

(No Model.)

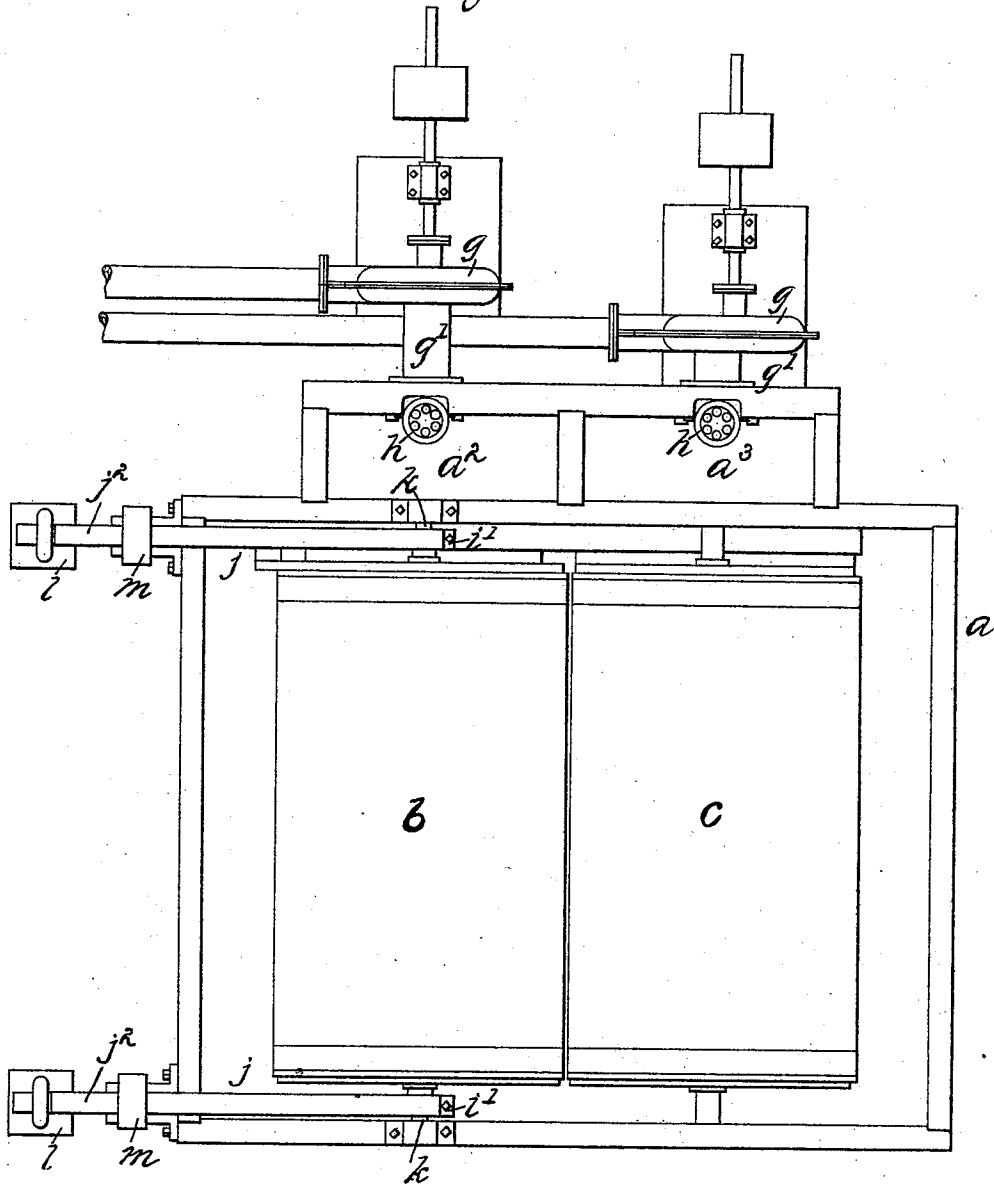
2 Sheets—Sheet 1.

A. W. CASE.
PAPER MAKING MACHINE.

No. 498,764.

Patented June 6, 1893.

Fig. 1



Witnesses
Chas. B. Chandler
G. B. Jenkins.

Inventor
Albert Willard Case.
By Chas. L. Burdett
Attorney.

