March 3, 1953 B. E. TEALE 2,630,045

PAPERMAKING APPARATUS

Filed June 21, 1950

Fig. 1.

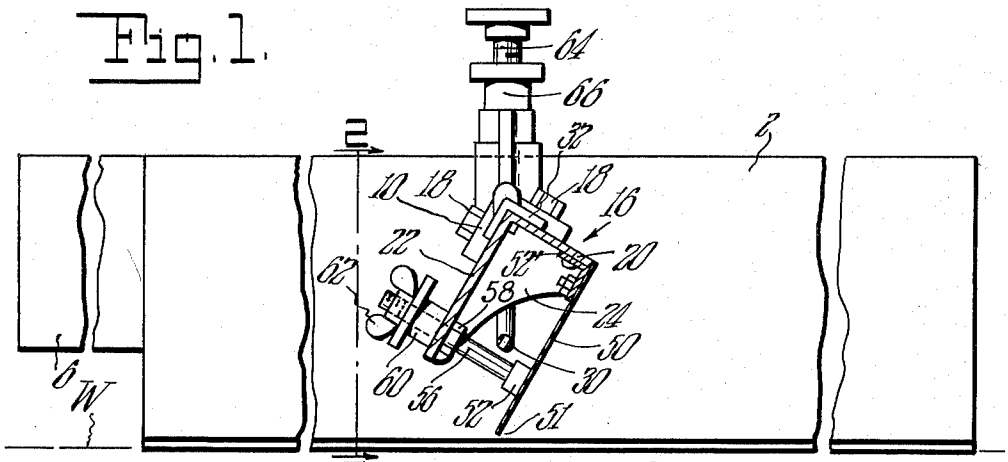


Fig. 4.

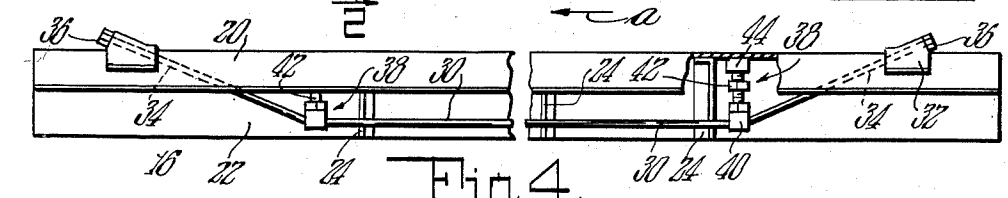


Fig. 2.

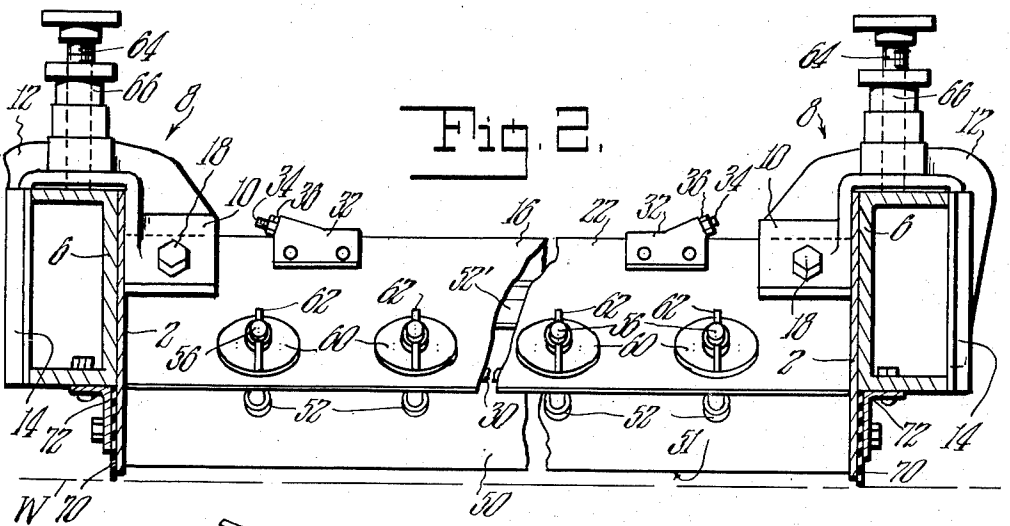
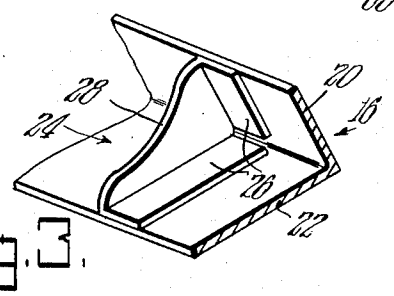


