Oct. 17, 1944. F. A. HELIN 2,360,773

FOURDRINIER WIRE CHANGE

Filed July 7, 1942 2 Sheets-Sheet 1

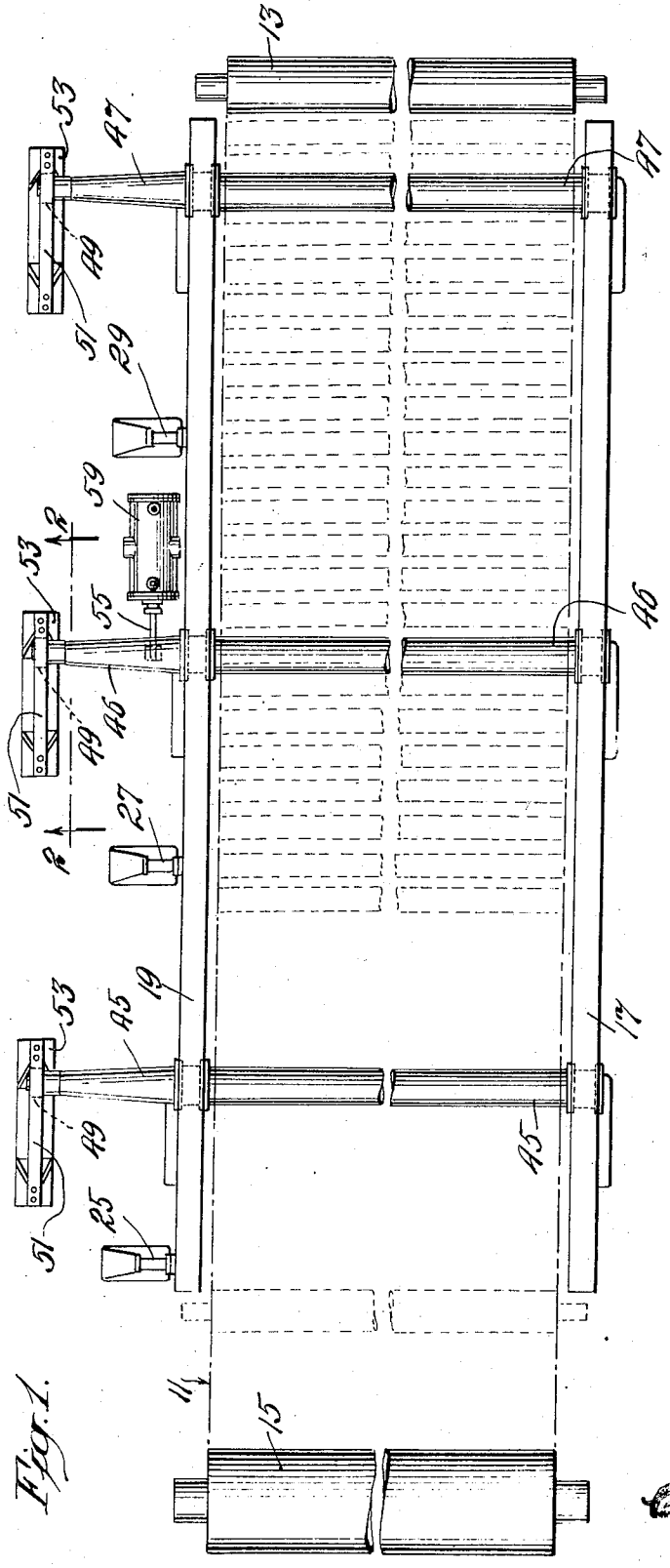


Fig. 1.

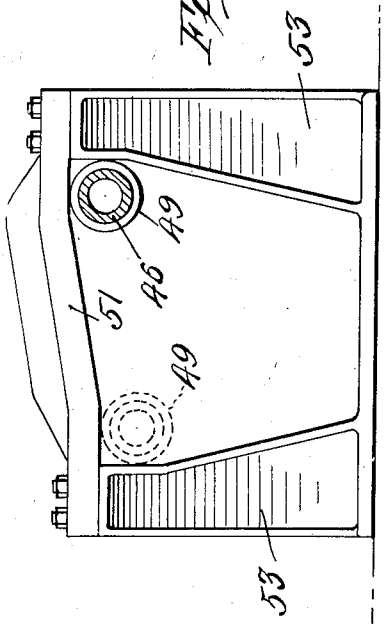


Fig. 2.

