

No. 776,487.

PATENTED DEC. 6, 1904.

J. L. BONNEY.  
PAPER MAKING MACHINE.  
APPLICATION FILED DEC. 14, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

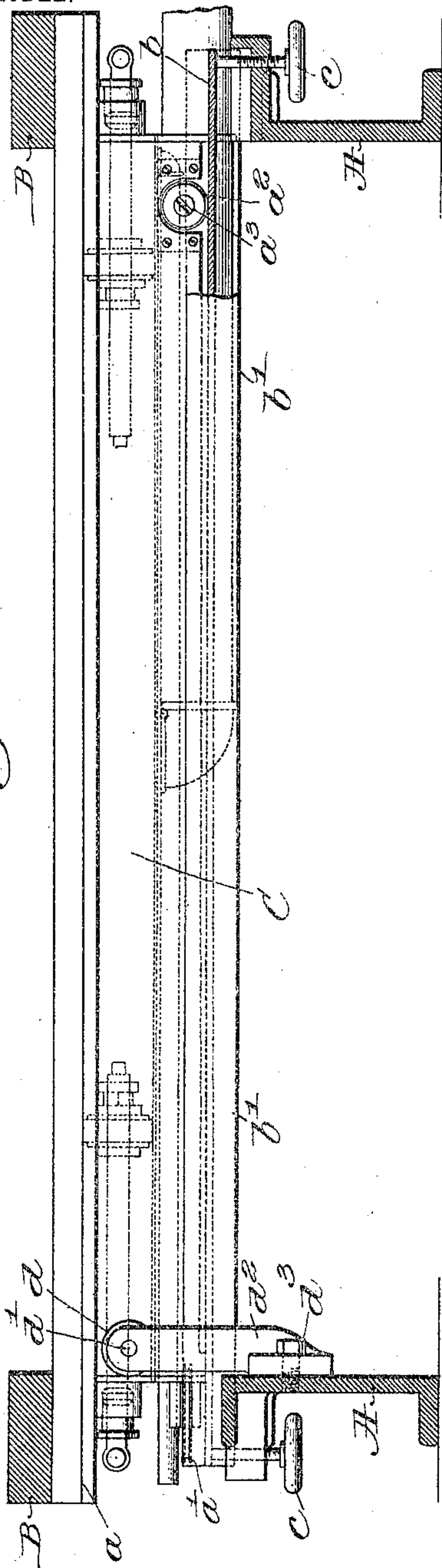


Fig. 3.

