

1,079,247.

J. HUSSONG.
DYEING MACHINE.
APPLICATION FILED MAY 2, 1907.

Patented Nov. 18, 1913.

2 SHEETS-SHEET 1.

Fig. 5.

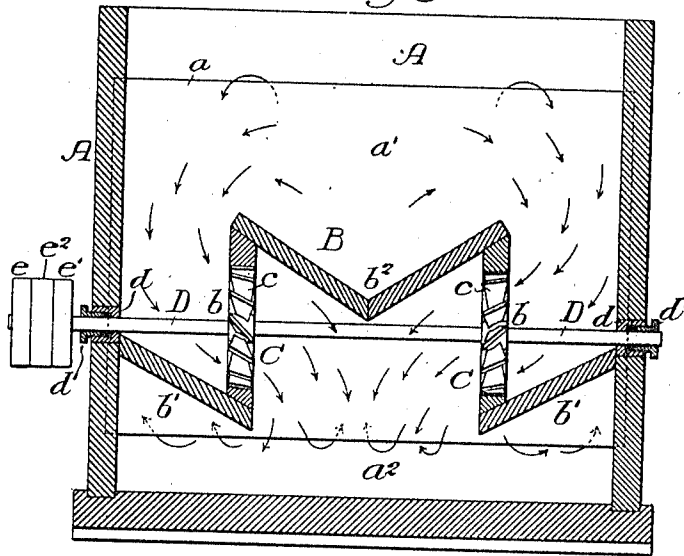
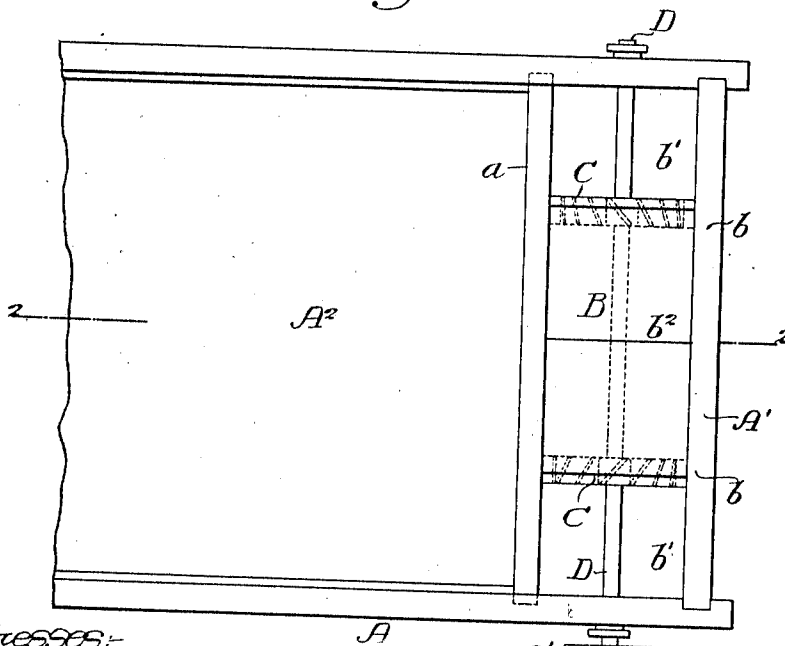


Fig. 1.



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JOSEPH HUSSONG, OF CAMDEN, NEW JERSEY.

DYEING-MACHINE.

1,079,247.

Specification of Letters Patent.

Patented Nov. 18, 1913.

Application filed May 2, 1907. Serial No. 371,378.

To all whom it may concern:

Be it known that I, JOSEPH HUSSONG, a citizen of the United States, residing in Camden, New Jersey, have invented certain improvements in Dyeing-Machines, of which the following is a specification.

My invention relates to certain improvements in circulating means for dyeing machines, having for its object the provision of circulating wheels so mounted that they will be entirely under the surface of the solution in the dye vat and so arranged that the dye liquor will be thoroughly mixed at each complete circulation. This object I attain in the following manner, reference being had to the accompanying drawings; in which:—

Figure 1, is a plan view of part of a dye vat illustrating my improved circulating means, the slats and sticks being omitted. Fig. 2, is a vertical section on the line 2—2, Fig. 1, of a complete dye vat, and Fig. 3, is a transverse vertical section on the line 3—3, Fig. 2.

In the above drawings A is the dye vat in which is a vertical partition *a* situated near one end of the vat and separating the circulating chamber A' from the chamber A² for receiving the material to be dyed. A zigzag partition B separates the circulating chamber A' into two compartments *a'* and *a*² and consists as shown in Fig. 3, of two vertical sections *b—b*, two oppositely inclined sections *b'* at each end and a central section *b*² formed with its members inclined as shown. There are openings in each vertical section *b—b* for the reception of the circulating wheels C—C, which are mounted on a transverse shaft D, and the blades *c* of each circulating wheel are preferably set in opposite directions so that the liquor will be drawn through the sections *b* in the direction indicated by the arrows. The two currents from each side of the circulating chamber come together at the center in the lower half of the chamber *a*² and thoroughly mix, one with the other, so that when they pass under the partition *a* and into the dyeing chamber A² they are in proper condition to come in contact with the material to be dyed. It is to be noted that this circulation and stirring of the dye liquor takes place each time it makes the complete circuit of the tank.

The shaft D is mounted in bearings *d—d* provided with stuffing boxes *d'* shaped in

the ordinary manner and packed so as to prevent escape of dye liquor. On the end of the shaft in the present instance are two fast pulleys *e—e* and a loose pulley *e*² so arranged that a straight and a cross belt may be used. The object of this construction is to permit the direction of the rotation of the shaft to be reversed so as to cause the dye liquor to flow first in the direction of the arrows, Fig. 3, and then by shifting the belts, the direction of rotation of the shaft can be reversed so that the direction of flow of liquor will also be reversed. This is very essential in certain types of machines and is completely set forth and claimed in my Patent No. 822,844, dated June 5, 1906.

While I have shown the sections *b'* and *b*² of the partition B inclined so as to direct the flow of the liquor in the circulating chamber, they may be arranged horizontally without departing from the essential features of the invention.

In order that the circulation may be as complete as possible and to thoroughly mix the liquor in the dye vat, I preferably arrange the perforated bottom in the form of slats *a*² as shown in Fig. 2, and I also make the perforated top *a*² above the yarn in the same manner. The slats in the bottom of the vat are made in independent sections and the slats of each section are arranged on edge, as shown, being spaced a given distance apart so as to allow for the circulation of the liquor and yet prevent the yarn passing through the openings between the slats. By arranging the slats on edge it is possible for them to be made relatively narrow as they can be of any depth desired.

In making the sections of slats I preferably space the slats by blocks *a*³ and then run bolts through the several slats and blocks, countersinking the heads and nuts of the bolts so that one section can be placed close to another, the openings between the slats throughout the entire vat being the same.

The upper slats are mounted on the yarn carrying frame and are arranged in substantially the same manner as described in connection with the slats *a*².

The frame I consists of side members carrying sticks *a*⁵ and uprights *i* to which the hoisting mechanism is attached:—the uprights being, however, illustrated in Fig. 2 as broken away.

Under operating conditions, the dye liq-

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