G. E. WILLIAMSON.

LAYBOY.

APPLICATION FILED SEPT. 25, 1914.

1,146,469.

Patented July 13, 1915.

2 SHEETS—SHEET 1.

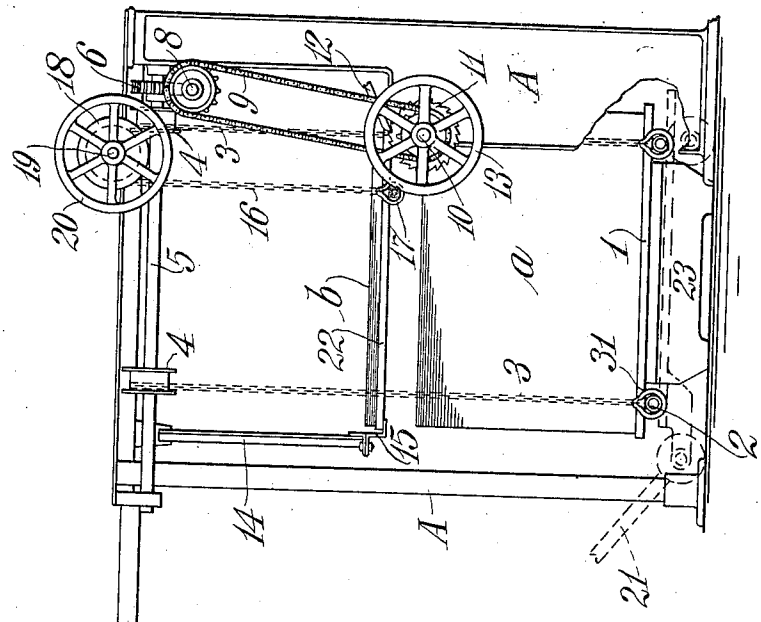


Fig. 2.

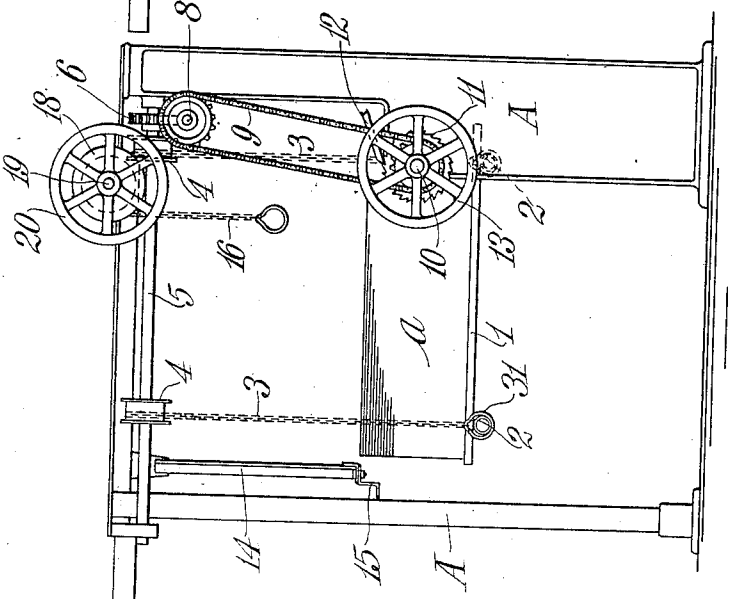


Fig. 1.

