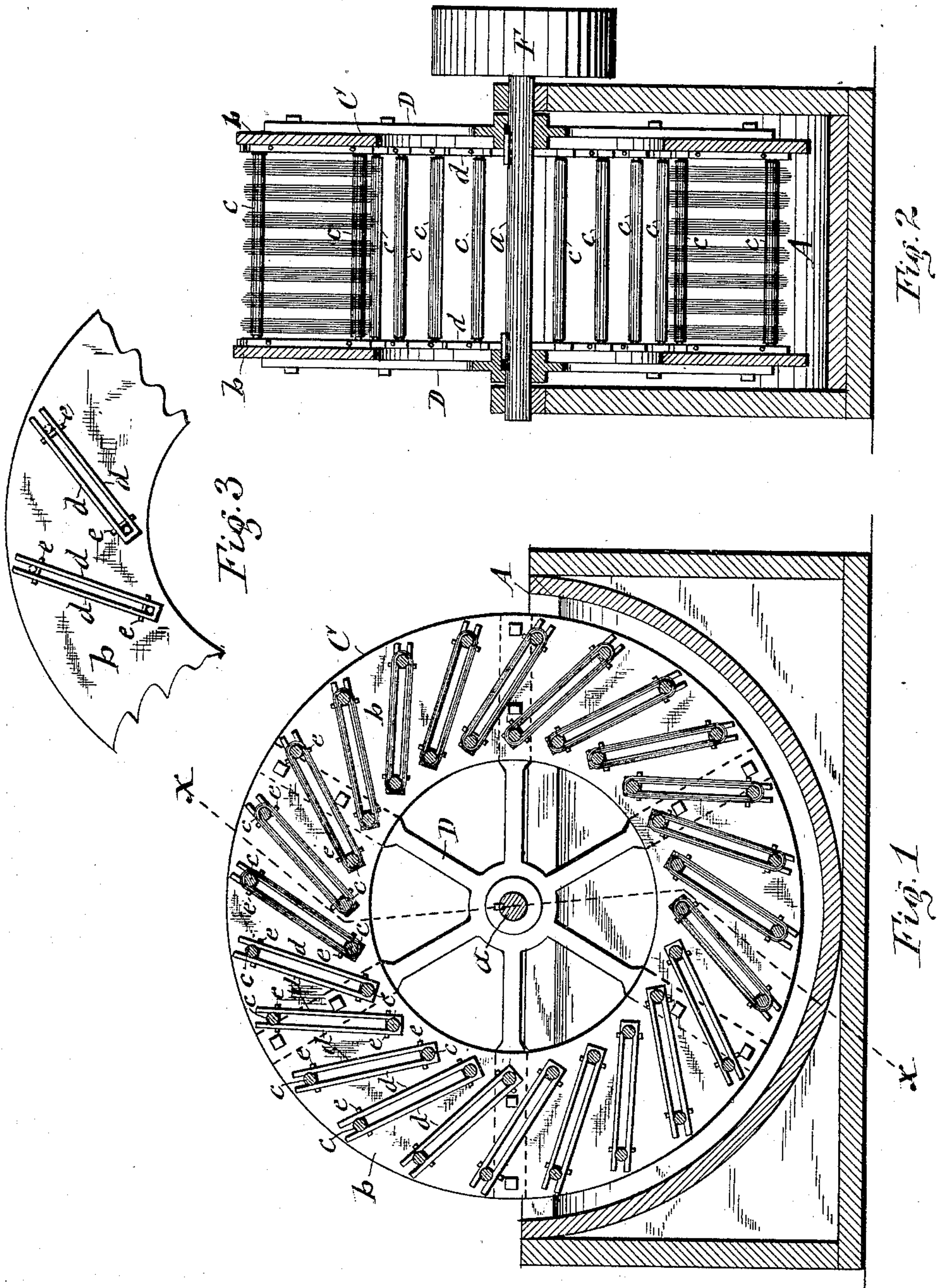


(No Model.)

D. DUNN.
YARN DYEING MACHINE.

No. 433,398.

Patented July 29, 1890.



WITNESSES:

C. L. Burdison
J. J. Gaas.

INVENTOR:

Wm. H. Dunn
BY
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UNITED STATES PATENT OFFICE.

DENNIS DUNN, OF PHILADELPHIA, PENNSYLVANIA.

YARN-DYEING MACHINE.

SPECIFICATION forming part of Letters Patent No. 433,398, dated July 29, 1890.

Application filed October 25, 1889. Serial No. 328,158. (No model.)

To all whom it may concern:

Be it known that I, DENNIS DUNN, of Philadelphia, in the county of Philadelphia, in the State of Pennsylvania, have invented new and
5 useful Improvements in Yarn-Dyeing Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of yarn-dyeing machines in which a wheel or frame
10 is arranged to rotate partly in and partly out of the vat containing the dye-liquor, and is provided in its interior with bars on which the skeins of yarn to be dyed are carried.

15 The invention consists in disposing the respective sets of yarn-carrying bars in planes oblique to the radius of the rotary dipping wheel or frame, whereby the capacity of the latter of containing yarn is materially increased and the skeins of yarn are carried in
20 such positions as to cause them to be drawn partly endwise and partly sidewise through the dye-liquor, and thus the yarn is dyed more evenly and without subjecting the same to the
25 strain incident to the sagging of the yarn between the supporting-bars, all as hereinafter more fully described and shown.

In the annexed drawings, Figure 1 is a vertical transverse section of a dyeing-machine
30 embodying my invention, a number of the yarn-carrying bars being bare to show the supports for the same on the wheel. Fig. 2 is a vertical longitudinal section on line *xx*, Fig. 1, and Fig. 3 is a detail view of the supports of
35 the yarn-carrying bars.

Similar letters of reference indicate corresponding parts.

A represents the vat containing the dye-liquor. Horizontally across the center of the

top portion of this vat and journaled in suitable bearings in the sides thereof is the shaft
40 *a* of the dipping-wheel C, consisting of two annular end plates *b b*, secured to spiders D D, which are fastened to the aforesaid shaft. A pulley or gear wheel F is attached to one
45 end of said shaft to transmit motion thereto.

c c denote the yarn-carrying bars, which are arranged in sets or pairs, each of which is disposed in a plane oblique to the radius
50 of the wheel, as shown in Fig. 1 of the drawings. Various means may be employed for sustaining the bars of each set or pair in the aforesaid planes and a proper distance apart to hold the skeins of yarn which extend
55 around them; one of such means being represented in the form of parallel cleats *d d*, secured to the inner sides of the annular plates *b b*, in lines oblique to the radius of the wheel. The ends of the bars *c c* entering between
60 said cleats and by means of pins *e e* passing through the cleats at the inner side of the outer bar and at the outer side of the inner bar, said bars are retained the requisite distance apart.

What I claim is—

65 In a machine for dyeing yarn in skeins, the combination, with the rotary dipping-wheel, of yarn-supporting bars arranged in sets and each of said sets disposed in a plane oblique to the radius of the wheel, substantially as
70 set forth and shown.

In testimony whereof I have hereunto signed my name this 5th day of September, 1889.

DENNIS DUNN. [L. S.]

Witnesses:

HARRY M. FOX,
ELIZA FOX.