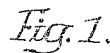


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PAPER MAKING MACHINE.  
APPLICATION FILED AUG. 18, 1910.

2 SHEETS—SHEET 1.

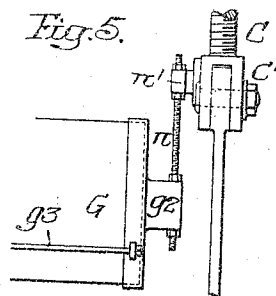
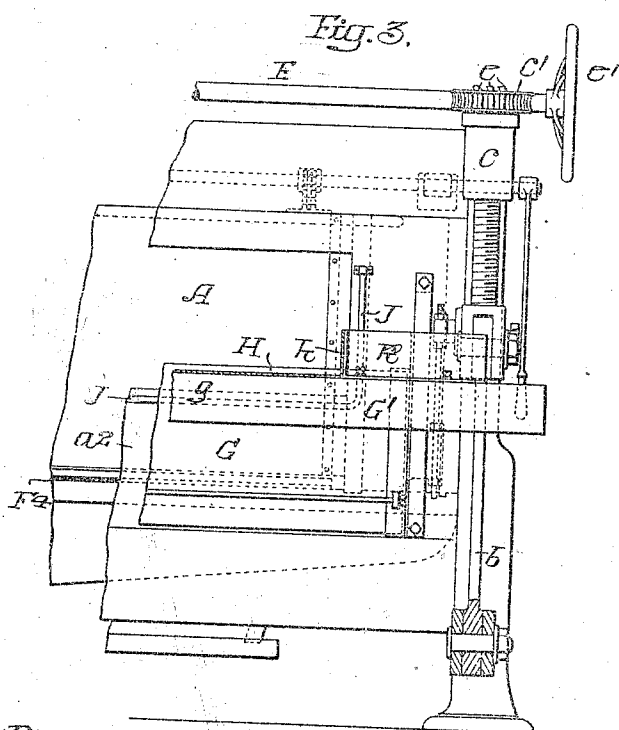
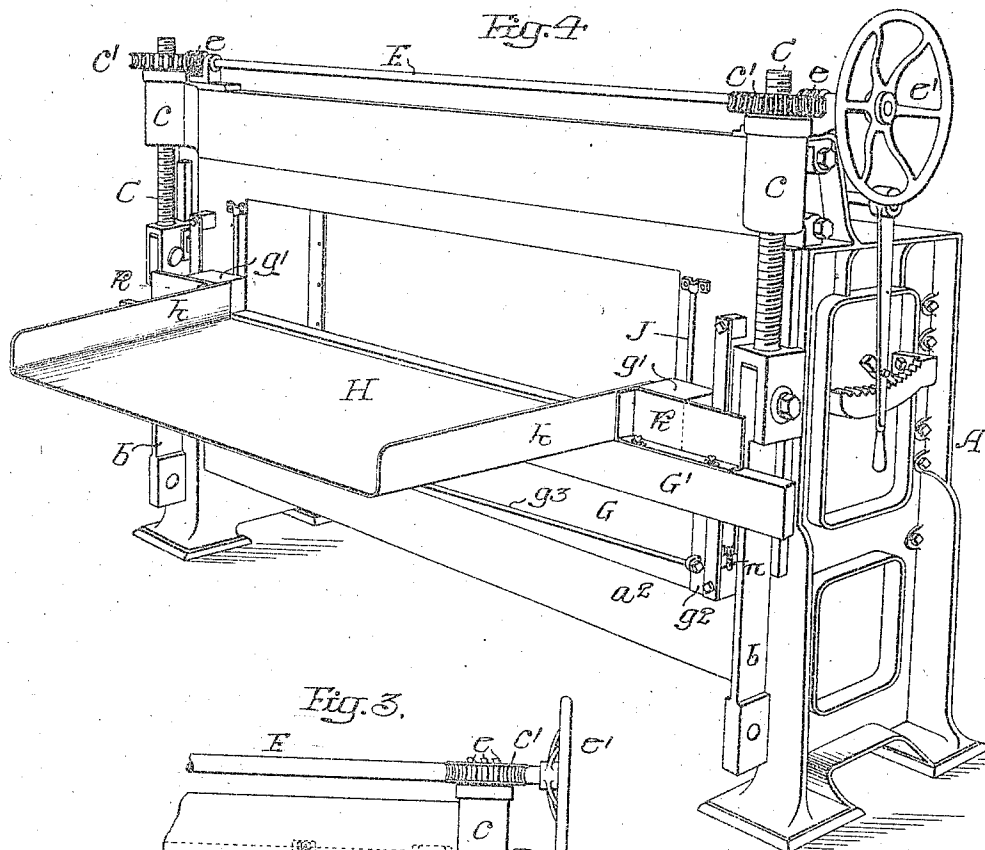


