

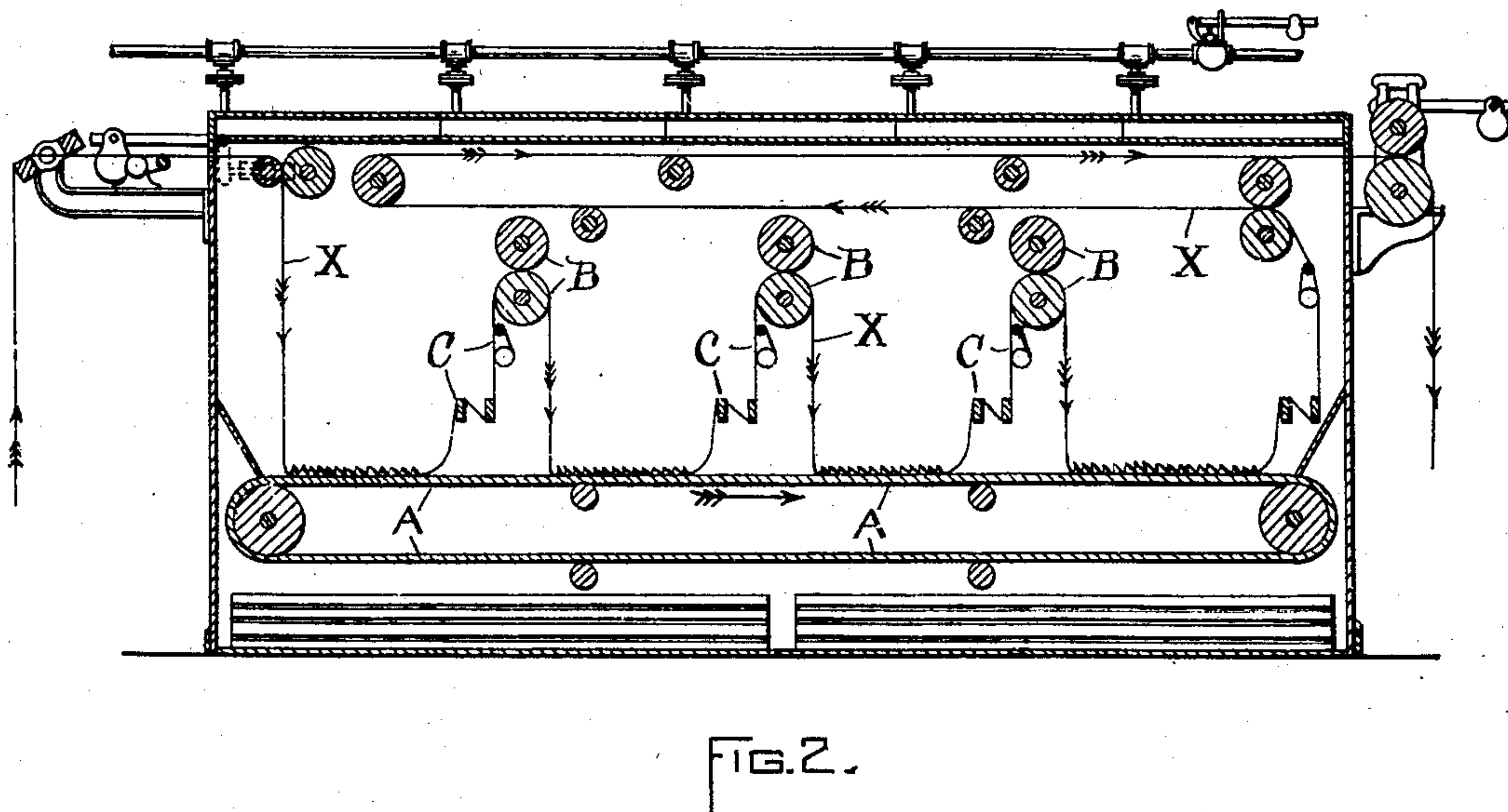
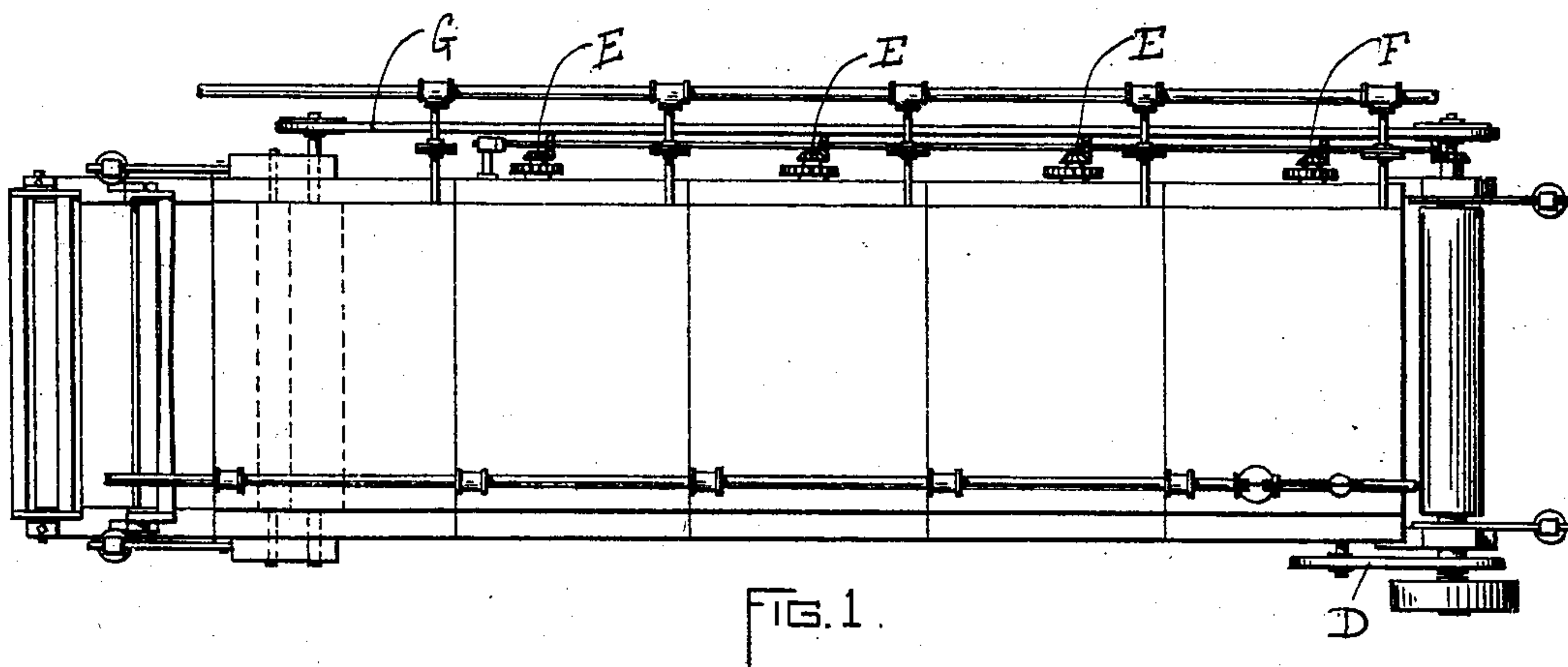
No. 694,640.

