H. J. MEADER.

PAPER MACHINE.

APPLICATION FILED JULY 16, 1908.

923,870.

Patented June 8, 1909.

2 SHEETS—SHEET 1.

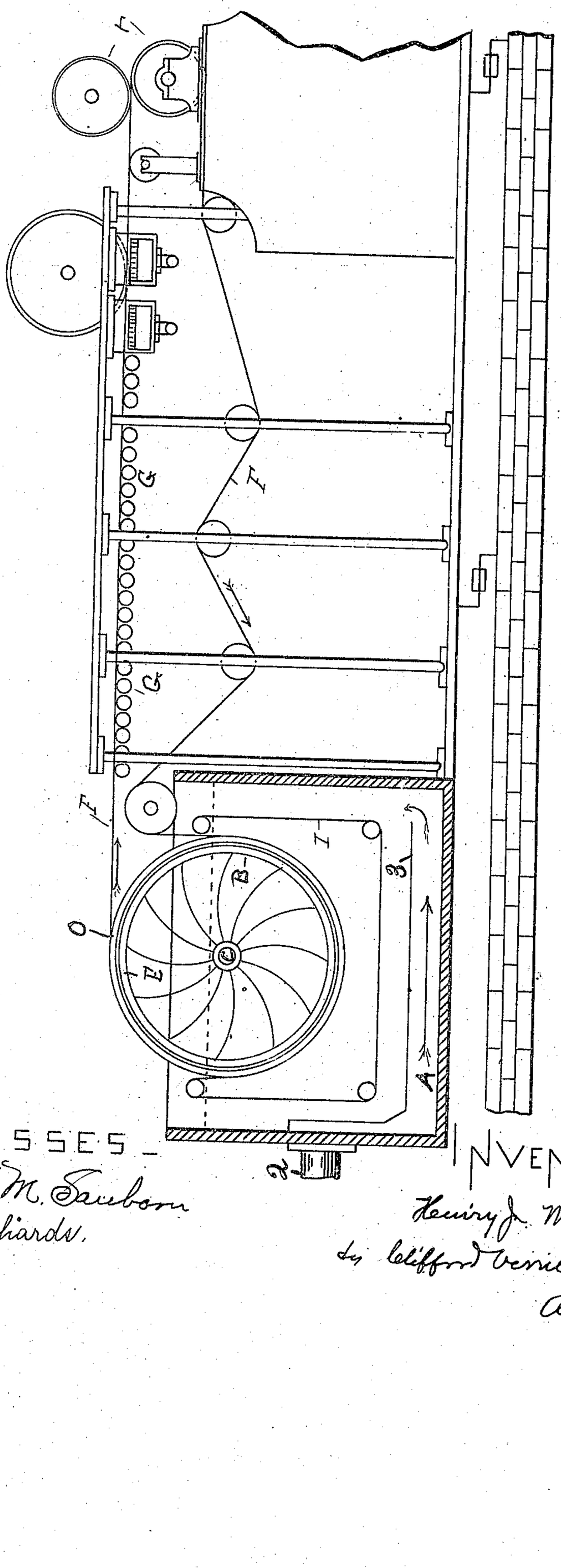

Fig-1-

WITNESSES—

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Marion Richards.

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2 SHEETS—SHEET 2.