Inventor.  
Joseph A. White.  
by his Attorneys -  
Horton & Horton

989,461.

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Patented Apr. 11, 1911  
2 SHEETS—SHEET 2.



Witnesses—  
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# UNITED STATES PATENT OFFICE.

JOSEPH A. WHITE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE MOORE AND WHITE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## PAPER-MAKING MACHINE.

989,461.

Specification of Letters Patent. Patented Apr. 11, 1911.

Application filed August 13, 1910. Serial No. 577,791.

To all whom it may concern:

Be it known that I, JOSEPH A. WHITE, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Paper-Making Machines, of which the following is a specification.

One object of my invention is to construct a paper making machine of the Fourdrinier type so that the feed end of the machine can be adjusted vertically to a considerable height to give a more rapid flow to the paper stock than heretofore, as it passes from the mixing box.

A further object of the invention is to provide means for adjusting the weir of the mixing box to aline with the bed of the Fourdrinier machine.

A still further object is to provide means for regulating the flow of paper stock through the mixing box.

In the accompanying drawings,—Figure 1, is a side view of sufficient of a mixing box and the Fourdrinier machine to illustrate my invention; Fig. 2, is a longitudinal sectional view of the machine; Fig. 3, is a transverse sectional view on the line 3—3, Fig. 1, of one-half of the Fourdrinier machine; Fig. 4, is a perspective view of the mixing box, and Fig. 5, is a view of a detail of Fig. 3.

A is a mixing box of the paper making machine.

B is the frame of the Fourdrinier machine, having upper and lower longitudinal members  $b'$  and  $b''$ . This Fourdrinier machine, in the present instance, is suspended by straps  $b$  hung from vertically adjustable screws C adapted to bearings  $c$  on the mixing box A. There is one of these screws at each side of the machine and on each screw is a nut  $c'$ . Each nut is in the form of a worm wheel and meshing with the wheels are worms  $e$  on the transverse shaft E; on one end of the shaft is a hand wheel  $e'$  by which it is turned. On turning the wheel  $e'$  the frame B of the Fourdrinier machine can be raised or lowered.

$i$  is the screen on which the paper is made. This screen passes around a roll  $i'$  mounted on the shaft I at the inlet end of the machine and around the usual rolls at the opposite end of the machine.

The mixing chamber of the mixing box A is divided into two sections  $a$ ,  $a'$ , by a ver-

tically adjustable partition F forming a gate valve controlling the flow of material to the Fourdrinier machine. This valve is connected by a link  $f$  to the arm  $f'$  of a rock shaft F' mounted in bearings on the frame of the mixing box. On this rock shaft is a hand lever  $F^2$  provided with a pawl  $f^2$ , which engages the teeth of a segment  $f^3$  on the side of the mixing box. This pawl is so arranged and the teeth are so formed that the gate F can be locked in its closed position, as illustrated in Fig. 2, or in its raised position, when it is desired to allow stock to pass from one portion of the compartment to the other.

On the lower edge of the gate F is a rubber strip  $f^4$  which makes a tight seal between the bottom of the box and the gate. Adapted to slide on the face of the box A is a weir G having a horizontal section  $g$  extending to a point close to the screen roll  $i'$ . Secured to this weir is a cloth H which extends over the edge of the screen and prevents water flowing down between the screen and the edge of the weir. Blocks  $g'$  are located on the weir G on each side of the opening and adjustable plates K—K are secured to the transverse strip  $G'$  of the weir and the flanges  $h$  of the cloth H are secured to these plates, so that there is no leakage at either side of the weir.

