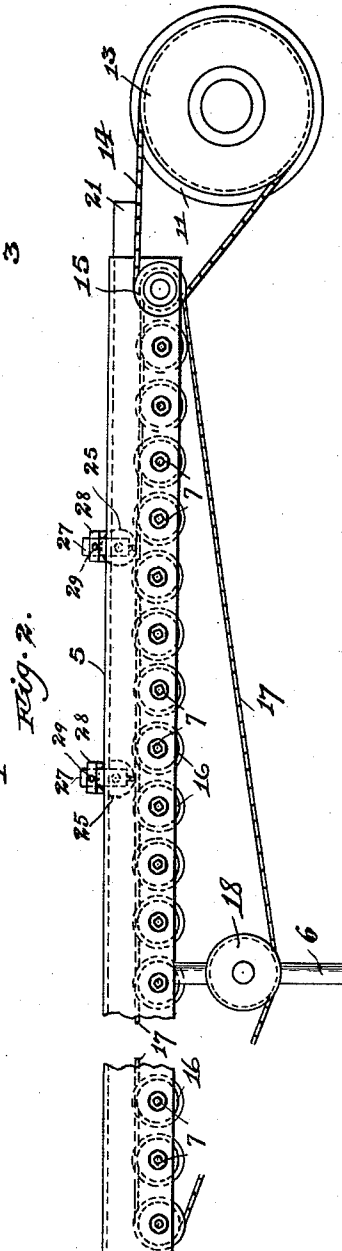
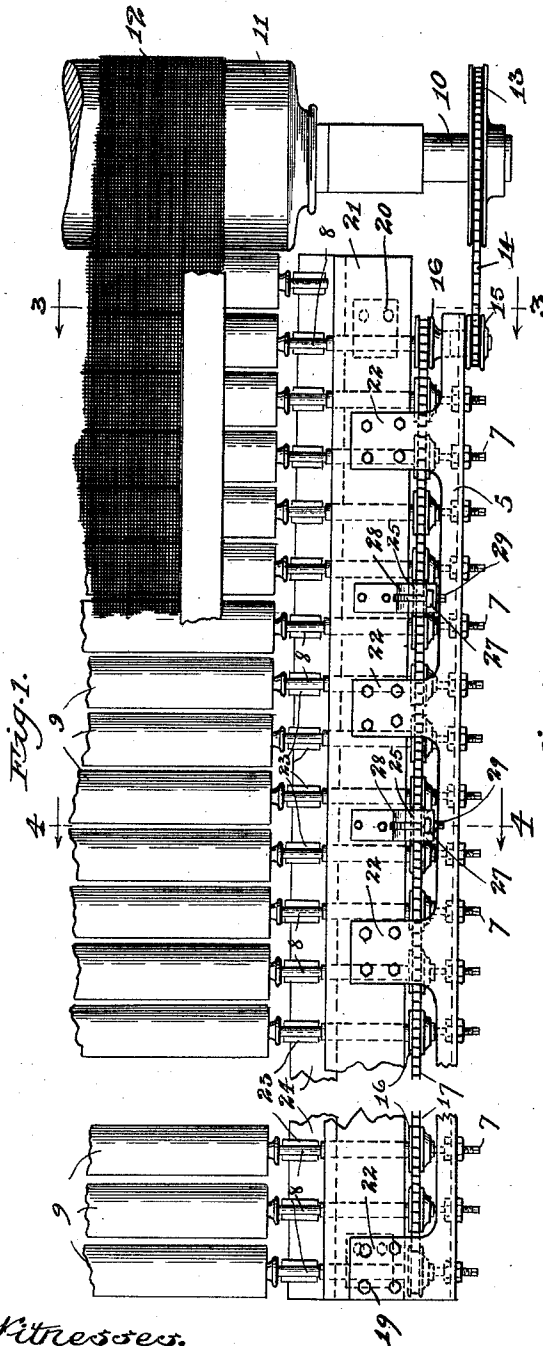


P. R. THOM.
PAPER MACHINE.
APPLICATION FILED DEC. 14, 1911.

1,018,850.

Patented Feb. 27, 1912.

2 SHEETS—SHEET 1.



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Inventor,
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2 SHEETS—SHEET 2.

Fig. 3.

