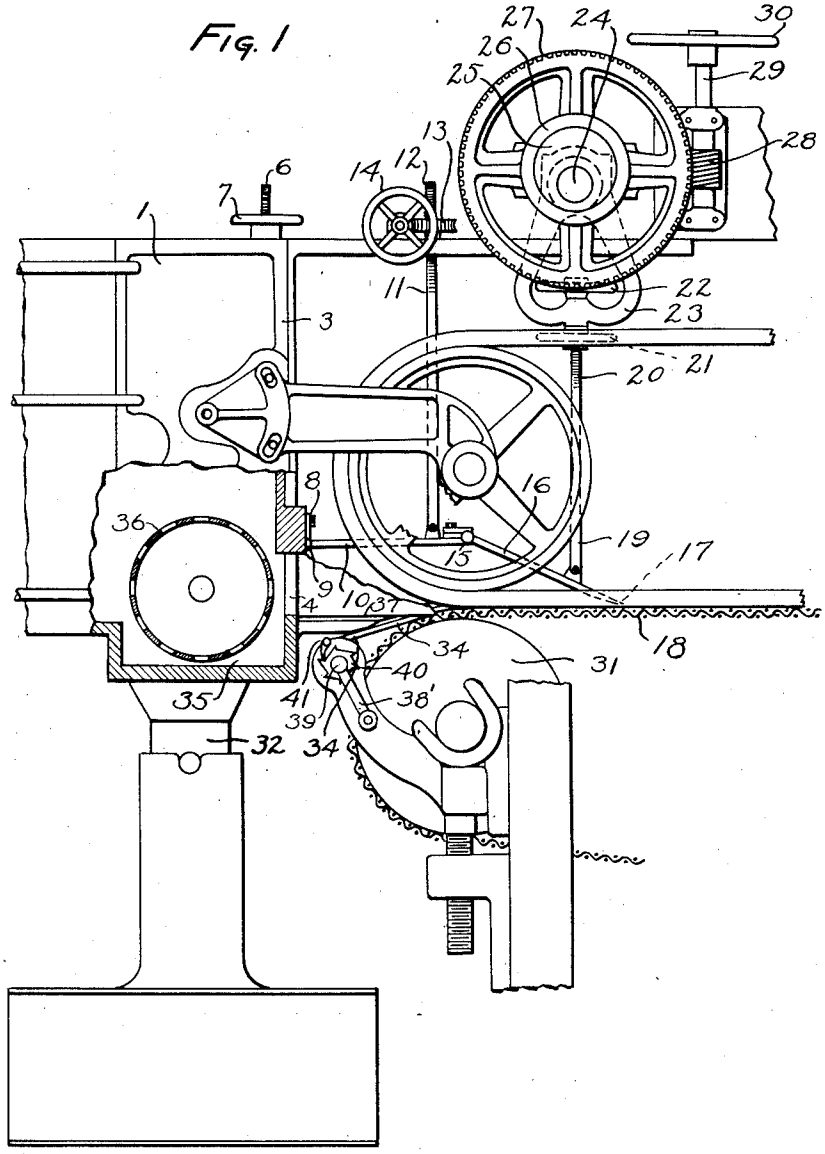
Nov. 6, 1928. 1,690,203

N. J. NIKS

PAPER MAKING MACHINE

Filed May 18, 1927 3 Sheets-Sheet 1

Fig. 1



INVENTOR
Nickolas J. Niks
BY Toulmin & Toulmin,
ATTORNEY

Nov. 6, 1928. 1,690,203

N. J. NIKS

PAPER MAKING MACHINE

Filed May 18, 1927 3 Sheets-Sheet 2

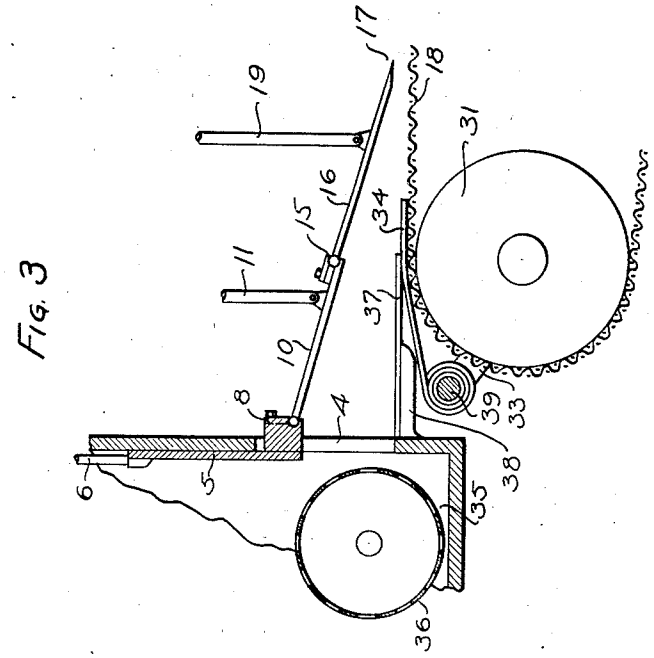


FIG. 3

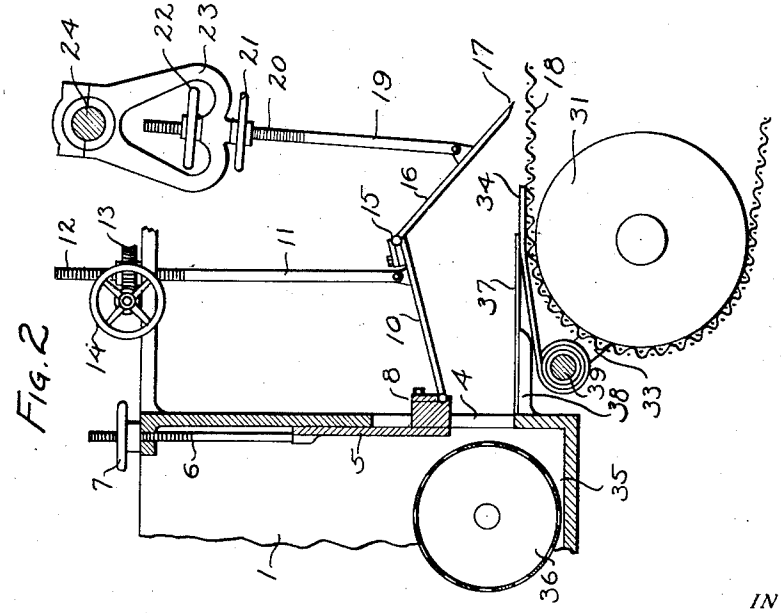


FIG. 2

INVENTOR
Nickolas J. Niks
BY Paulmin & Paulmin,
ATTORNEY

Nov. 6, 1928. 1,690,203

N. J. NIKS

PAPER MAKING MACHINE

Filed May 18, 1927 3 Sheets-Sheet 3

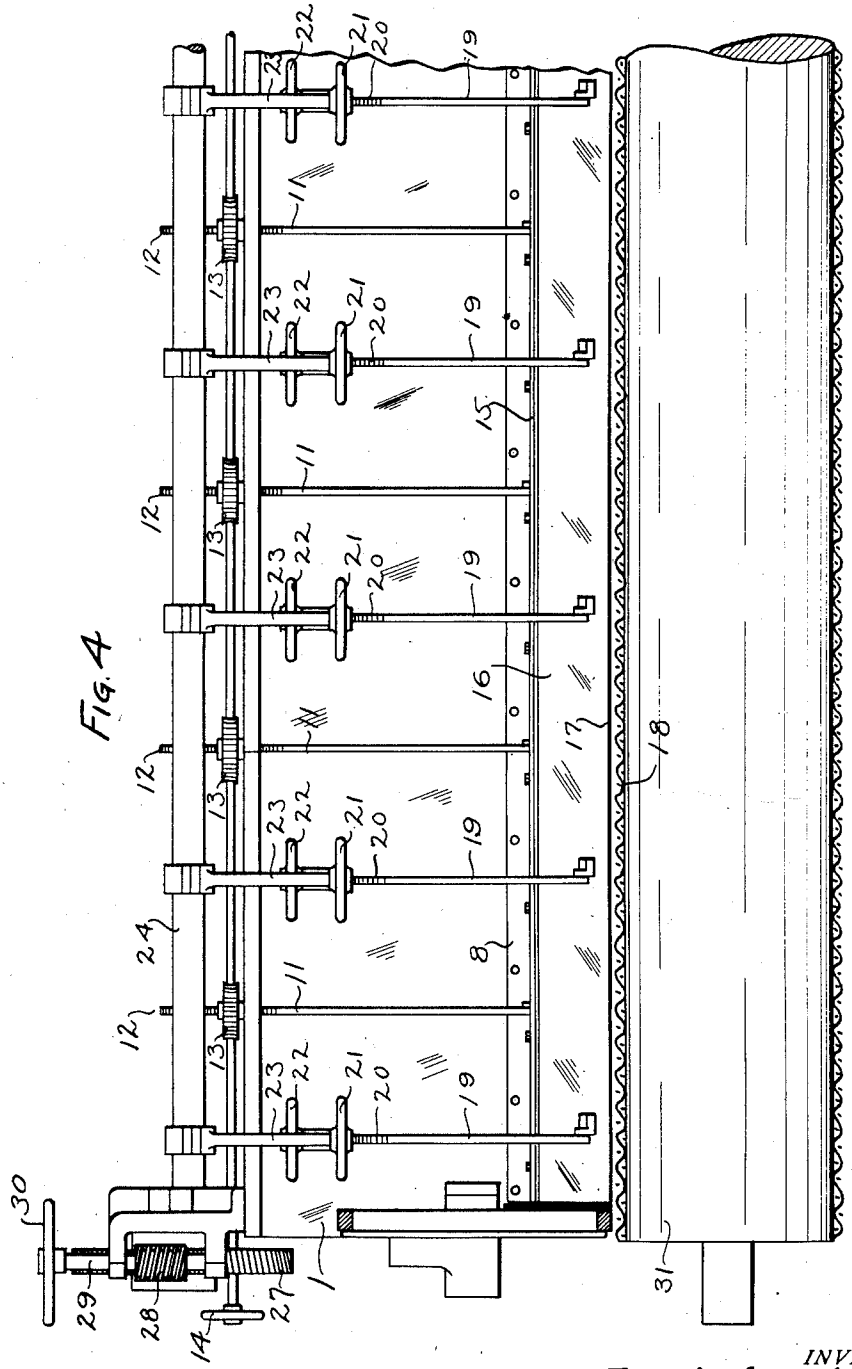


FIG. 4

INVENTOR
Nickolas J. Niks
BY Toulmin & Toulmin,
ATTORNEY

Patented Nov. 6, 1928. 1,690,203

UNITED STATES PATENT OFFICE.

NICKOLAS J. NIKS, OF CHILLICOTHE, OHIO.

PAPER-MAKING MACHINE.

Application filed May 18, 1927. Serial No. 192,221.

My invention relates to paper making machines.

It is the object of my invention to provide a slice and support therefor, which are adjustable in varying positions in order to permit of an adjustment of a quantity of stock behind the slice to prevent the stock being forced out under the slice if the stock in the stock box accumulates to too great a height in the box.