A rubber gasket J is secured to the face  $a^2$  of the box A extending under the opening and on each side thereof, so as to prevent leakage between the box and the weir G. The weir is connected to the head  $C'$  of the screws C by adjustable rods  $n$ — $n$ , Fig. 5, so that it moves with the end of the Fourdrinier machine when it is adjusted, thus insuring the proper relation between the outlet of the mixing box and the upper surface of the screen.

On each end of the weir G are brackets  $g^2$  and extending from one bracket to the other is a brace rod  $g^3$ . The rods  $n$  extend through openings in the brackets and through openings in lugs  $n'$  on the heads  $C'$ , Fig. 5, the rods are threaded and nuts are mounted on the rods so that the weir can be adjusted vertically independent of the screws C if desired.

The operation is as follows;—The paper pulp is discharged into the mixing box from the receiving chamber A' in the ordinary manner and the valve F is raised by operat-

ing the lever  $F^2$  to the required height to allow the pulp to flow under the valve, when the pulp reaches the weir and over the screen of the Fourdrinier section of the machine. When it is desired to raise the end of the Fourdrinier section, all that is necessary is to turn the hand wheel  $e'$  which turns the nuts  $c'$  on the screws  $C$  and when the Fourdrinier frame is raised the weir  $G$  is raised with it, increasing the height of the pulp in the section  $a'$  of the mixing box and allowing a further flow of the pulp over the making wire of the Fourdrinier machine.

By the above construction the end of the Fourdrinier machine can be raised a considerable distance or lowered so as to be level or below the level, if desired.

I claim:—

1. The combination in a paper making machine, of a mixing box, a Fourdrinier frame, a vertically adjustable weir at the discharge end of the box, and means for simultaneously raising the weir and the end of the Fourdrinier machine.

2. The combination in a paper making machine, of a mixing box having a vertically adjustable weir at the discharge end, a Fourdrinier machine, screws, means for flexibly suspending the Fourdrinier machine from the screws, said screws being attached to the weir of the mixing box, bearings for the screws, nuts mounted on the screws, and means for turning the nuts to raise and lower the weir and the Fourdrinier frame.

3. The combination in a paper making machine, of a mixing box, a vertically adjustable weir at the discharge end of the box, a Fourdrinier frame, a making screen on the Fourdrinier frame, and a cloth secured to the weir and extending over the said making screen, with means for simultaneously adjusting the frame and weir.

4. The combination in a paper making machine, of a mixing box, a gate valve mounted in the box, a vertically adjustable weir mounted at the discharge end of the box, a Fourdrinier machine located adja-

cent to the said weir, a making screen mounted on the frame, adjusting mechanism at each side of the machine, flexible straps connecting the said mechanism with the frame, rods connecting the weir with the mechanism, and means for adjusting the gate of the mixing box.

5. The combination in a paper making machine, of a mixing box, a vertically arranged gate valve located in the box and dividing said box into two compartments, a rock shaft, arms on the rock shaft connected to the gate valve, an operating arm secured to the rock shaft, a double pawl pivoted to the arm, and a toothed segment on the arm of the mixing box arranged to be engaged by the other end of the pawl.

6. The combination in a paper making machine, of a mixing box, a Fourdrinier frame, a weir for the mixing box, screws for adjusting the frame and weir simultaneously, and means for independently adjusting the weir.

7. The combination in a paper making machine, of a mixing box, a weir therefor, a Fourdrinier frame mounted in the front of the mixing box, screws for adjusting the frame, adjustable rods connecting the weir with the screws, and means for raising and lowering the screws.

8. The combination in a paper making machine, of a mixing box having a discharge opening, a Fourdrinier frame adjacent the mixing box, a weir mounted to rest against the front wall of the box and carried by the said frame, means for vertically adjusting the weir, and a gasket on each side and below the opening in the box forming a water tight joint between the weir and the box.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOSEPH A. WHITE.

Witnesses:

WM. E. SHUPE,

WM. A. BARR.