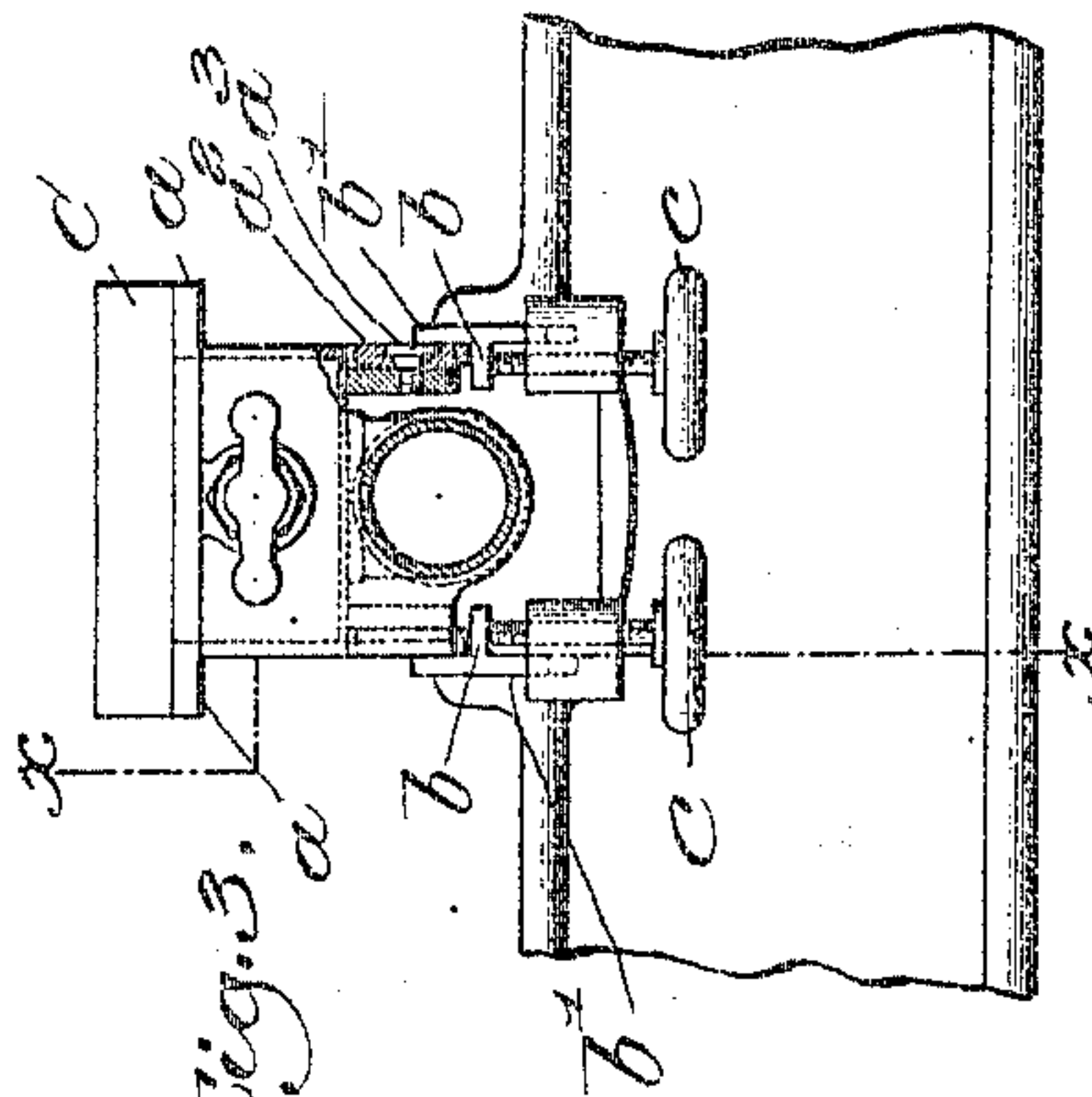
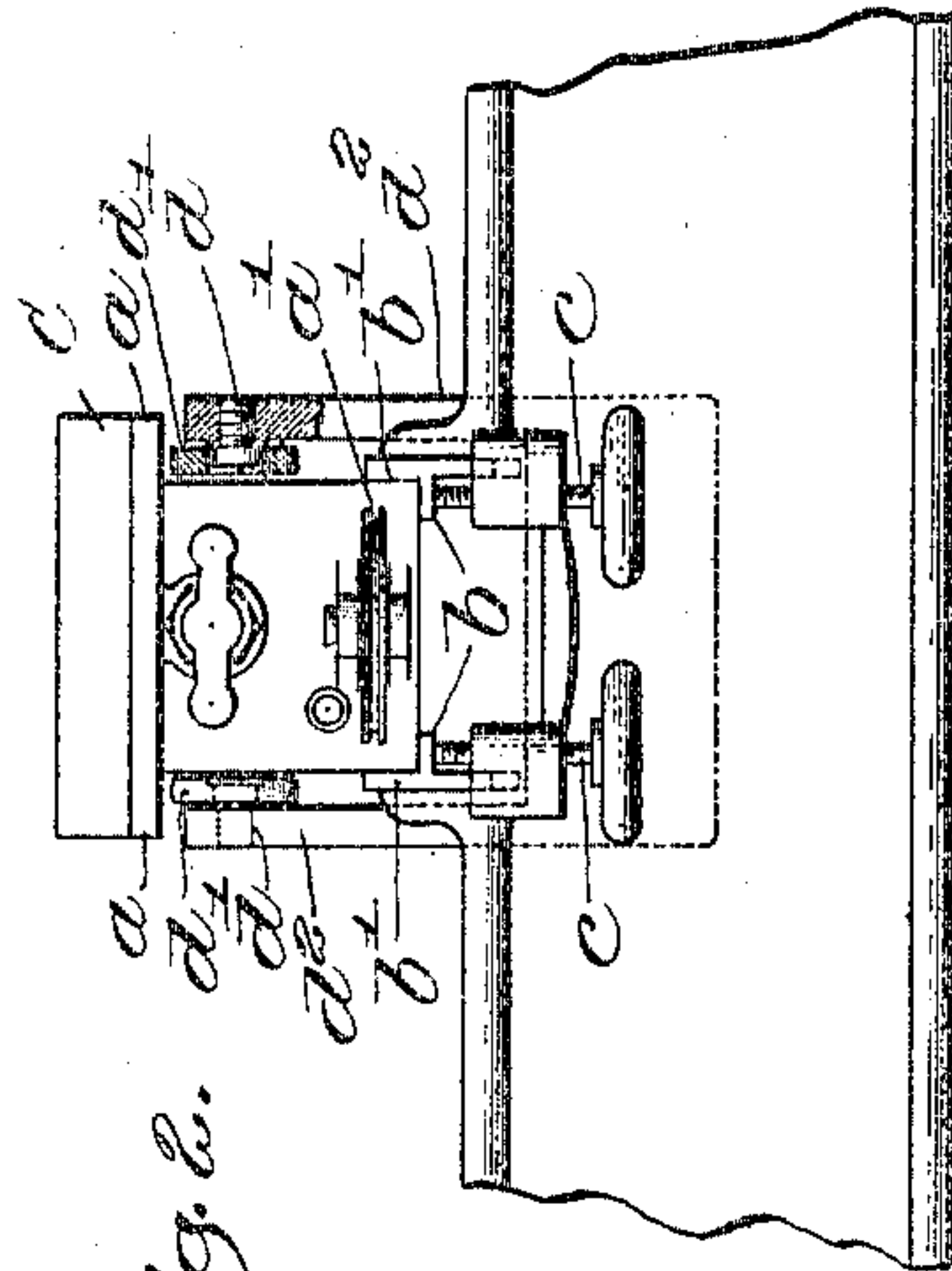


