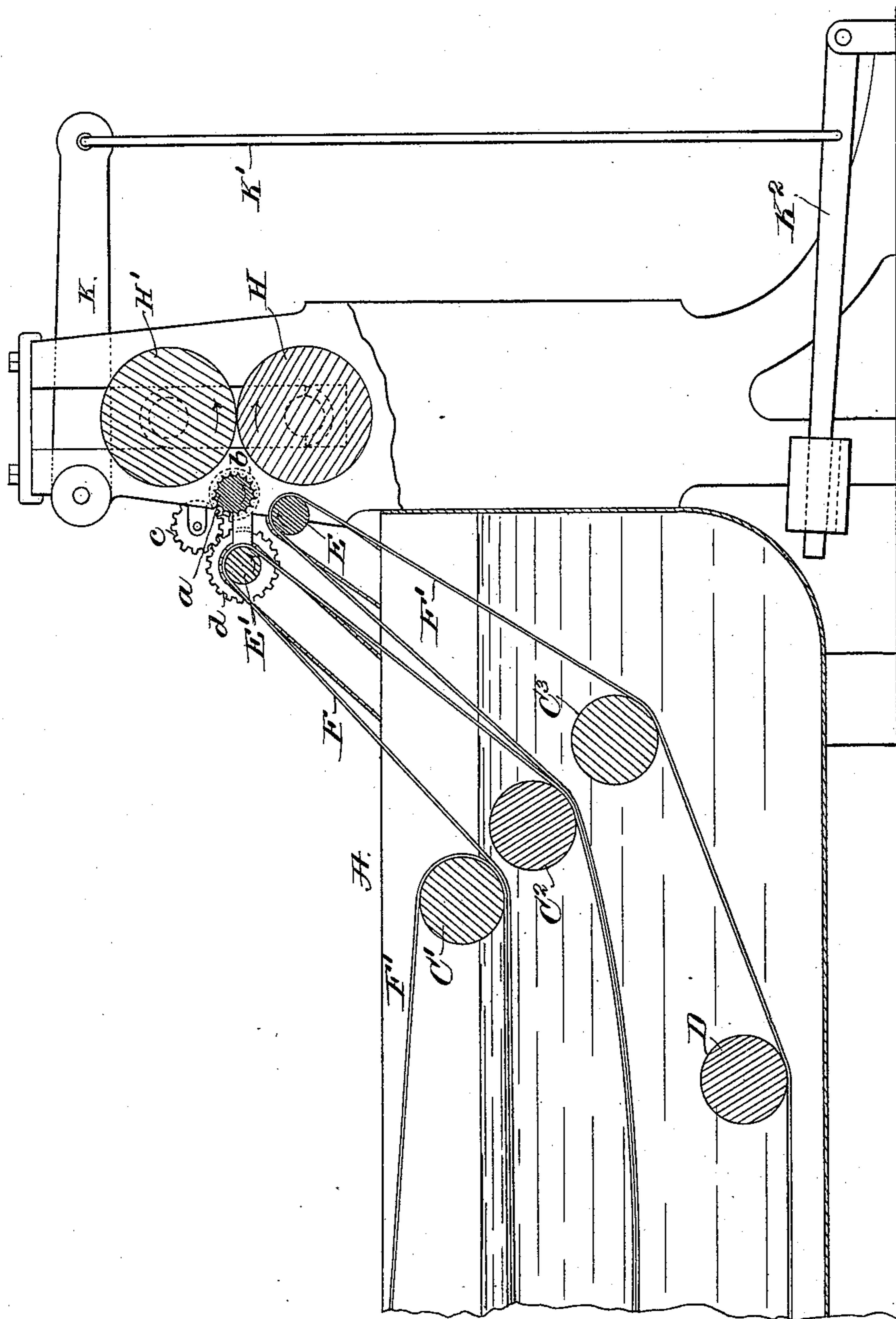


(No Model.)

S. C. AYERS.
MACHINE FOR WASHING YARN, &c.

No. 441,735.

Patented Dec. 2, 1890.



Witnesses.

Fred. S. Greenleaf
Andrew L. Emery

Inventor.

