J. A. WHITE.

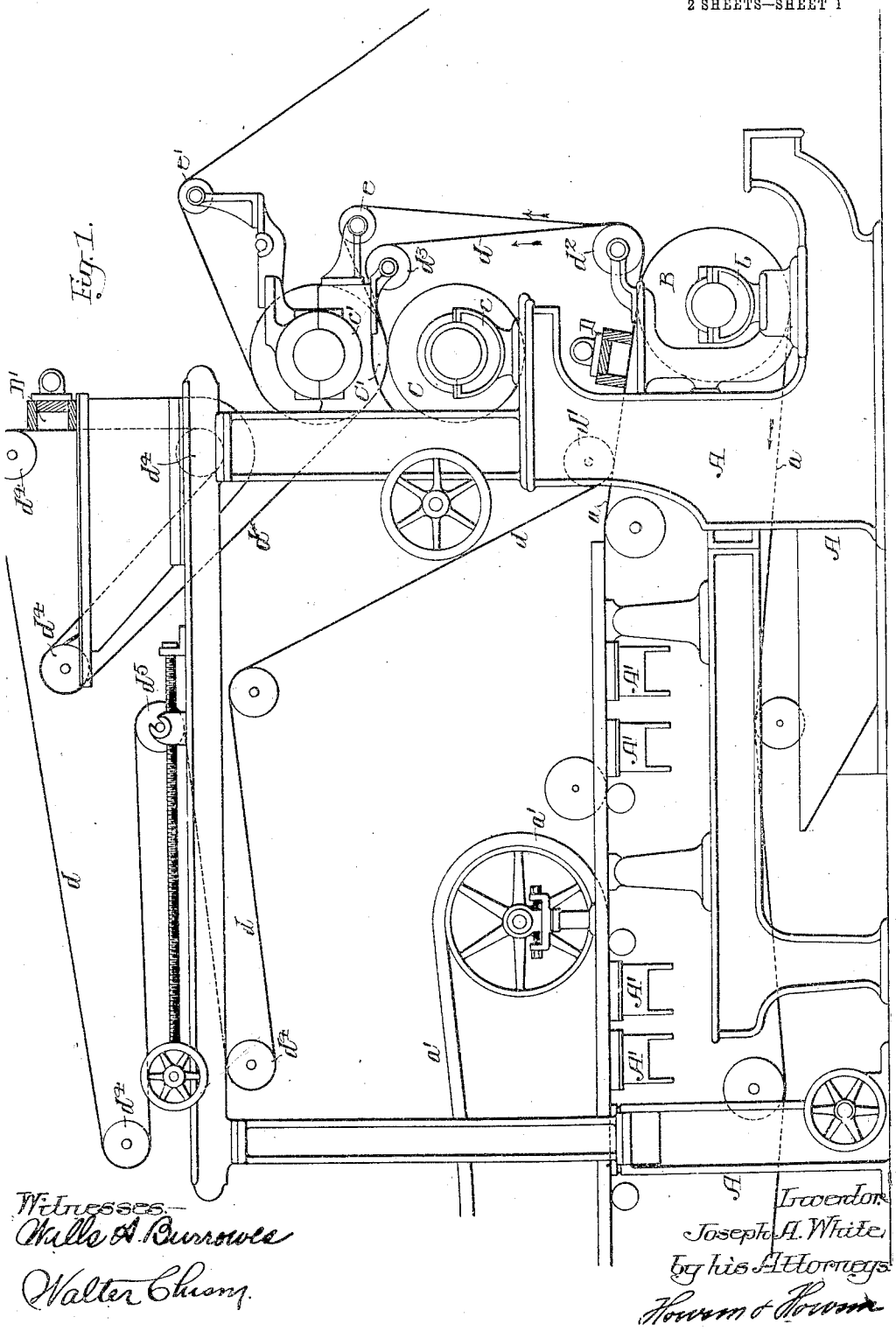
PAPER MAKING MACHINE.

APPLICATION FILED JUNE 7, 1909.

941,968. Patented Nov. 30, 1909.