Fig. 2.



Witnesses:

Fred S. Grunhof.  
J. Wm. Lutton.

Inventor.  
Joseph L. Bonney,  
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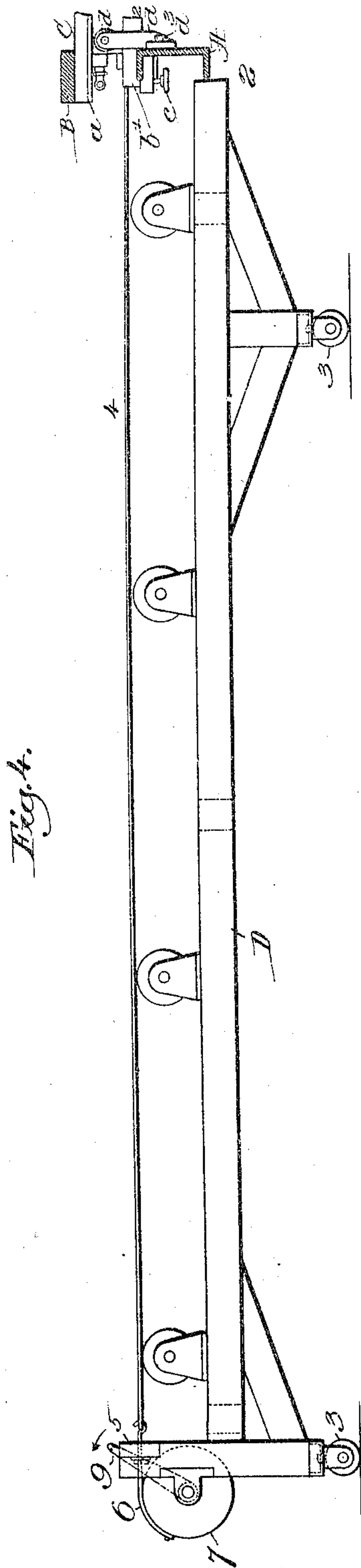
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2 SHEETS—SHEET 2.



witnesses:  
Fred. S. Grunhuf.  
G. Wm. Lutton

Inventor.  
Joseph L. Bonney,  
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# UNITED STATES PATENT OFFICE.

JOSEPH L. BONNEY, OF LAWRENCE, MASSACHUSETTS.

## PAPER-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 776,487, dated December 6, 1904.

Application filed December 14, 1903. Serial No. 185,014. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH L. BONNEY, a citizen of the United States, residing at Lawrence, in the county of Essex and State of Massachusetts, have invented an Improvement in Paper-Making Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object to improve the construction of that class of paper-making machine known as the "Fourdrinier," and my improvements are addressed more especially to the suction-boxes which are sustained in the machine, so that they may readily and expeditiously be removed and replaced when desired with the expenditure of but a minimum outlay of strength and labor.

In accordance with my invention the suction-box (which, it will be remembered, is very heavy) is provided near one end with antifriction means shown as wheels, the peripheries of which are shown as projecting a little beyond the bottom of the box and contacting normally with cross-tracks shown as angle-bars sustained in the side frames, so that they may be adjusted vertically when positioning the suction-boxes vertically with relation to the belt and moving parts. Each side of the suction-box near its upper end has a track that when the suction-box occupies its operative position is sustained above and out of contact with antifriction means shown as rollers sustained by the framework at that side thereof at which the suction-box is applied to the machine or from which the suction-box is drawn out. When a suction-box is to be withdrawn, that end thereof which is to lead is lowered onto the wheels sustained by the frame, thus supporting both ends of the suction-box on wheels, each wheel running on its own track, and by a chain or cord connected with the suction-box the latter is drawn from its position crossing the frame and deposited on a track, so that it may be handled easily. In the same way when a suction-box is to be applied to the machine, the box mounted on the track is placed opposite the box-receiving opening, and with the chain or rope the box is moved, so that the wheels of the

box meet and run onto the tracks supplied to receive them and the tracks of the suction-box meet and rest on the wheels sustained by the frame, and by further strain on the propelling means the box is inserted in working position.

