

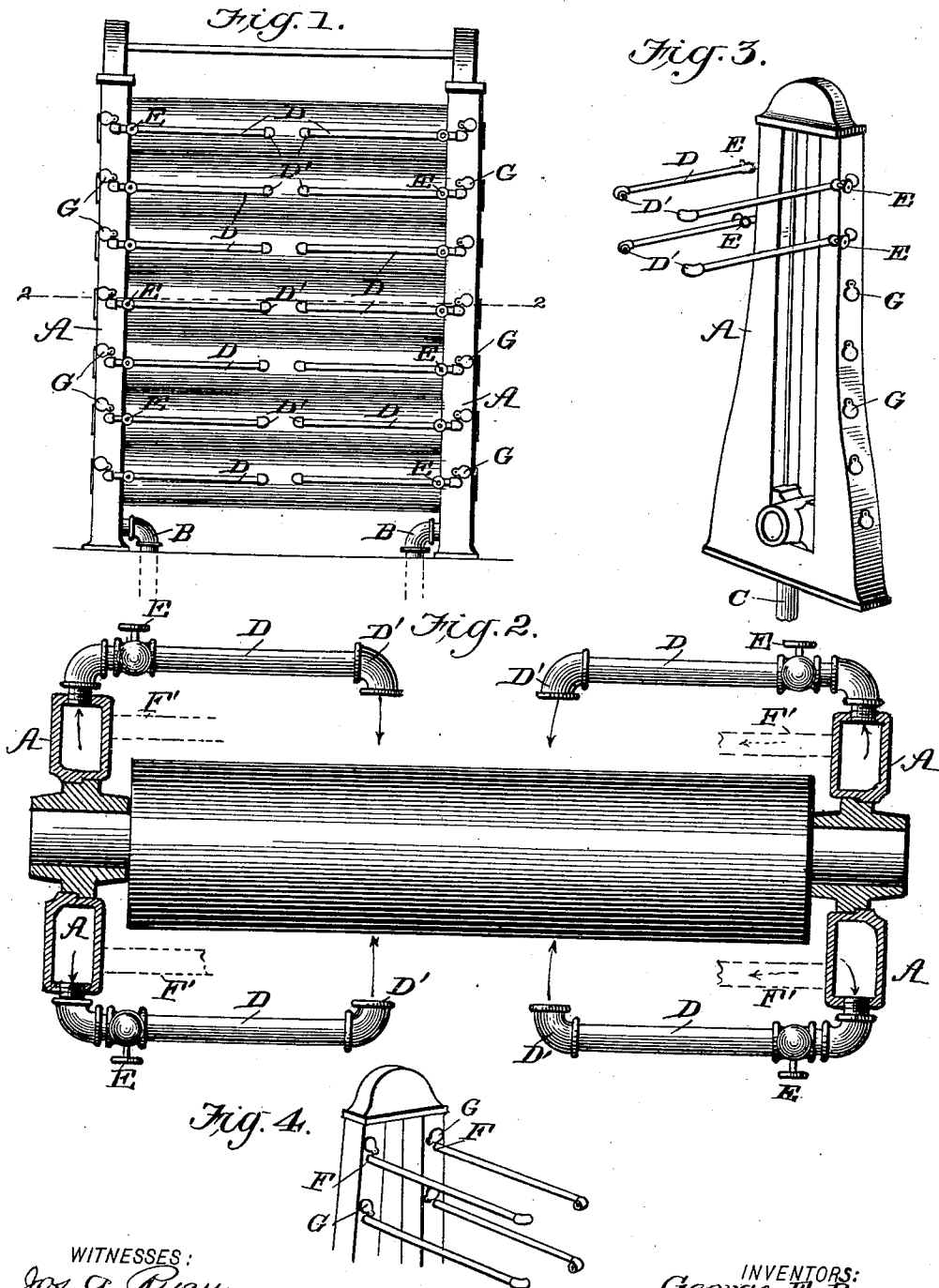
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Patented Aug. 6, 1901.

G. F. DREW & C. DICKINSON.
MEANS FOR COOLING CALENDER ROLLS.

(Application filed Nov. 30, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

GEORGE F. DREW, OF BRUNSWICK, AND CHARLES DICKINSON, OF LISBON FALLS, MAINE.

MEANS FOR COOLING CALENDER-ROLLS.

SPECIFICATION forming part of Letters Patent No. 680,135, dated August 6, 1901.

Application filed November 30, 1900. Serial No. 38,214. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. DREW, residing at Brunswick, in the county of Cumberland, and CHARLES DICKINSON, residing at Lisbon Falls, county of Androscoggin, State of Maine, have made certain new and useful Improvements in Means for Cooling Calender-Rolls, of which the following is a specification.