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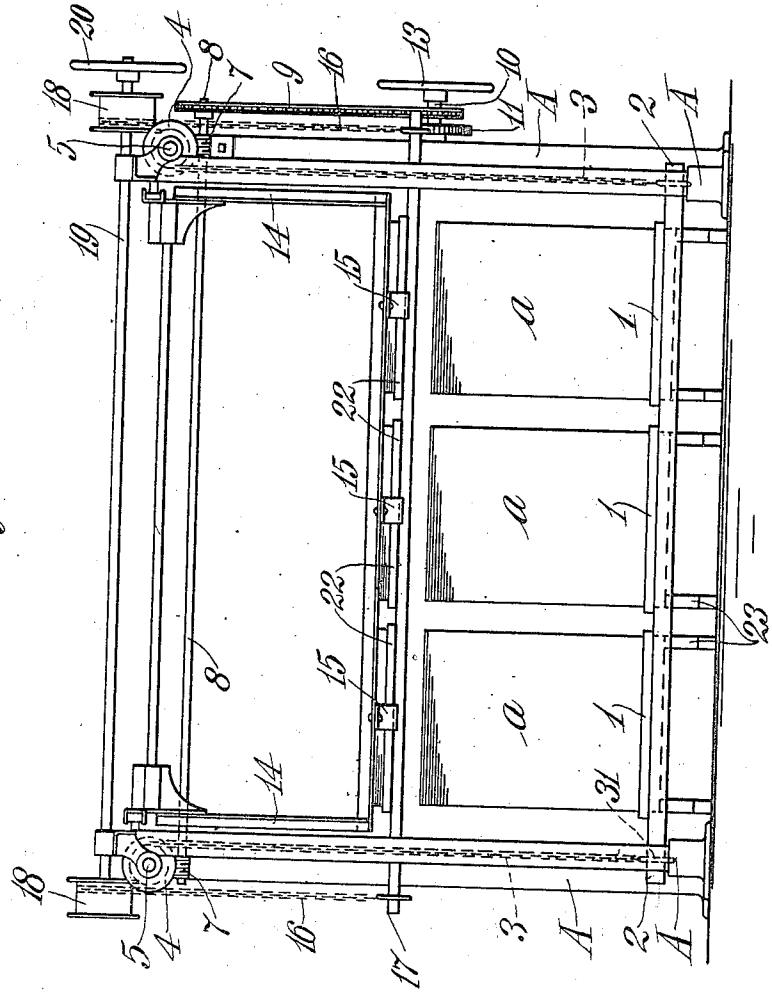
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2 SHEETS—SHEET 2.

Fig. 3.



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LAYBOY.

1,146,469. Specification of Letters Patent. Patented July 13, 1915.

Application filed September 25, 1914. Serial No. 863,480.

To all whom it may concern:

Be it known that I, GEORGE E. WILLIAMSON, a citizen of the United States of America, residing in Springfield, county of Hampden, and State of Massachusetts, have invented certain new and useful Improvements in Layboys, of which the following is a specification.

This invention relates to improvements in layboy constructions, and more particularly to novel receiving and supporting means for the paper delivered thereto.

Layboys are ordinarily used in connection with mechanism for cutting a continuous strip of paper into suitable sized sheets. It has been found desirable in the paper making art to lead the strip of paper made on a paper making machine such as a Fourdrinier machine directly from such machine to cutting mechanism for cutting the strip into sheets of the desired size as fast as the paper is made. It is well-known that the paper as ordinarily made on a Fourdrinier machine is wider than the width of the sheets desired. The cutting mechanism not only cuts the paper transversely but also longitudinally. When the sheets have been so cut it is desirable to pile them up in a convenient manner and a layboy is used for this purpose. Such a layboy is shown in the patent granted to White, #1,057,601 April 1, 1913. Where a layboy such as shown in the patent referred to is used, it is necessary to stop the operation of the cutting mechanism whenever it is necessary to remove the accumulated piles of paper away from the layboy. If the layboy is used together with the cutting mechanism in direct line with the Fourdrinier machine it is necessary to take care of the paper delivered by the paper making machine during the interval in which the operation of the layboy is stopped. This involves considerable labor and a loss of material. Applicant's construction is designed to coöperate with the layboy such as shown in the above patent in such a way that it, together with the cutting mechanism may be used at the end of a paper making machine in a continuous manner so that the paper may be delivered to the layboy at all times.