Fig. 3.



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PAPERMAKING APPARATUS

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1 Claim. (Cl. 92—44)

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This invention relates to improvements in slice construction for paper machines in combination with pond and deckle construction.

The principal objects of the invention are directed to improvements in slice for a paper machine in combination with pond and deckle construction with particular adaptability to Fourdrinier paper machines.

In recent years the widths of paper machines have increased requiring slices of correspondingly increased lengths. The slice of this application possesses the rigidity, strength and efficiency for long length without the sacrifice of the desired and necessary flexibility, and according to the invention novel pond construction is provided with stationary deckles to obviate the prior art endless band deckles.

All of the above objects I accomplish by means of such structure and relative arrangement of parts thereof, as will fully appear by a perusal of the description below and by various specific features which will be hereinafter set forth.

To the above cited and other ends and with the foregoing and various other novel features and advantages and other objects of my invention as will become more readily apparent as the description proceeds, my invention consists in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more particularly pointed out in the claim hereunto annexed and more fully described and referred to in connection with the accompanying drawings wherein:

Fig. 1 is a sectional elevational view transversely through the slice construction of the invention and showing a pond plate associated therewith;

Fig. 2 is a transverse sectional elevational view on the line 2—2 of Fig. 1 showing the pond plates and deckles at opposite ends of the slice;

Fig. 3 is a perspective view showing a portion of the slice support having a stiffener associated therewith; and

Fig. 4 is a small scale elevational view of the slice support having truss means associated therewith.

Referring now to the drawings more in detail, the invention will be fully described.

Elongated vertically disposed and transversely spaced pond plates are represented by 2. These plates extend forwardly from a flow box of a paper machine, not shown, and may be supported by said flow box or by side stands or the like. Paper making stock flows from the flow box onto the Fourdrinier wire which for illustrative pur-

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pose, moves in the direction of arrow *a* in Fig. 1. The wire is represented by W.

Longitudinal side beams 6 outside the pond plates 2 are provided which for strength and rigidity may be channel-shape in cross section. The beams 6 and plates 2 are suitably secured together by rivets or the like.

Slice brackets 8 have inner angular portions 10 disposed inside of the plates 2 and outer depending arms 12 outside the beams 6.

The portions 10 and 12 are arranged to rather snugly embrace the plates and beams and members 14 which may be in the form of angles, are secured to the beams at opposite sides of the portions 12 to hold them against movement along the said beams 6.

A longitudinal slice support 16 extends between the plates 2 or transversely of the wire W and has opposite ends secured to the portions 10 of the brackets 8, as by bolts 18.

The member 16 is preferably of angle cross section having legs 20 and 22, as shown.

Due to the constantly increasing widths of paper making machines and the slices required for those machines, the slice support in order to provide the necessary rigidity and strength is provided with a plurality of stiffeners or braces 24. These members 24 have flanges 26 which are secured to the legs 20 and 22 of the support 16, by riveting or the like, and are connected to stiffening webs 28. These stiffeners are spaced along the support 16 and secured thereto as may be desired.

Also, to insure rigidity and stiffness, a truss rod 30 is provided, as shown more clearly in Fig. 4.