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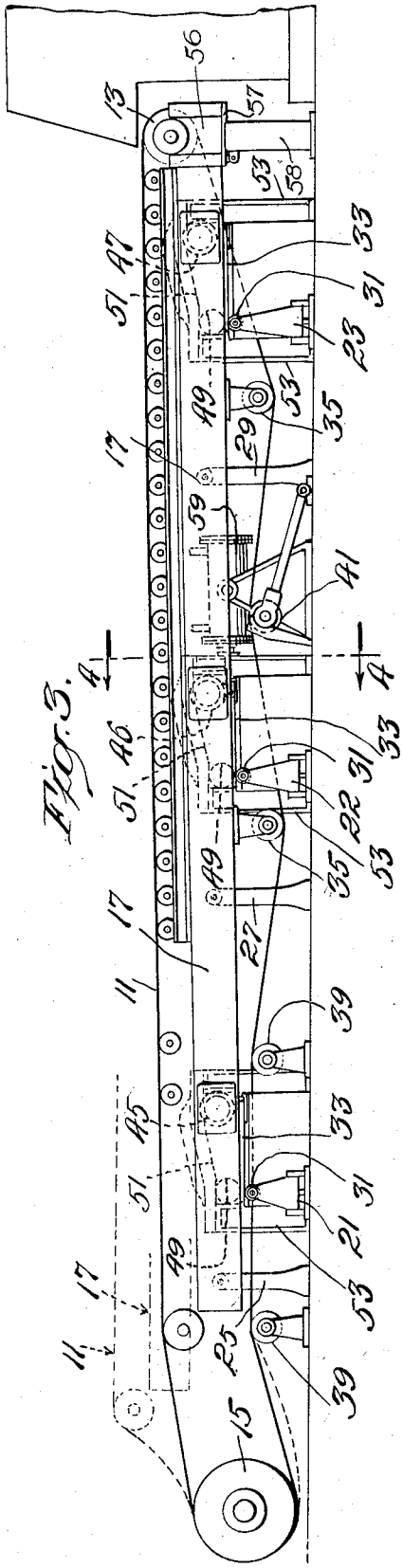


Fig. 3.

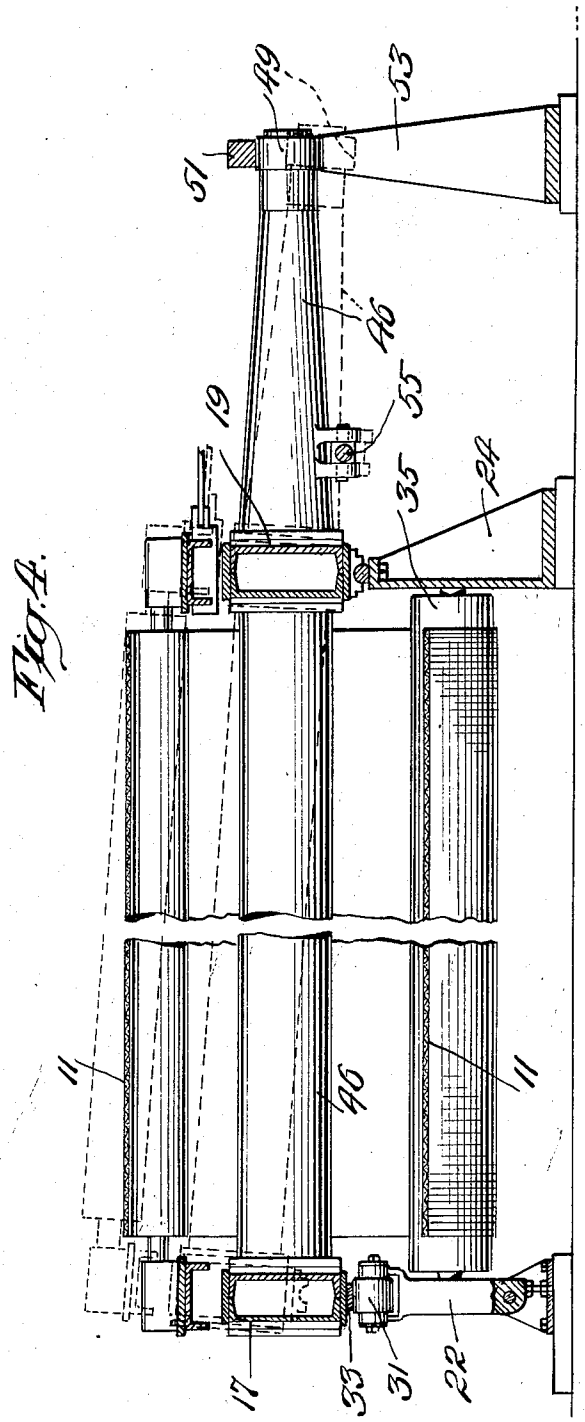


Fig. 4.

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FOURDRINIER WIRE CHANGE

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Application July 7, 1942, Serial No. 450,021

3 Claims. (Cl. 92—44)

The present invention relates to paper making machines and more particularly to the Fourdrinier part thereof.

The object of the invention is to provide for producing a movement of the Fourdrinier part to facilitate changing the Fourdrinier wire.

The invention includes means for moving the Fourdrinier part both longitudinally and angularly, the longitudinal movement accomplishing the result of providing slack in the Fourdrinier wire and the angular movement causing the front side of the Fourdrinier wire frame to lift from its front supports to provide clearance for the removal of one wire and the assembly of another.