Figure 1 shows in section part of the side frames of a Fourdrinier machine with a suction-box in working position. Fig. 2 is a left-hand end view thereof; Fig. 3, a right-hand end view, the dotted line  $\alpha$  showing the section at right end of Fig. 1; and Fig. 4 shows the track used for handling the suction-box.

The side frames A, the top rails B, between which run the usual Fourdrinier belt, (not shown,) are and may be of any usual construction, as may also be the suction-box, with the exception of the tracks and wheels connected therewith, as will be described.

Each suction-box C has near its upper end at each side an outturned flange  $\alpha$ , the under side of which constitutes a track. One end of each box is provided with a sheave  $\alpha'$ , over which passes the chain or rope used to move the suction-box longitudinally. Each suction-box at one end at opposite sides, as shown at the right in Fig. 1, is provided with antifriction means shown as wheels  $\alpha^2$ , that are free to revolve about studs  $\alpha^3$ , suitably sustained by the suction-box.

The side frames A receive tracks  $b$ , extended from vertical webs  $b'$ , that are guided in suitable grooves of the side frame. The rollers  $\alpha^2$  when the suction-box is in working position rest on the tracks  $b$ , as represented in Fig. 1, and at the right, Fig. 3, while at the opposite or left-hand side of the machine the under side of the box rests upon the upper side of the track. The tracks  $b$ , which are detachable and adjustable in the framework, are sustained by and may be adjusted by screws  $c$ , that may be turned to lower the left-hand end of the track when it is desired to remove a suction-box, the adjusting devices being turned in a direction to permit that end of the box to descend, so that the tracks  $\alpha$  may rest on antifriction means shown as wheels  $d$ , supported on studs  $d'$ , extended from uprights  $d^2$ , secured to the side frame by screws  $d^3$ . When a suction-box is rolled into position, the



tracks *b* will be so located that as the wheels *a*<sup>2</sup> roll over said track and the tracks *a* slide over the wheels *d* the upper side of said suction-box will come under and not touch the top rails B, and thereafter the screws *c* will be turned in a direction to raise both ends of the track *b* until the top of the suction-box contacts firmly with the under sides of said top rails B, leaving the left-hand end of the track resting by its weight on the tracks *b*, thus exerting sufficient friction to retain the box from longitudinal movement. Before the top of the left-hand end of the suction-box meets the rail B above it the tracks *a* are lifted from the wheels *d*. To remove the suction-box, the tracks *b* will be lowered through the screws *c* until the tracks *a* rest on the rollers *d*, thus sustaining both ends of the box on wheels. Now the end 2 of the truck D, having trundles 3, will be brought opposite the end of the suction-box, and a cable 4, connected at one end with the cross-bar 5 of the truck, will be led about the sheave *a'*, and the opposite end of the cable will be connected with a flexible strap 6, attached to a windlass 7, the shaft of which has bearings 8 sustained by said truck, and the handle 9 will be turned in the direction of the arrow to pull the suction-box out of the frame from its left-hand side onto the rollers 12 of the truck. When the suction-box has been deposited on the truck, the latter may be rolled to any position desired and the box emptied. The box may easily be shoved by hand from the truck into the machine.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine of the class described, a suction-box provided with a track along the sides thereof, and antifriction-rollers carried by the frame of the machine upon which said track may rest, said antifriction-rollers being disposed at one side of the frame and adjacent one end of the suction-box.

2. In a machine of the class described, a suc-

tion-box having near one end a plurality of wheels, and a connected track along each side, combined with two transversely-extended adjustable tracks on which said wheels run, means to move said tracks vertically, and a plurality of wheels sustained by the framework on which the tracks of the suction-box rest when the adjustable track is lowered to put the suction-box in its inoperative position preparatory to removing the suction-box.

3. In a machine of the class described, a suction-box having near one end a plurality of wheels, and a connected track along each side, combined with two transversely-extended adjustable tracks on which said wheels run, means to move said tracks vertically, and a plurality of wheels sustained by the framework on which the tracks of the suction-box rest when the adjustable track is lowered to put the suction-box in its inoperative position preparatory to removing the suction-box, and a sheave sustained by said suction-box and adapted to be embraced by a rope when the suction-box is to be removed from the machine.

4. In a machine of the class described, a suction-box having tracks extended from and along its opposite sides and provided at each side and adjacent one end thereof, with a roller to sustain the suction-box in its longitudinal movement.

5. In a machine of the class described, a suction-box having tracks along its opposite sides, rollers carried at one side of the frame of the machine on which said tracks are adapted to rest, rollers carried at one end of the suction-box and tracks on the frame on which said last-named rollers are adapted to rest.

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

JOSEPH L. BONNEY.

Witnesses:

NEWTON P. FRYE,  
DANIEL W. MAHONY.