

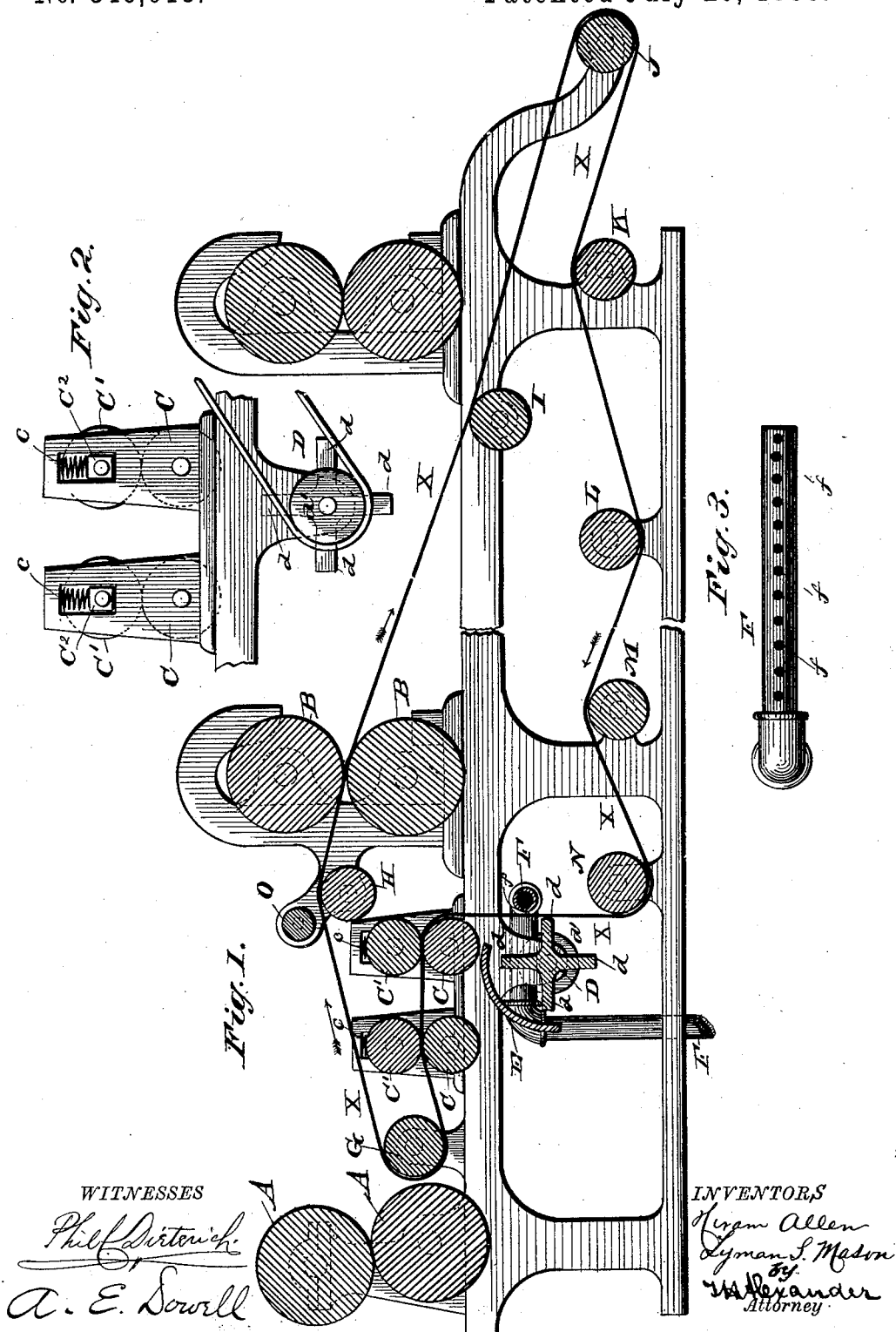
(No Model.)

H. ALLEN & L. S. MASON.

FELT CLEANING DEVICE FOR PAPER MAKING MACHINES.

No. 346,013.

Patented July 20, 1886.



# UNITED STATES PATENT OFFICE.

HIRAM ALLEN AND LYMAN S. MASON, OF SANDY HILL, NEW YORK; SAID  
ALLEN ASSIGNOR TO SAID MASON.

## FELT-CLEANING DEVICE FOR PAPER-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 346,013, dated July 20, 1836.

Application filed May 5, 1836. Serial No. 201,207. (No model.)