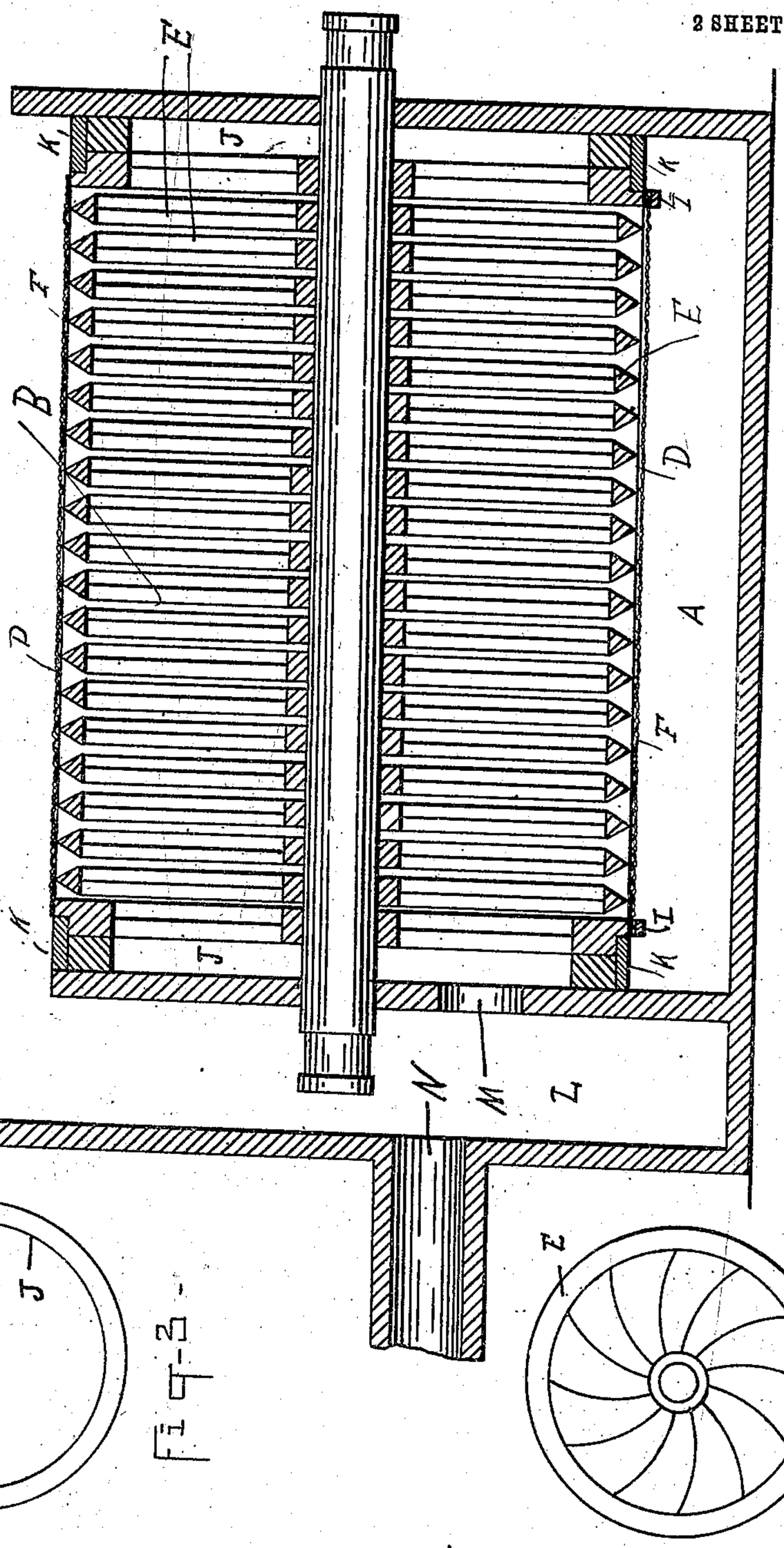

FIG-1-

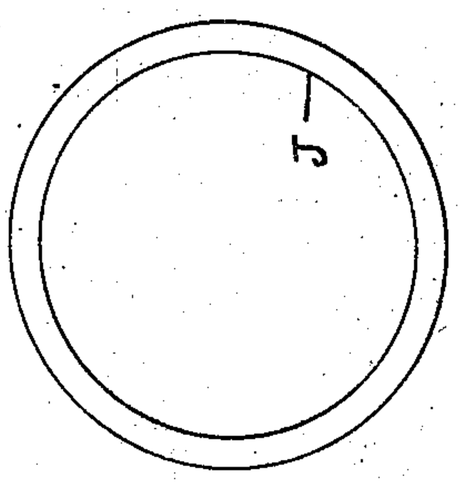

FIG-2-

FIG-4-

WITNESSES—

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UNITED STATES PATENT OFFICE.

HENRY J. MEADER, OF BRADFORD, MASSACHUSETTS.

PAPER-MACHINE.

No. 923,870 Specification of Letters Patent. Patented June 8, 1909.

Application filed July 16, 1908. Serial No. 443,777.

To all whom it may concern:

Be it known that I, HENRY J. MEADER, a citizen of the United States, residing at Bradford, in the county of Essex and Commonwealth of Massachusetts, have invented new and useful Improvements in Paper-Machines, of which the following is a specification.