Truss brackets 32 are secured to the support 16 and opposite threaded ends 34 of the truss rod extend upwardly through the support 16 and through the brackets 32 and have nuts 36 in engagement therewith.

Jack devices 38 are provided which include lower saddles 40 on the rod 30 and screw members 42 having lower and upper threaded ends in engagement with the saddles 40 and blocks 44 in the support 16. The screws 42 may be turned in one direction to exert a force on to the rod 30 so that it is taut for strengthening the support 16.

There may be more than one truss if desired and if necessary or desired the truss rod may include end portions having inner ends connected by a turnbuckle or the like.

A slice plate 50 has an upper longitudinal edge

secured to an angle 52' which is secured to the leg 20 of the support 16.

Said slice is formed from relatively thin flexible metal and spaced longitudinally adjacent its lower ends are a plurality of connectors 52 which have secured therein the lower ends of adjusting screws 56.

Said screws have lock nuts 58 thereon and below leg 22 of support 16. Adjusting members 60 and wing nuts 62 are in engagement with said screws 56 above the leg 22.

By means of the screw adjusting means the lower longitudinal edge 51 of the slice plate may be adjusted up or down relative to the wire moving therepast.

Adjusting screws 64 in threaded engagement with brackets 8 have lower ends bearing on the members 6 and lock members 66 are in threaded engagement therewith. By means of screws 64 the brackets 8 may be raised or lowered so as to raise and lower the support 16 and position the lower edge of the slice plate as may be desired relative to the wire. Thus, the lower edge of the slice plate may be adjusted or positioned by means of the screws 64 and screws 56.

Deckles 70 are secured to the lower longitudinal edges of the plates 2 by angles 72, as shown in Fig. 2. Lower longitudinal edges of the deckles extend below the lower edges of the plates and ride on the traveling wire W. The deckles will be formed from some resilient or yieldable material such as rubber, rubber composition or the like so as to engage the wire and function with a deckling action.

Thus, it will be seen that the slice is of unitary construction and may be located as desired along the pond plates while it is stiffened and reinforced so that it may be rigid and strong when made in long lengths.

At the same time, the pond plates and deckles provide a novel construction and obviate prior art deckles.

The invention may be embodied in other specific forms without departing from the essential characteristics thereof. Hence, the present embodiments are therefore to be considered in all respects merely as being illustrative and not as being restrictive, the scope of the invention being indicated by the appended claim rather than by the foregoing description, and all modifications and variations as fall within the meaning and purview and range of equivalency of the appended claim are therefore intended to be embraced therein.

What it is desired to claim and secure by Letters Patent of the United States is:

The combination with the elongated vertically disposed transversely spaced pond plate structures of a paper machine of a slice construction comprising, brackets on the upper sides of said plate structures having inner and outer portions inside and outside thereof, said inner portions extending downwardly from the upper longitudinal edges of said plate structures, guide means on the outer sides of said plate structures for guiding the brackets in up and down movements and slidably receiving the outer portions of the brackets, screw means carried by said brackets resting on said plate structures for raising and lowering said brackets, a longitudinal support below the plane of the upper edges of the plate structures having opposite ends secured to said inner portions of the brackets, said support in cross section being in the form of an A having angularly disposed legs depending from an apex which is disposed uppermost, an elongated flexible slice plate having an upper longitudinal edge secured to a longitudinal edge of one of the legs of said support and being disposed in spaced parallelism relation with the other leg of the support, separate adjusting means in spaced relation along the edges of the slice plate and said other leg, brace members spaced along and secured to inner sides of the legs of said support, an elongated substantially rigid rod having an intermediate portion in parallelism with said support below said brace members and screw threaded end portions extending in relatively diverging relation upwardly through opposite end portions of said support, nuts on said end portions of the rod above said support, and separate adjustable jack devices between the jointure of the legs of the support and the jointure of the adjacent ends of the intermediate and end portions of said rod.

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