2 SHEETS—SHEET 1

Fig. 1.



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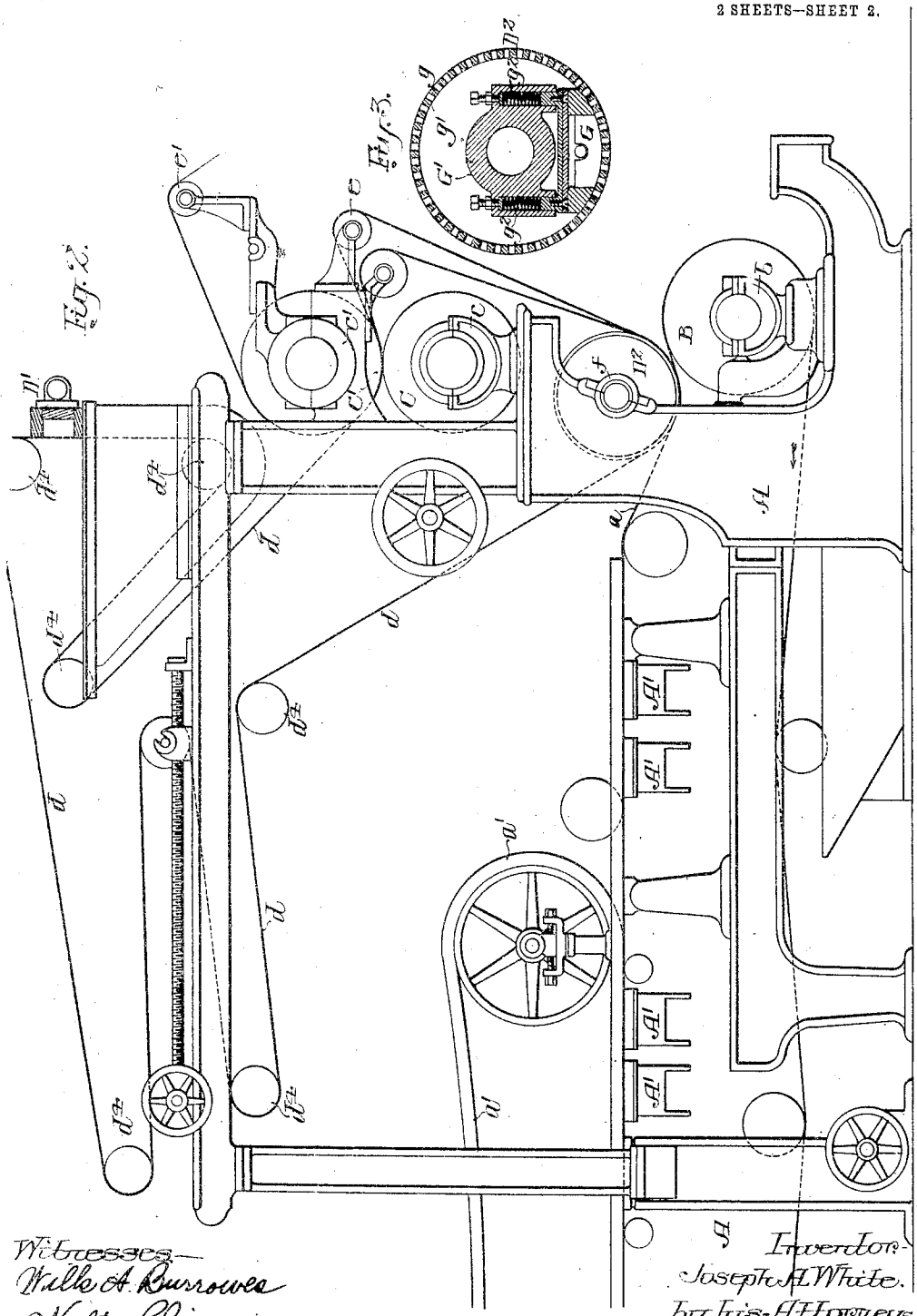

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UNITED STATES PATENT OFFICE.

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

PAPER-MAKING MACHINE.