Patented Mar. 4, 1902.

J. C. HEBDEN.  
AGING APPARATUS.

(Application filed Dec. 20, 1901.)

(No Model.)



WITNESSES:

*Harry J. Garceau*  
*Walter D. Brownell*

INVENTOR:

*John C. Hebden*  
BY *Wm. R. Pillinghast* ATTY.

# UNITED STATES PATENT OFFICE.

JOHN C. HEBDEN, OF PROVIDENCE, RHODE ISLAND.

## AGING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 694,640, dated March 4, 1902.

Application filed December 20, 1901. Serial No. 86,591. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN C. HEBDEN, a citizen of the United States, residing in Providence, in the State of Rhode Island, have invented a new and useful Improvement in Aging Apparatus for Fixing the Colors of Dyed Materials, of which the following, with the drawings hereby made a part hereof, is a description.

My apparatus is more especially designed for use in aging goods, cloth, or yarns dyed with sulfur colors, which should be treated while still wet with the dye liquor; but it will prove advantageous in all aging processes.

In the accompanying drawings, Figure 1 is a plan view of my aging apparatus, and Fig. 2 is a sectional elevation thereof.

My apparatus consists of a chamber constructed in the usual manner and provided with pipe-inlets for the introduction of steam, the latter being preferably arranged so that by means of injectors air may be also introduced mingled with the steam. Near the bottom of the chamber is an endless horizontal apron A A, supported by suitable rolls and continuously moved by having one or more of these supporting-rolls driven by suitable machinery, as by the belt and pulley D in Fig. 1. The cloth or yarn, as the case may be, (indicated in the drawings by X,) is introduced at the left-hand upper corner of the chamber over suitable guide-rolls and permitted to fall upon the horizontal apron below. I have found that in practice the cloth in falling upon the apron will bunch and lie in folds upon itself in such a way that the steam and air, when the latter is used, cannot effect the oxidation evenly, especially where the mate-

rial in which the color is to be fixed is wet; but I have found that adding several sets of rolls B B and cloth or yarn guiding devices C C, &c., through the length of the chamber to lift the cloth or other material from the apron and drop it back again, thereby changing the position of the material, gives the steam and air the proper opportunity to effect an even and uniform oxidation of its entire length. The number of sets of these rolls is governed by circumstances, but should be sufficient to expose all parts of the cloth to the action of the oxidizing agent. The rolls B B are driven at a uniform speed by suitable gearing, as shown at E E in Fig. 1. The same shaft by gearing F will drive the upper guide-rolls at the right of the chamber. The rolls introducing the cloth at the left of the machine may be conveniently driven by a belt G, Fig. 1. The material is conveniently taken from the chamber, as indicated, by passing down the length of the chamber and back again just under the top, thus giving a further opportunity to the steam to oxidize and fix the dye.

I claim as my invention—

An aging-chamber containing an endless apron near its bottom, and rolls above the apron to lift the material to be aged from the apron and again drop it upon the apron, combined with mechanism for moving the apron and driving the rolls, and mechanism for feeding the material into the chamber and upon the apron and to take it from the chamber.

JOHN C. HEBDEN.

Witnesses:

P. BOECK,

WM. R. TILLINGHAST.