The object of the invention is to provide a layboy construction which may be used at high speed and at the same time be capable of continuous and uninterrupted use. This object is obtained, broadly, by providing improved auxiliary supporting and receiving means in combination with the main supporting and receiving means. The auxiliary means is designed for immediate substitution in place of the main supporting means when the latter is rendered temporarily unavaliable as the accumulated piles of sheets are being removed from the machine. When the main supporting means is again available it is quickly substituted for the auxiliary means which in turn is rendered inoperative. In this way, the operation of the machine or layboy is not interrupted when the paper sheets are removed therefrom. This interruption has heretofore been thought necessary where a high speed machine is used.

A preferred embodiment of my invention is illustrated in the accompanying drawings in which:

Figure 1 is a side elevational view of my improved structure. Fig. 2 is a view similar to Fig. 1, showing the parts in another position. Fig. 3 is a rear elevational view of the structure shown in Fig. 1.

In the drawings, my invention has been illustrated as applied to a layboy of the kind disclosed in Letters Patent, #1,057,601. My device is an improvement on this structure and much of the structure therein disclosed has been omitted from the drawings for the sake of clearness and because it is not directly concerned with my invention.

The frame of the machine and all brackets thereon are designated by A. Mounted upon a stub shaft 10 projecting from the frame A is a ratchet wheel 11 and a hand wheel 13. The former is adapted to be operated intermittently and automatically by a pawl 12 in a manner similar to that disclosed in the above named patent or in any other suitable manner. The shaft 10 drives, by means of sprockets and a chain 9, a shaft 8 which extends the length of the machine, as indicated in Fig. 3. On this shaft 8 are a pair of worms 7 which engage with worm gears 6 to operate a pair of transversely arranged shafts 5 one on each side end of the machine. Fixed to each shaft 5 are a pair of drums 4 which carry chains 3 each having one end fastened to the drums. The chains are provided at their lower ends with eyes 31, through which supporting pipes 2 are adapted to be placed.

Resting on the top of pipes 2 are a plurality of receiving tables 1, shown three in number in the drawings.

On the floor, directly beneath and in the path of the tables 1, I preferably locate truck platforms 23, of the usual form, which are adapted to receive the tables 1 and the paper thereon when they are lowered. The platforms 23 are adapted to coöperate with a suitable form of elevating truck, indicated by dotted lines at 21. Upon the ends of shaft 19, mounted at the top of frame A, and parallel with the worm shaft 8 are a pair of drums 18 and adjacent one drum, a hand wheel 20. The shaft 19 is mounted to rotate with sufficient friction in order that it will normally stay in the position in which it is turned. Thus this shaft will turn only when it is purposely turned for its desired function. Each drum 18 on shaft 19 carries a chain 16 which is provided at its lower end with an eye to receive a pipe 17. Upon an angle iron frame 14, depending from frame A are clips 15 rotatably mounted thereon. The latter are Z-shaped in cross section, and when in the position shown in Fig. 1, are inactive and removed from the downward path of the boards 1. When the clips 15 are in the position shown in Fig. 2, they form in conjunction with the pipe 17 on supporting chains 16, a support for the receiving boards.

In operation, sheets from the cutting mechanism are delivered by the delivery mechanism to the receiving boards 1, as disclosed in the patent above mentioned. As the piles of sheets *a* on the tables 1 build up, the pawl 12 operates intermittently to turn the shafts 10, 8 and 5 and thus lower the chains 3, pipes 2 and the boards carried thereon. The pawl 12 operates this supporting mechanism to maintain the top sheets of the piles *a* at a desired and fixed level. The clip 15 and the chain 16 forming the auxiliary supporting mechanism are, during these operations, inactive and in the positions shown in Fig. 1.

As soon as the piles *a* have reached the desired height, the pawl 12 is removed from engagement with the ratchet wheel 11 and the auxiliary chain 16 is positioned as shown in Fig. 2. The piles *a* are then lowered by the hand wheel 13 enough to clear the bottom of the clips 15. The latter are then quickly turned into the position shown in Fig. 2, a pipe 17 is inserted in the eyes of the chain 16 and receiving boards 22 are laid upon the clips 15 and the pipe 17. Then the paper can build up on the tables 22, as indicated at *b* while the former pile *a* is being lowered upon the elevating truck platforms 23. In practice the operator can lower the pile *a* and apply the auxiliary supporting devices in a very short interval of time and it is not necessary to stop the cutting machine. The change requires such a short time that many operators can make it without losing a single sheet. If desired the clips 15 may be connected together so that the operation of one as it is turned into position will turn the others in position. This can be done by connecting the clips by a rod at a distance from the pivot points of the clips.