My invention relates to improvements in paper machines and more particularly to the type of paper machines known as cylinder machines wherein the paper stock is made to adhere to a wire mesh upon a cylinder immersed in a vat containing the stock and my improvement consists in providing the cylinder with an endless wire mesh which travels around and upon the cylinder and is carried over a series of drying rolls to couch rolls spaced apart a long distance from the cylinder.

It further relates to certain details of construction to be hereinafter more particularly set forth and claimed.

In the drawings herewith accompanying and making a part of this application, Figure 1 is a side elevation partly in section of as much of a paper machine as is necessary to show the application of my invention thereto; Fig. 2 is a transverse vertical section of Fig. 1 taken on a line passing through the cylinder shaft; Fig. 3 is a plan of the guide ring, and Fig. 4 is a detail elevation of one of the component parts of the cylinder.

Same characters of reference refer to like parts.

In said drawings A is a vat for containing the stock and B is a cylinder mounted in said vat on a shaft C. The vat has an inlet port 2 for admission of the stock thereinto and it is also provided with a false bottom 3 which causes the stock entering through port 2 to pass down into the bottom of the vat under the cylinder and below the false bottom taking the direction indicated by arrows as seen in Fig. 1, whereby the stock is caused to become thoroughly commingled in the vat and is in a perfectly homogeneous condition through all parts where it comes in contact with the mesh thus producing a more even adhesion of paper to the mesh than would be the case if the stock was projected directly against any part of the mesh. The cylinder is provided with a series of mesh supporting bars D on the periphery of the cylinder rings E. Around the cylinder and adapted to have continuous motion is a wire mesh F, a portion of which is at all times submerged in the vat. The mesh after leaving the cylinder passes over drying rolls G and thence to the couch rolls H and thence back over such rolls which impart tension and change direction as may be desired, to the cylinder, the travel being in the direction indicated by arrows in Fig. 1. A deckle I is of the usual construction and mounted wholly within the vat which prevents it from becoming injured by any means outside the vat and also keep it free from dirt or any matter liable to injure the cylinder or paper stock and this arrangement of the deckle is found to be exceedingly advantageous. Between the cylinder and the end of the wall of the vat is a guide ring J having a suitable packing K. Outside of the vat is a water reservoir L and leading from the cylinder thereto is a port M and leading from the water reservoir is a pipe N connected with a suction pump not shown which may be of any convenient construction. The cylinder may be driven either by the mesh or in any convenient way.

The operation of my improved device is as follows. The vat in which the cylinder is mounted is supplied with a continuous supply of paper stock through port 2 which by reason of the false bottom becomes perfectly assimilated and homogeneous before it is presented to the mesh and is by reason thereof presented to the mesh in a uniform manner. The suction pump tends constantly to produce a vacuum in the cylinder thus causing the stock to tend to penetrate the cylinder and consequently to adhere uniformly to the endless wire mesh. The wire mesh leaves the cylinder at the point O taking with it the paper stock which is adhering thereto whence it is carried over the drying rolls where a large portion of the water is extracted, and thence on to the couch rolls where it is taken from the mesh. Its advantages are that it is simple in construction, presents the paper stock uniformly to the wire mesh and retains it upon the mesh until it has become firmly compacted together after becoming dried to a considerable degree on the mesh and before it reaches the couch roll, the couch roll being spaced apart a considerable distance from the cylinder instead of being adjacent to the cylinder as in the cylinder machines as at present constructed where the couch rolls take the paper sheet from the cylinder before any of the water is extracted therefrom. Another advantage is that the deckle is entirely concealed within the vat and not ex-

posed or in the way of other parts of the machinery or of workmen employed about the vat.

Having thus described my invention and its use I claim:—

1. In a cylinder paper machine, a vat having a false bottom, a rotatable cylinder mounted therein above said false bottom, a port leading into the vat below said false bottom, an endless wire mesh adapted to travel around said cylinder and means for imparting motion to said mesh.

2. In a cylinder paper machine, a rotatable cylinder, an endless wire mesh adapted to travel around said cylinder, couch rolls and drying rolls intermediate said cylinder and said couch rolls, and means for imparting motion to said wire mesh.

3. In a cylinder paper machine, a vat, a rotatable cylinder mounted therein, an endless wire mesh adapted to travel around said cylinder and a deckle mounted wholly within said vat.

In testimony whereof, I have signed my name to this specification in presence of two subscribing witnesses this sixth day of June, 1908.

HENRY J. MEADER.

In presence of—
FRED ROOTES,
GEO. HANCOCK.