941,968. Specification of Letters Patent. Patented Nov. 30, 1909.

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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.

My invention relates to certain improvements in the delivery end of a paper making machine, and the object of the invention is to provide a suction device for lifting the paper off of the making screen or cylinder, prior to its delivery to the press rolls, and to subject that surface of the paper that was in contact with the screen to the action of the bare press roll, so as to obliterate the wire marking. This object I attain in the following manner, reference being had to the accompanying drawings, in which:—

Figure 1, is a side view of one end of a Fourdrinier paper making machine illustrating my invention; Fig. 2, is a view illustrating a modification; and Fig. 3, is a sectional view of the revolving suction box illustrated in Fig. 2.

A is the frame of a Fourdrinier machine.

a is the screen which passes through the entire length of the machine and around a single couch roll B in the present instance, which is mounted in the bearing *b* at the rear end of the frame.

A′, A′ are the usual suction boxes and *a′*, *a′* are the deckles.

C, C′ are press rolls mounted in bearings *c*, *c′* on the frame of the machine, and *d* is the endless felt which passes around rollers *d′*, d^2, one on each side of a suction box D mounted above the lower roll B and taking the place of the ordinary upper couch roll. This suction box can be of any ordinary type common in paper making machines, and is so located as to create a suction as the paper passes under it, causing the paper to draw off from the screen *a*, the paper adhering sufficiently to the felt *d* that it is carried by it around the roller d^2. The felt after it leaves the roller d^2 passes around the roller d^3 while the paper is separated from the felt *d* and passes around a roller *e*, then both pass between the two press rolls C, C′. The felt leaves the press roll first, passing around the ordinary guide rollers d^4 and around a tension roll d^5; the position of this roll being regulated by the usual tension apparatus. The felt after it leaves the press rolls passes a suction box D′, which tends to clean it and remove any particles of fiber adhering to it. The paper passes from the upper portion of the upper press roll around the roll *c′* to the drying machine.

By the above construction I dispense with the upper couch roll and place a suction box on the upper side of the screen *a*, so as to draw the water out of the paper, in place of squeezing it by means of the two couch rolls, and to lift the paper off the screen so that it will more readily pass from the screen and to prevent the marking of the paper by the wire screen *a*. The paper then passes with the felt between the two press rolls C—C′. It will be noticed that the felt is between the press roll C and the paper, but the paper is in direct contact with the bare press roll C′. The surface of the paper that is in contact with this roll is the surface that was in contact with the making screen *a*, so that after the paper passes between the press rolls the wire marking is obliterated.

The suction box D, shown in Fig. 1, is a fixed suction box, but I may substitute for it a revolving suction box D^2 illustrated in Figs. 2 and 3. This revolving suction box D^2 has trunnions which are mounted in bearings *f* of the frame A and it consists of a shell *g* having perforations *g′*, and mounted within the shell is the fixed suction section G pressed down onto the lower portion of the shell by springs g^2, which are carried by a fixed frame so that while the shell revolves the suction box remains stationary and the paper and the felt *d* are carried around with the shell. In this instance the two guide rolls *d′*, d^2 are dispensed with as the rotating suction shell takes their place.

While my invention is particularly adapted for use in connection with a Fourdrinier machine, it will be understood that it can be used in connection with a circular paper making machine where the paper is formed on a cylinder. In this instance I mount the suction box so as lift the paper off the surface of the cylinder, or if the screen is used, in this instance off the screen, the particular idea being to utilize a suction box for the purpose of removing paper from the paper forming apparatus whether it be a screen, felt, or a perforated cylinder.

I claim:—

The combination in a paper making machine of a frame, a couch roll at the rear

end of the frame, a making screen adapted to pass around the couch roll, a suction box mounted on the upper side of the screen before it passes around the couch roll and by which the paper is lifted off the screen, an endless belt mounted above the screen and adapted to pass under the suction box, press rolls between which the paper and the felt pass, guides for directing the paper from the couch roll to the press roll, the surface of the paper that was in contact with the making screen being brought into contact with the bare press roll, whereby the screen marks are obliterated.

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