10 Our invention is an improvement in means for supplying air to the surfaces of calender-rolls of paper-machines, and has for an object to avoid unnecessary supply-pipes and utilize the hollow stands or housings of the calendering-machines in supplying the air to the discharge-pipes; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

20 In the drawings, Figure 1 is an elevation of a stand of calender-rolls with our invention applied. Fig. 2 is a cross-sectional view on about line 2 2 of Fig. 1. Fig. 3 is a detail perspective view of one of the side stands or housings, parts being removed; and Fig. 4 is a detail perspective view of a portion of a stand, showing the discharge-pipes connected with the stands at the inner sides thereof.

30 In the manufacture of paper, more especially news paper, it is usual to blow cool or cold air against the surfaces of the calender-rolls to control their temperature, thus regulating and controlling their expansion or contraction and by this means avoiding imperfections in the sheet of paper as it passes over the rolls. At present this is accomplished by bringing pipes up through the floor, with branches extending horizontally from the same to discharge to the rolls. This is clumsy and cumbersome. The upright pipes are very much in the way in passing the paper through the rolls, and it is hardly practicable to use the pipes on both sides of the rolls without interfering with the feed of the paper. By our invention we supply the air from a blower or otherwise to the hollow stands or housings A, which are provided with bearings for the ends of the rolls and which are necessarily at the ends of the calendering-surfaces, and then

conduct the air from the hollow stands to discharge it to the rolls, as shown in Figs. 1 and 2.

The pipes leading from the blower (not shown) may be arranged, as shown at B in Fig. 1, to open into the inner sides of the stands A below the lowermost roll, or such pipes may be arranged, as shown at C in Fig. 3, to open into stands A at the bottom thereof, or other means may be provided for delivering the air discharged from the blower or other source of supply into the hollow stands A without departing from the principles of our invention.

The discharge-pipes D (shown in Figs. 1 and 2) connect with the hollow stands at one end and are arranged to discharge at their other ends preferably by means of suitable nozzles D' onto the calender-rolls. In Figs. 1 and 2 the pipes D connect with the stands A at the edges thereof, and, as shown in Fig. 2, the discharge-pipe may be arranged to discharge to the opposite sides of the rolls, and each of the discharge-pipes may be provided with a damper E in the form of a valve, so the supply of air to any of the rolls can be regulated or shut off, as may be desired. It may be desirable in some instances to connect the discharge-pipes with the inner sides of the stands, as shown at F in Fig. 4 and indicated at F' in dotted lines in Fig. 2. Dampers G may be pivoted to the stand adjacent to the point of connection of the discharge-pipes to close the opening for such pipes when the latter are removed.

By our invention we avoid the expense of the unnecessary upright pipes and by dispensing with said pipes avoid the objections incident to their use, thus furnishing an improved construction at a reduced cost which can be put up and taken down in less time than the ordinary construction, occupies no floor-space, and is entirely out of the way, allowing free and unobstructed space for a machine-tender to work in. Further, the air can be directed against both the front and rear sides of the rolls, and by supplying the cool air to the stands or housings which carry the bearings for the rolls such air in passing

through the stands assists in keeping the bearings of the rolls cool.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination of a stack of calender-rolls, the hollow stand or housing, means whereby air may be supplied to said hollow stand, and a discharge device leading from said stand to discharge to the rolls substantially as described.

2. The combination of the calender-rolls, a hollow stand therefor having bearings for the rolls, means whereby air may be supplied to the stand, and a discharge-pipe leading from said stand to discharge to the rolls substantially as set forth.

3. In calender-rolls substantially as described the combination of a hollow stand or housing to receive the cool air having bearings for the rolls, and discharge-pipes leading from such stand to discharge to the rolls whereby the stand may form a conduit for the cooling-air and the latter may operate in passing to cool the bearings for the rolls substantially as set forth.

4. A stand for calender-rolls made hollow for the passage of air and having openings for the connection therewith of discharge-pipes and provided with dampers for closing

said openings when the discharge-pipes are disconnected substantially as set forth.

5. The combination of calender-rolls, stands or housings therefor made hollow for the passage of air, and discharge-pipes connected with said stands and extending horizontally thence to discharge to the rolls substantially as set forth.

6. The apparatus herein described comprising rolls, a hollow stand having bearings therefor, means by which air may be supplied to such stands, and discharge-pipes connected with the stands and leading horizontally thence to discharge to the rolls, substantially as set forth.

7. The apparatus herein described comprising rolls, hollow stands provided with bearings therefor, means by which air may be supplied to such stands, the latter having openings for the connection of the discharge-pipes, discharge-pipes leading from said openings horizontally to discharge to the rolls, and dampers for closing the openings when the discharge-pipes are removed substantially as set forth.

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