I have found that, if I can adjust the space behind the slice between the slice and the box, I can control the ejection of the stock under the slice on to the wire.

This is particularly necessary where the speed of the wire exceeds four hundred feet per minute.

Formerly, the slice was not adjustable and the opening from the stock box to the space behind the slice was constant. By my invention, I am enabled to vary the opening from the stock box to the space behind the slice and also vary the space between such opening and the slice while still confining the stock behind the slice and thereby adjusting its rate of flow beneath the slice.

I am further able to adjust the quantity of stock with respect to the position of the apron and the slice position.

In the accompanying drawings:

Figure 1 is a side elevation of the stock box end of the machine;

Figure 2 is a diagrammatic section taken vertically therethrough showing the slice and its support adjusted to provide a larger area between the stock box and the slice end;

Figure 3 is a similar view showing the opening from the stock box to the area behind the slice increased;

Figure 4 is a front elevation of the slices and adjusting mechanism.

Referring to the drawings, 1 is a stock box having a bottom 2 and a front wall 3 provided with an opening 4. This opening is adjusted in its size by the slide 5 controlled by the setting screw 6 and wheel 7. The bottom of this slide carries a block 8 to which is pivoted at 9 a stock retaining board 10. This board is adjustably supported at its forward end by a series of links 11, the upper end of which is threaded at 12 for engagement with the worm wheel 13, which, in turn, is actuated by the adjusting hand wheel 14 in the usual manner. This stock retaining board is pivoted at 15 to the slice 16, the lower end 17 of which is adjustably positioned with respect to the wire 18 by the link 19.

This link 19 is threaded at 20 and is positioned by the hand wheels 21 and 22 with respect to the yoke 23. This yoke, in turn, is rotatably mounted upon a shaft 24 mounted in an eccentric 25. This eccentric is surrounded by an eccentric strap 26 carrying a gear 27 actuated by the worm 28 carried on the shaft 29 which is operated by the hand wheel 30.

The wire is carried on the breast roll 31 while the stock box is mounted upon the support 32. The bracket 33 carries the apron 34.

The bracket 33 is attached to the breast roll and vibrates with it so that the apron 34 vibrates with the wire in unison therewith.