*To all whom it may concern:*

Be it known that we, HIRAM ALLEN and LYMAN S. MASON, of Sandy Hill, in the State of New York, have invented certain new and useful Improvements in Felt-Cleaning Devices for Paper-Making Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a vertical section of a portion of a paper-making machine embodying our invention. Fig. 2 is a detail side elevation showing the construction of the squeeze-rolls. Fig. 3 is a detail view of the shower-pipe.

This invention relates to improvements in paper-making machines, having especial reference to the mechanism for cleaning the first, or, as it is called, the "wet felt," and its object is to wash the said felt thoroughly and effectually and remove all superfluous water therefrom without stopping the process of paper-making, or, in other words, disconnecting the web of paper from the machine.

The invention is particularly applicable to and designed for Straight Fourdrinier machines, in which it has heretofore been necessary to remove the web of paper when it is desired to cleanse the felt, thus retarding and stopping the manufacture of the paper.

Referring to the accompanying drawings, A designate the couch-rolls, or rolls between which the web of paper passes to enter on the first felt.

B B are the first press-rolls, between which the first felt, X, carries the paper.

C C' C' are two pairs of squeeze-rolls having bearings in the frame of the machine between the couch-rolls and first press-rolls. The upper rolls, C', have their journals in the sliding boxes, C, which are pressed upon by the coiled springs c, so as to force them in contact with the lower rolls, C. Instead of using the springs, the upper rolls may be weighted to force them downward, the use of the springs being deemed preferable.

G, H, I, J, K, L, M, and N are directing-rolls for the first felt, X, the rolls G being ad-

jacent to the couch-rolls and the roll N below the squeeze-rolls. The arrows in the drawings show the direction in which the first felt travels.

D is a beater-wheel provided with the arms d, to strike against the surface of the vertical portion of the first felt, as shown. The shaft of the said wheel is journaled in the frame of the machine, and is provided with a pulley, d', by which and a proper belt it is rotated from the common source of power, or from another roll driven thereby.

E is a curved guard-plate over the felt-beater wheels to protect the felt from being sprinkled with water thereby after or while passing the squeeze-rolls. The said guard-plate is secured to the frame of the machine.

F is a shower-pipe provided with the perforations f, and receiving water from any proper source of supply. The said pipe sprinkles water on the side of the vertical part of the first felt opposite that on which the beater-wheel operates.

O is a blow-roll located above the squeeze-rolls, and in front of the press-rolls to keep the web of paper from the felt, and so exclude the air and keep the paper from blowing.

The operation of the invention is as follows: The first felt after carrying the web of paper between the press-rolls B, and being wet thereby, is returned by the rolls J, K, L, M, and N toward the roll G. Between the roll N and the press-rolls it is sprinkled on one side by the shower-pipe F, and beaten on the other by the beater-wheel D, so as to be thoroughly cleaned, if soiled. It is then passed immediately through squeeze-rolls C C', which remove all superfluous water, and upon reaching the roll G it is in condition to carry the web of paper toward the press-rolls. By this construction and arrangement the repeated removal of the web of paper from the machine is entirely avoided, and the paper consequently made with more facility and rapidity.

It is obvious by the use of the squeeze-rolls, located, as above described, between the couchers and first press-rolls, in connection with the beater-wheel, shower-pipe, and blow-roll, the washing and cleaning of the first or wet felt is

effected, the felt being sufficiently cleaned to make good paper while continuously running; also, that our felt-washing apparatus, which may consist of one, two, or even three pairs of squeeze-rolls, felt-beater, shower-pipe, and attachments, may be located at some other place on the felt and be equally effective, but we prefer it located as above described.

Having described our invention, we claim—

- 10 1. In a paper-making machine of the Straight Fourdrinier type, the combination of the squeeze-rolls, the beater-wheel, and the perforated shower-pipe and blow-roll, constructed and arranged substantially as shown and de-
- 15 scribed, for the purpose specified.

2. In a Straight Fourdrinier paper-making machine, the combination of the couch-rolls

A, the press-rolls B, the squeeze-rolls C C' C', situated in front of the press-rolls, the upper rolls, C', being vertically adjustable, the felt-directing rolls G H I J K L M, the felt-directing roll N, nearly vertically below the squeeze-rolls, the perforated shower-pipe F, and the beater-wheel D and blow-roll O, all constructed and arranged substantially as and 25 for the purposes specified.

In testimony that we claim the foregoing as our own we affix our signature in presence of two witnesses.

HIRAM ALLEN.  
LYMAN S. MASON.

Witnesses:

JAMES M. FERRIS,  
GRENVILLE M. INGALSBE.