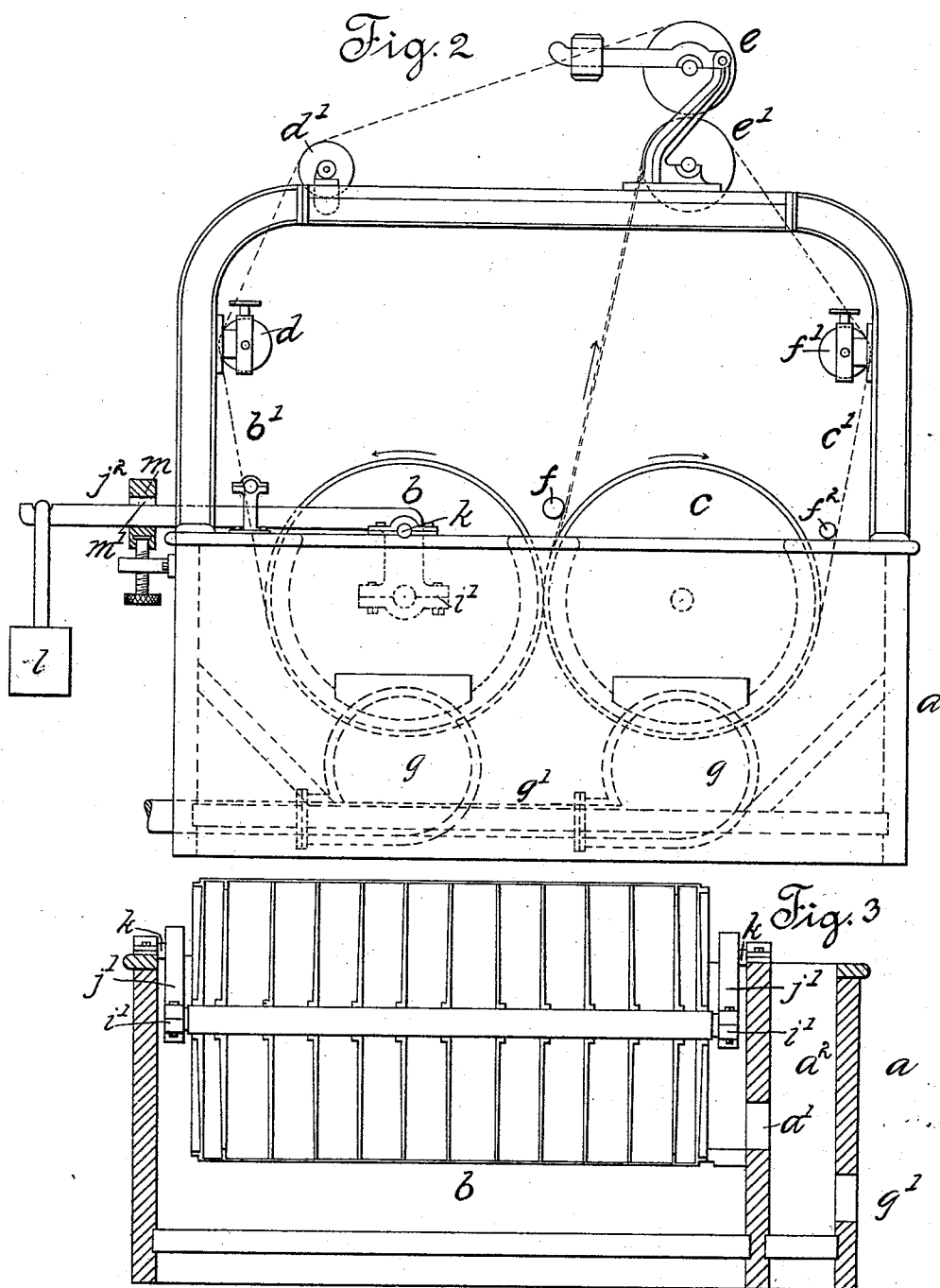
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2 Sheets—Sheet 2.

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Chas. B. Chandler
G. S. Jenkins.

Inventor
Albert Willard Case.
By Chas. L. Burden
Attorney.

UNITED STATES PATENT OFFICE.

ALBERT WILLARD CASE, OF HIGHLAND PARK, CONNECTICUT.

PAPER-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 498,764, dated June 6, 1893.

Application filed May 19, 1892. Serial No. 433,570. (No model.)

To all whom it may concern:

Be it known that I, ALBERT WILLARD CASE, of Highland Park, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Paper-Making Machines, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My invention relates to the particular class of cylinder paper making machines and the object of the invention is to provide a machine of this class in which paper of any desired thickness may be made.