S. Chester Ayers,
by Lemby Gregory atty

UNITED STATES PATENT OFFICE.

SAMUEL CHESTER AYERS, OF CLINTON, MASSACHUSETTS, ASSIGNOR TO THE
BIGELOW CARPET COMPANY, OF SAME PLACE.

MACHINE FOR WASHING YARN, &c.

SPECIFICATION forming part of Letters Patent No. 441,735, dated December 2, 1890.

Application filed May 20, 1890. Serial No. 352,467. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL CHESTER AYERS, of Clinton, county of Worcester, State of Massachusetts, have invented an Improvement in
5 Machines for Washing Skeins of Yarn, &c., of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

10 This invention is intended to be an improvement on the class of machine shown in United States Patent No. 306,695, wherein the material to be washed or scoured—as, for instance, large skeins of yarn—are passed
15 through the washing-liquid in a tank by means of endless traveling belts or chains, which I shall call “feeders,” the said feeders carrying the material to squeezing-rollers.

In the class of machine referred to it is customary to employ an attendant who stands near the squeeze-rolls and aids in directing the material or skeins into the bight of the squeeze-rolls. I have by experiment discovered that this attendant may be dispensed
25 with, provided the machine is provided with a directing-roll located in the space between the feeders and the squeezing-rolls, the said directing-roll preferably having a surface-speed faster than that of the feeders, and being preferably provided with a series of blades or projections to better engage the material.

30 The drawing shows a sufficient portion of a washing or scouring machine with my improvements added to enable my invention to be understood.

35 The tank A, the endless feeders or belts F F', the rolls E and E', the guide-rolls C' C² C³ D, the squeeze-rolls H and H', and the lever K are and may be all as in the said patent, wherein like parts are designated by like letters.

40 In the space between the feeders F and F' and the squeeze-rolls H and H', I have located a directing-roll *a*, it preferably having a series of blades or projections to engage the material or skein and aid in feeding or moving it toward the bight of the squeeze-rolls. The shaft of this directing-roll is provided with a suitable toothed gear *b*, the out-
45 line of which is shown by dotted lines, the said gear being engaged by the teeth of an intermediate gear *c*, in mesh with and rotated by a gear *d*, fast on the shaft of the roll

E', over which is placed the feeder F, the said gears being so proportioned as to rotate 55 the directing-roll in the direction of the arrow thereon, but at a surface-speed faster than the speed of the belts or feeders, the said directing-roll engaging the material and directing it quickly toward the bight of the squeeze-rolls. The feed-rolls E and E', over which the belts F F' run, are arranged in different horizontal and longitudinal planes, the roll E being below the bight of the squeeze-rolls, while the roll E', as shown, is nearly at the 65 level of the bight of the squeeze-rolls, but more remote from the said bight than the roll E, and in the space between these feed-rolls I have placed the directing-roll *a*, which, owing to its faster speed of rotation in a di- 70 rection opposite that of the feed-roll E, prevents any possibility of the skeins passing from the belts dropping between the rollers E and H.

I claim—

75 1. The squeeze-rollers, the two endless feed-aprons, the tank, and feed-rolls E E', located in different horizontal and vertical planes, one roller, as E, being below the bight of the squeeze-rolls, combined with the directing-roll *a*, located, as shown, in the space between the said feed-rolls and the said squeeze-rolls and near the bight of the said squeeze-rolls, and means to rotate the said directing-roll, whereby the said delivery-rolls feed the yarn 85 from the feed-rolls into the bight of the squeeze-rolls, substantially as described.

2. The combination of the squeeze-rolls with two endless feeders, a tank, and feed-rolls, the latter being so set that they are con- 90 siderably below the bight of said squeeze-rolls, but above the liquid in the tank, a directing-roll having blades or projections located between said feed and squeeze rolls substantially opposite the bight of the squeeze-rolls, and gears to rotate the directing-roll at a faster surface speed than that of the feeders, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of 100 two subscribing witnesses.

S. CHESTER AYERS.

Witnesses:

C. B. BIGELOW,
E. W. BURDETT.