

5. In combination, a breast roll, a wire belt extending around said roll, at least one reach of said wire belt extending in a horizontal direction from said breast roll, means for conveying stock from a point below said breast roll, including a passageway having one wall extending vertically downwardly from a point adjacent the periphery of and substantially beneath the center of the breast roll, and a second vertical wall opposite said first vertical wall, thereby defining a vertical portion of said passageway below said breast roll, said second wall extending upwardly to a point above the breast roll, and an adjustable substantially horizontal slice extending from a point above the breast roll to said second vertical wall, and a plurality of additional slices mounted on said second vertical wall opposite said breast roll.

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