The stock box has a depression formed in the forward end thereof designated 35 in which is located the perforated distributing roll 36 so arranged that the stock must pass through the roll thus insuring an even spread of the stock and absolute prevention of thumb spots and lumps.

By providing a plurality of adjusting members 20, it is possible to flex the thin slice 16 so as to secure uniform thickness of sheets crossing the machine. The hand wheel 14 effects the simultaneous adjustment of the stock retaining board 10. A stationary apron 37 is mounted on the bracket 38 which forms a loop beneath the exit opening 4 of the stock box. This apron is superimposed upon the adjustable apron 34 carried on the bracket 33. This apron is adjusted by the handle 38′ operating the shaft 39 which is controlled by the ratchet 40 and ball 41.

Method of operation.

The stock will flow through the opening 4, the exact size of which may be determined by adjusting the position of the slide 5. If the stock is being forced beneath the slice at 17 too rapidly due to the accumulation of the stock in the stock box, I can lift the stock retaining board 10 and position it in the manner indicated in Figure 2 leaving an enlarged space for the accumulation thereof. It is also possible to adjust this board across the machine by more than the single rod 11 so as to adjust the space where the quantity of the stock is issuing at that particular point. The same is true of the rods 19 of which there may be a number fitting in a plurality of supporting brackets 23, all being

supported in a common shaft 24 operated by the common eccentric 26.

Independent adjustments are carried out by the hand wheels 21 and 22. If it is desired to allow more stock to come out in keeping with the greater speed of the machine, then the slide 5 may be raised as in Figure 3 and the stock retaining board lowered. By these adjustments I am enabled to secure across the entire width of the wire uniform paper without flowering.

I find that this apparatus of my invention is particularly important when the wire speed exceeds four hundred feet per minute, as this high speed will bring about irregularities in feeding unless I provide some means of adjusting from time to time the pull of stock after it has issued from the stock box directly adjacent the slice, as the mere adjustment of the slice position with respect to the wire will not be sufficient for this purpose, as such adjustment has another function entirely.

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 a paper making machine, a stock box, a stock retaining board pivoted thereto and a slice pivoted to said board, whereby an area for the accumulation of stock may be formed between the stock box and the slice.

2. In a paper making machine, a stock box, a stock retaining board pivoted thereto and a slice pivoted to said board, whereby an area for the accumulation of stock may be formed between the stock box and the slice, and means to adjust the position of said stock retaining board to vary such area for the accumulation of stock.

3. In a paper making machine, a stock box, a stock retaining board pivoted thereto and a slice pivoted to said board, whereby an area for the accumulation of stock may be formed between the stock box and the slice, and means to adjust the position of said stock retaining board to vary such area for the accumulation of stock, and means to adjust the pivotal support of the stock retaining board on the stock box.

4. In a paper making machine, a stock box, a stock retaining board pivoted thereto and a slice pivoted to said board, whereby an area for the accumulation of stock may be formed between the stock box and the slice, means to adjust the position of said stock retaining board to vary such area for the accumulation of stock, and means to adjust the pivotal support of the stock retaining board on the stock box, said support being so arranged that the opening of the stock box to the area beneath the stock board behind the slice will be varied.

5. In a paper making machine, a stock box, a stock retaining board pivoted thereto and a slice pivoted to said board, whereby an area for the accumulation of stock may be formed between the stock box and the slice, means to adjust the position of said stock retaining board to vary such area for the accumulation of stock, means to adjust the pivotal support of the stock retaining board on the stock box, said support being so arranged that the opening of the stock box to the area beneath the stock board behind the slice will be varied, and means to vary the position of the slice with respect to the wire of the paper making machine.

6. In a paper making machine, a stock box having an opening, an adjustably positioned slide for varying the size of the opening, a stock retaining board pivoted thereto, means for adjustably positioning the position of said stock retaining board, a slice pivoted to said stock retaining board, and means for adjusting the position of said slice with respect to the paper machine wire, and a paper machine wire.

7. In a paper making machine, a stock box having an opening, an adjustably positioned slide for varying the size of the opening, a stock retaining board pivoted thereto, means for adjustably positioning the position of said stock retaining board, a slice pivoted to said stock retaining board, means for adjusting the position of said slice with respect to the paper machine wire, a paper machine wire, and an apron adapted to rest on top of said wire beneath said stock retaining board and slice so positioned as to form a bottom for the area for the accumulation of stock outside of the stock box behind the slice beneath the retaining board.