To this end my invention consists in the combination in a single vat of two paper making cylinders, and in the details of the several parts making up the apparatus as a whole, as more particularly hereinafter described and pointed out in the claims.

Referring to the drawings:—Figure 1 is a detail top or plan view of a portion of a machine embodying my invention. Fig. 2 is a detail end view of the same. Fig. 3 is a detail view in front elevation of the machine, with parts broken away to show construction.

In the accompanying drawings the letter *a* denotes a vat of any convenient construction and dimension, usually rectangular in shape. Within this vat the paper making cylinders *b* and *c* are mounted on suitable bearings, preferably with their axes in the same horizontal plane and with their peripheries so arranged as to run nearly or quite in contact with each other. The surfaces of the cylinders are made in the usual way but instead of being covered with a wire the latter is extended to form the aprons *b' c'* appurtenant to the respective cylinders *b c*; the wire appurtenant to the cylinder *b* extending around its under surface up back of a squeeze roll *f* between the press rolls *e e'*, passing around the upper one *e*, over a guide roll *d'* and a stretch roll *d*, the several rolls supporting it and guiding it in its movements around the cylinder. The wire *c'* appurtenant to the cylinder *c* passes around underneath the cylinder, up over the lower press roll *e'*, back of a stretch roll *f'* and guide roll *f''*. These two cylinders turn in opposite directions, as indicated by the arrows, so as to cause both wires to pass upward together and at a distance apart determined by the dis-

tance between the surfaces of the respective cylinders. The vat is filled to a height usually just below the centers of the cylinders with paper pulp in suitable condition for forming on the wires toward which it is drawn by suction in the usual manner, an opening *a'* in the side wall of the vat leading into an extension, the compartments *a² a³* of which communicate in each instance with the induct *g'* of a pump *g*, each pump being arranged in suitable position at one side of the vat and communicating with the extensions, the induct pipes being provided with gates controlled by the hand screws *h* so as to open or close the induct to a degree sufficient to govern the amount of flow of the fluid from within the vats. One of the cylinders *b* is adjustable toward and from the other, preferably by being suspended in a bearing *i'* formed in the end of the short arm *j'* of the bent lever *j* that is pivoted, as by means of the pin *k*, to the vat and has an arm *j²* extending beyond the edge of the vat and adapted to support a weight *l* by means of which the degree of pressure of the cylinders against each other may be controlled. This arm *j²* of the lever *j'* extends through an adjustable yoke *m* that has a slot *m'* slightly longer than the lever is wide, the yoke being attached to a fixed part of the vat or frame in such manner as to permit of a vertical adjustment. By setting the lower end of the slot at a given height the least distance between the adjacent surfaces of the two cylinders may be determined while the slight play allowed to the end of the lever in the slot will enable the cylinder *b* to yield slightly so as to permit the passage between the two cylinders of any slight projection or increased thickness of pulp that may be accidentally drawn between the two wires and the cylinders. The pulp forming upon the two wires is of a thickness determined to some extent by the distance between their surfaces and the sheet adheres to the wire *c'* and turns downward with the wire as it passes around the press roll *e'*. At any point beyond this the sheet may be taken off by a felt in the usual manner.

The paper may be made of any desired thickness determined in part by the least distance between the adjacent surfaces of the two cylinders *b c*.

The lower squeeze roll *f* is provided as a

means of removing some of the superfluous moisture from the sheet, a large portion of the remainder being removed between the two press rolls *e e'*.

5 The stretch rolls are used in order to adjust the wires to the proper tension.

I claim as my invention—

10 1. In a paper making machine, in combination, a pair of paper making cylinders mounted side by side in a vat, the wires appurtenant to each cylinder passing around them and extending for some distance adjacent to each other and over the respective guide rolls, all substantially as described.

15 2. In a paper making machine, in combination, the paper making cylinders mounted side by side in a vat, one of said cylinders being adjustably mounted with reference to the

other, and the wires appurtenant to the respective cylinders extending above the vat 20 around guide rolls, all substantially as described.

3. In a paper making machine, in combination, a vat, a paper making cylinder mounted therein, a second cylinder mounted opposite 25 the first and supported in bearings on the ends of the rocking levers, the adjustable yokes engaging the outer arms of the levers and the wires appurtenant to the respective cylinders extending beyond them and around the guide 30 rolls, all substantially as described.

ALBERT WILLARD CASE.

Witnesses:

A. WELLS CASE,
E. C. STANLEY.