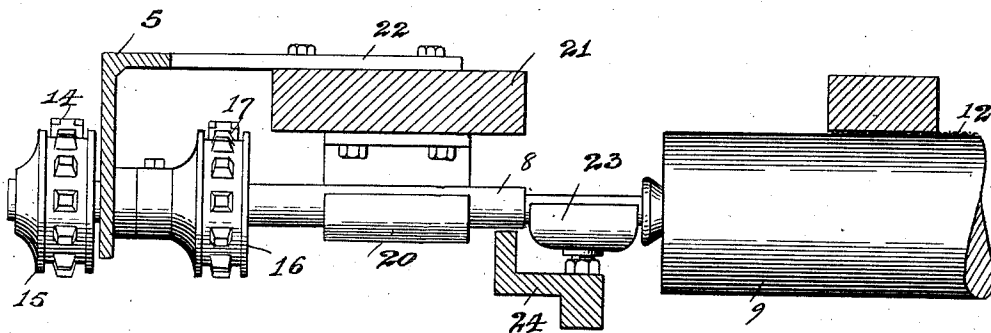
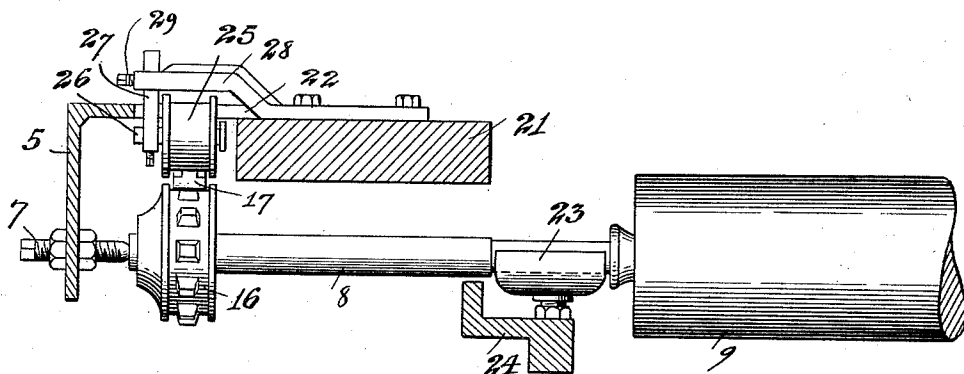


Fig. 4.



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UNITED STATES PATENT OFFICE.

PETER R. THOM, OF APPLETON, WISCONSIN, ASSIGNOR OF ONE-HALF TO KIMBERLY-CLARK COMPANY, OF NEENAH, WISCONSIN, A CORPORATION OF WISCONSIN.

PAPER-MACHINE.

1,018,850.

Specification of Letters Patent.

Patented Feb. 27, 1912.

Application filed December 14, 1911. Serial No. 665,599.

To all whom it may concern:

Be it known that I, PETER R. THOM, a resident of Appleton, in the county of Outagamie and State of Wisconsin, have invented certain new and useful Improvements in Paper-Machines, of which the following is a full, clear, and precise specification.

My invention relates to paper machines, and particularly to improved means for more efficiently driving tube rolls over which the pulp carrying belt travels.

My invention may be considered as an improvement over the construction and arrangement disclosed in my Patent No. 971,645, dated October 4, 1910. In the machine of this patent the tube rolls are each provided with a driving pinion at one end engaged by the upper leg of a driving chain belt, the belt being connected with the driving mechanism for the pulp carrying or Fourdrinier belt in such manner that the travel of the belt and the peripheral speed of the tube rolls is equal. It has been found in practice that with this arrangement there is a tendency for the chain to rise to a height above the sprocket pinions so that it is not effective and does not give constant speed of all the tube rolls.

The important object of this invention is, therefore, to provide additional mechanism for preventing such disengagement of the driving chain from the tube roll driving pinion, and to provide such mechanism which is simple and which can be readily applied to existing machines, and which is also adjustable, the attachments being in the nature of brackets or frames which can be readily mounted on the supporting table of the tube rolls, and each of which frames or brackets pivots an idler which is adjusted into engagement with the top of the driving chain belt to maintain efficient engagement of the chain belt with the sprocket wheels.

My invention will be fully understood by reference to the accompanying drawings, in which—

Figure 1 is a plan view of the front of a paper machine, showing the location of the idler supporting brackets. Fig. 2 is a side elevational view of the mechanism shown in Fig. 1. Fig. 3 is an enlarged sectional view taken from plane 3—3, Fig. 1, and Fig. 4 is an enlarged sectional view taken from plane 4—4, Fig. 1.