8. In a paper making machine, a stock box having an opening, an adjustably positioned slide for varying the size of the opening, a stock retaining board pivoted thereto, means for adjustably positioning the position of said stock retaining board, a slice pivoted to said stock retaining board, means for adjusting the position of said slice with respect to the paper machine wire, a paper machine wire, and an apron adapted to rest on top of said wire beneath said stock retaining board and slice so positioned as to form a bottom for the area for the accumulation of stock outside of the stock box behind the slice beneath the retaining board, and so positioned that the stock will engage with the wire before it reaches the slice.

9. In a paper making machine, a stock box having an opening, an adjustably positioned slide for varying the size of the opening, a stock retaining board pivoted thereto, means for adjustably positioning the position of said stock retaining board, a slice pivoted to said stock retaining board, means for adjusting the position of said slice with respect to the paper machine wire, a paper ma-

chine wire, and an apron adapted to rest on top of said wire beneath said stock retaining board and slice so positioned as to form a bottom for the area for the accumulation of stock outside of the stock box behind the slice beneath the retaining board and so positioned that the stock will engage with the wire before it reaches the slice beyond the center of the breast roll supporting the wire.

10. In a paper making machine having a wire, breast roll and stock box, an articulated adjustable slice pivotally supported with respect to said stock box and so arranged that the stock issuing from the stock box may be confined and controlled behind and beneath the slice and between the slice and the wire.

11. In a paper making machine having a wire, breast roll and stock box, an articulated adjustable slice pivotally supported with respect to said stock box and so arranged that the stock issuing from the stock box may be confined and controlled behind and beneath the slice and between the slice and the wire, and an apron beneath said slice adapted to support the stock accumulated beneath the slice after it issues from the stock box and arranged to deliver such stock to the wire before it reaches the slice but beyond the center of the breast roll in the direction of the slice.

12. In a paper machine, a stock box having a well adjacent its exit opening, a foraminous distribution roll located in said well through which the stock must pass on its way to the exit opening, a wire and an apron for conveying said stock on to said wire, and a slice over said wire.

13. In a paper machine, a stock box having a well adjacent its exit opening, a foraminous distribution roll located in said well through which the stock must pass on its way to the exit opening, a wire, and an apron for conveying said stock on to said wire, and a slice over said wire, and a stationary apron carried by the stock box in addition to the first mentioned apron, and means for mounting the first mentioned apron to move with the wire.

14. In a paper making machine, a stock box, a stationary apron carried thereby, a breast roll, a wire thereon passing beneath said stationary apron and an adjustable apron interposed between said wire and stationary apron, and means for carrying said adjustable apron on said breast roll so that it will move with the wire and breast roll and a slice adapted to be adjustably positioned with respect to said wire.

15. In a paper making machine, a stock box, a stationary apron carried thereby, a breast roll, a wire thereon passing beneath said stationary apron, and an adjustable apron interposed between said wire and stationary apron, and means for carrying said adjustable apron on said breast roll so that it will move with the wire and breast roll and a slice adapted to be adjustably positoned with respect to said wire, a retaining board connected to said slice to form an enclosed area between said wire, apron and stock box, and means to adjust the position of said board.

16. In a paper making machine, a stock box, a wire, a retaining board pivotally mounted on said box, an adjustable slice mounted on said board, means to adjust said slice at various points throughout its length, means to adjust the positon of said board.

17. In a paper making machine, a stock box, a wire, a retaining board pivotally mounted on said box an adjustable slice mounted on said board, means to adjust said slice at various points throughout its length, means to adjust the postion of said board, and means to adjust the slice as a unit.

18. In combination, a stock box, means to vary an opening in said stock box through which the stock makes its exit, a retaining board pivoted on said opening, adjusting means, a slice pivoted on said retaining board, means for adjusting said slice with respect to a wire, means to adjust said retaining board, and independent means for adjusting said slice with respect to said wire to vary the distance of said slice at different points throughout its length, a stationary apron for closing the space between the stock box and the wire.

19. In combination, a stock box, means to vary an opening in said stock box through which the stock makes its exit, a retaining board pivoted on said opening, adjusting means, a slice povited on said retaining board, means for adjusting said slice with respect to a wire, a wire means to adjust said retaining board, and independent means for adjusting said slice with respect to said wire to vary the distance of said slice at different points throughout its length, a stationary apron for closing the space between the stock box and the wire, and a breast roll carrying said wire, and an apron carried thereby interposed between the stationary apron first mentioned and said wire for varying the space between the end of the slice and the apron beneath the slice through which water can pass prior to the stock passing beneath the slice.

In testimony whereof I affix my signature.

NICKOLAS J. NIKS.