Details of construction and advantages thereof will appear from the following description taken in connection with the accompanying drawings illustrating a preferred embodiment thereof and in which,

Figure 1 is a top plan view, largely diagrammatic, of the Fourdrinier part of a paper making machine showing the mechanism for accomplishing the slack producing and lifting movements of the present invention;

Figure 2 is a vertical longitudinal sectional view, on an enlarged scale, taken on line 2—2 of Figure 1;

Figure 3 is a side elevation of the Fourdrinier part taken from the front side thereof; and

Figure 4 is a transverse vertical sectional view, on an enlarged scale, taken on line 4—4 of Figure 3.

Referring in detail to the accompanying drawings, the upper run of the Fourdrinier wire 11 travels from right to left as viewed in Figure 1 from the breast roll 13 to the lower couch roll 15.

The couch roll 15 is revolubly mounted on fixed supports. In accordance with the present invention the entire Fourdrinier wire frame, including the front side beam 17 and the rear side beam 19, is mounted for longitudinal movement with respect to its three front support stands 21, 22 and 23 and its rear support stands 24. Each of these stands carries at its top a roller upon which is adapted to travel a track 33 fast to the wire frame side beam. The breast roll 13 is shown as carried by a frame or box 56 forming an extension of the frame 17 and secured thereto so as to move with the frame in its longitudinal movement, this frame or box 56 sliding with the frame 17 on a bearing plate 57 mounted on the supports 58.

The supports 21, 22, 23, at the front of the machine are pivotally mounted to swing outward away from the frame, the supporting rollers 31 at the front of the machine being of such form as to permit this, all as shown in Fig. 4. The usual locking stands 25, 27, 29 on the rear side of the frame for holding the frame in running position are shown.

It will be understood that the Fourdrinier wire frame carries the usual shake units and suction boxes not herein shown, as well as other mechanism common in the art such, for example, as the lower Fourdrinier wire guide rollers 35 fixed to the Fourdrinier frame. Cooperating therewith are a series of fixed floor-supported wire guide rollers 39 and a movable guide roller 41.

As herein shown, a series of cantiliver arms 45, 46 and 47 extend horizontally across the Fourdrinier frame from the front side beam 17 thereof through the rear side beam 19 and therebeyond, their outer ends revolubly carrying rollers 49. Each of these rollers bears against the under side of a pitched bar or cam 51 which extends parallel to and in the direction of the Fourdrinier frame, but, as viewed from right to left in Figures 1 and 3, extends downwardly towards the couch roll end of the Fourdrinier frame. As shown in Figure 2, these pitched bars or cams are supported on pitch bar frames or slide stands 53.

As herein illustrated, the middle cantiliver arm 46 is associated with the piston rod 55 of a piston carried in a hydraulic cylinder 59.

By means of hydraulic pressure exerted on the piston in this cylinder, the entire Fourdrinier frame is moved forwardly toward the couch roll and at the same time, by reason of the cantilever arms and their rollers working under the pitched bars or cams 51, the entire front side of the Fourdrinier frame is raised. This produces slack in the Fourdrinier wire and raises the whole frame bringing its forward end upwardly and to the left, as indicated in dotted lines in Figure 3; at the same time the frame is tilted to raise the front side of the frame as shown in dotted lines in Figure 4.

The couch roll takes no part in either of these movements, but, for removing the wire, its front end may be raised by jacking down the rear end. Thereupon, with the combined wire slack and frame clearance produced by the above described movement, the Fourdrinier wire can be changed in any known or convenient manner by moving it sidewise over the frame.

After the change has been completed, the couch roll may be lowered again to normal position and the Fourdrinier wire frame returned to

its normal position by reverse operation of the hydraulic cylinder. This movement carries the entire Fourdrinier frame from left to right and also lowers its front side down again upon its supports 21, 22, 23, by reason of the cantilever arm rollers 49 riding upwardly along the under side of their pitched bars or cams 51 as indicated in Figure 2, from the dotted line position to the full line position thereof.

It will be understood that the invention is not limited to the details of the construction shown, but many modifications may be made within the invention as defined by the claims.

What I claim is:

1. In a Fourdrinier machine, the combination with the Fourdrinier frame, including supports and its wire, of means for moving the frame longitudinally for providing slack in the wire and means actuated by the longitudinal movement of the frame for tilting the frame to raise one side of the frame from its supports for providing clearance for the wire to move over the frame for wire change.

2. In a Fourdrinier machine, the combination with the Fourdrinier frame and its wire, of means for moving the frame longitudinally for providing slack in the wire, levers connected to the frame for tilting it to raise one side for providing clearance for the wire to move over the frame for wire change, and cam guide means rocking the levers to tilt the frame by the longitudinal movement of the frame.

3. In a Fourdrinier machine, the combination with the Fourdrinier frame and its wire, means for moving the frame longitudinally for providing slack in the wire, said frame being pivotally mounted to tilt for raising one side for providing clearance for the wire to move over the frame for wire change, levers connected to the frame and extending beyond the opposite side of the frame, and cam guide means engaging the projecting portion of the levers outside the frame to rock the levers to tilt the first mentioned side of the frame by the longitudinal movement of the frame.

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