The main supporting table for the machine comprises sides 5 mounted on legs 6. Adjustable in these sides are pivot screws 7 for pivoting the various shafts 8, each mounting a tube roll 9. At one end of the table the main shaft 10 is suitably journaled for supporting the main roll 11, about which passes the pulp carrying or Fourdrinier belt 12, this belt passing over the tops of the tube rolls, as is well understood in the art. One end of the main shaft 10 carries a transmission sprocket 13 connected by belt 14 with a pinion 15 at the end of the shaft 8 of the adjacent tube roll, this shaft being extended to the outside of the adjacent table side for this purpose. Just within the front side of the table each of the tube roll shafts carries a sprocket pinion 16, and a belt chain 17 passes about these sprocket pinions, which are all in a row, as illustrated in Figs. 1 and 2. As shown in Fig. 2, an adjustable idler 18 may be provided on one of the legs 6 of the table for engaging the lower leg of the chain belt 17 to regulate the tension thereof. The main shaft 10 is driven by suitable mechanism which it is not necessary to show, and the main roll 11 and the tube rolls will be driven simultaneously, the gearing relations being such that the travel of the pulp carrying belt will be equal to the peripheral travel of the tube rolls, so that there will be no friction as the pulp carrying belt travels over the tube rolls. In order to relieve the end tube rolls from strains during starting of the machine, extra bearings 19 and 20 may be provided for the shafts of these end tube rolls, and, as shown, these bearings may be supported from a bar 21 suspended from the inner ends of extensions 22 on the front side of the table. Also, as illustrated in Figs. 3 and 4, the tube roll shafts may be given intermediate support in journal blocks 23 supported on a bar 24 running lengthwise of the table.

In order to prevent the upper leg of the driving chain belt 17 from rising above any of the sprocket pinions 16 I provide at suitable intervals the idlers 25 for engaging with the upper leg of the chain belt to securely hold the chain belt in efficient driving relation with the teeth of the sprocket pinions. As best indicated in Fig. 4, each idler is pivoted on a pin 26 secured at the lower end of an arm 27 adjustable vertically in the end of a bracket 28 secured to

the bar 21, a set screw 29 securing the arm 27 in adjusted position and thereby securing the idler in adjusted position with reference to the chain belt. These idlers are provided at places where the chain would be apt to leave the driving sprockets, and the driving chain belt is thus maintained in efficient driving relation with the sprocket pinions at all points.

I do not of course desire to be limited to the precise construction and arrangement which I have shown and described, as modifications, both in construction and arrangement are of course possible which would still come within the scope of my invention, and I therefore claim the following:

1. In a paper machine, the combination of a pulp carrying belt, tube rolls over which said belt travels, each tube roll having a belt pinion, a belt engaging said pinions for simultaneously driving said tube rolls, and means engaging said belt for maintaining engagement thereof with said pinions.

2. In a paper machine, the combination of a pulp carrying belt, tube rolls mounted in a row and over which said belt travels to be supported thereby, a driving pinion for each roll, a belt passing around said pinions for simultaneously rotating said pinions, means for driving said pulp carrying belt and said tube roll driving belt, and idlers disposed at intervals to maintain engagement of said tube driving belt with said pinions.

3. In a paper machine, the combination of a main roll and a plurality of tube rolls mounted in a row, a pulp carrying belt passing about said main roll and over said tube rolls, a shaft for each tube roll and a sprocket pinion thereon, a chain passing

over said sprocket pinions, driving mechanism for simultaneously driving said main roll and said chain, and idlers applied at intervals to engage with the top of said chain to hold said chain in driving engagement with said sprocket pinions.

4. In a paper machine, the combination of a supporting table, a horizontal row of tube rolls each having a supporting shaft journaled at the sides of the table and each shaft carrying a driving pinion, a driving belt passing about said pinions, means for driving said belt to cause simultaneous rotation of said tube rolls, supporting frames mounted at intervals on said table, and an idler adjustably mounted in each of said frames to engage with said belt to hold said belt in driving relation with said pinions.

5. In a paper machine, the combination of a supporting table, a plurality of tube rolls mounted on shafts extending transversely of said table and pivoted between the sides thereof, a sprocket pinion on each shaft, a chain belt having one leg passing over the tops of said sprocket pinions, means for driving said chain belt to cause simultaneous rotation of said tube rolls, frames mounted at intervals on said table, an arm vertically adjustable in each frame, and an idler pivoted to each arm to engage with the top of said chain belt to maintain driving engagement of said chain belt with said sprocket pinions.

In witness hereof, I hereunto subscribe my name this 11th day of December, A. D., 1911.

PETER R. THOM.

Witnesses:

F. SENSENHEIMER,
L. M. LACHMANN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."