After the above operations have been performed the platforms 23 are carried away by elevating trucks 21. The chains 3 are then wound upon the drums by turning the hand wheel 13. When the chains 3 have been raised sufficiently to cause the pipes 2 to bear under the boards 22, the auxiliary supporting means may be removed. The clips 15 are turned back to the position shown in Fig. 1 and the chain 16 is wound up on the drums 18 by the hand wheel 20. The pawl 12 is then thrown back into engagement with the ratchet wheel 11 and the boards 22 and piles *b* are automatically fed downwardly.

Thus, I have provided a simple comparatively inexpensive device, applicable to a layboy, whereby the efficiency of the same is greatly increased.

It is recognized that many changes and modifications may be made in my structure without departing from the scope of my invention which is more truly defined in the appended claims.

What I claim is:

1. A layboy comprising in combination, receiving boards on which piles of paper, may be built up, supporting means therefor, mechanism to lower said means to maintain a given level for the top of the piles, auxiliary supporting means normally out of operative position, constructed and arranged to be placed in operative position at approximately the level of said piles and support a second set of boards on which new piles may be built while the first mentioned supporting means is operated to discharge its piles.

2. A layboy comprising in combination horizontally arranged and movable supporting means for a plurality of piles of paper, mechanism to automatically move the supporting means vertically to maintain the top of the piles at a given level, a hand operated device for changing the level, an auxiliary supporting means constructed and arranged to be placed at approximately said given level.

3. The combination in a layboy, adapted to receive sheets of paper and form them in piles, a platform on which the pile of paper is formed, supporting means for the platform, mechanism to move the supporting means and thus the platform vertically, whereby the top of the pile is maintained at a given level, auxiliary supporting means arranged to be moved into and out of opera-

tive position at said level, a second platform constructed to rest on the auxiliary means, said auxiliary supporting means, and said first mentioned means, being arranged to hold in turn a platform in position for sheets of paper to be received at all times.

4. The combination in a layboy adapted to receive sheets of paper and form them in piles, a platform on which the pile of paper is formed, horizontally arranged supporting means for the platform, mechanism to move the supporting means and thus the plaftorm vertically, whereby the top of the pile is maintained at a given level, auxiliary supporting means for said platform arranged above and at one side of the first mentioned means, movable into and out of operative position at said level, the latter means being arranged to move into supporting position while the former is still in that position and the auxiliary means being adapted to be thereafter moved out of supporting position.

5. The combination in a layboy adapted to receive sheets of paper and form them in piles, a platform on which the pile of paper is formed, supporting means for the platform, mechanism to move the supporting means and thus the platform vertically, whereby the top of the pile is maintained at a given level, auxiliary supporting means including devices to swing into and out of operative position at said level and two depending vertically movable chains adapted to removably support a horizontal bar, a second platform adapted to rest on said devices and said bar, all arranged so that the first mentioned means may be moved into supporting position under the second platform and the auxiliary means moved out of supporting position under the platform to leave the latter free to move vertically as the pile is formed.

6. A layboy, comprising, in combination, receiving boards on which piles of paper may be built up, supporting means therefor, automatic mechanism to lower said means to maintain a given level for the top of the piles, and auxiliary supporting means normally out of operative position constructed and arranged to be placed in operative position at approximately the level of said piles and support a second set of receiving boards on which new piles may be built while the first-mentioned supporting means is operated to discharge its piles, said second set of receiving boards arranged subsequently to be supported by said first-mentioned supporting means, whereby said auxiliary means may be withdrawn from operative position to permit said first-named supporting means to be again automatically lowered.

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