

(No Model.)

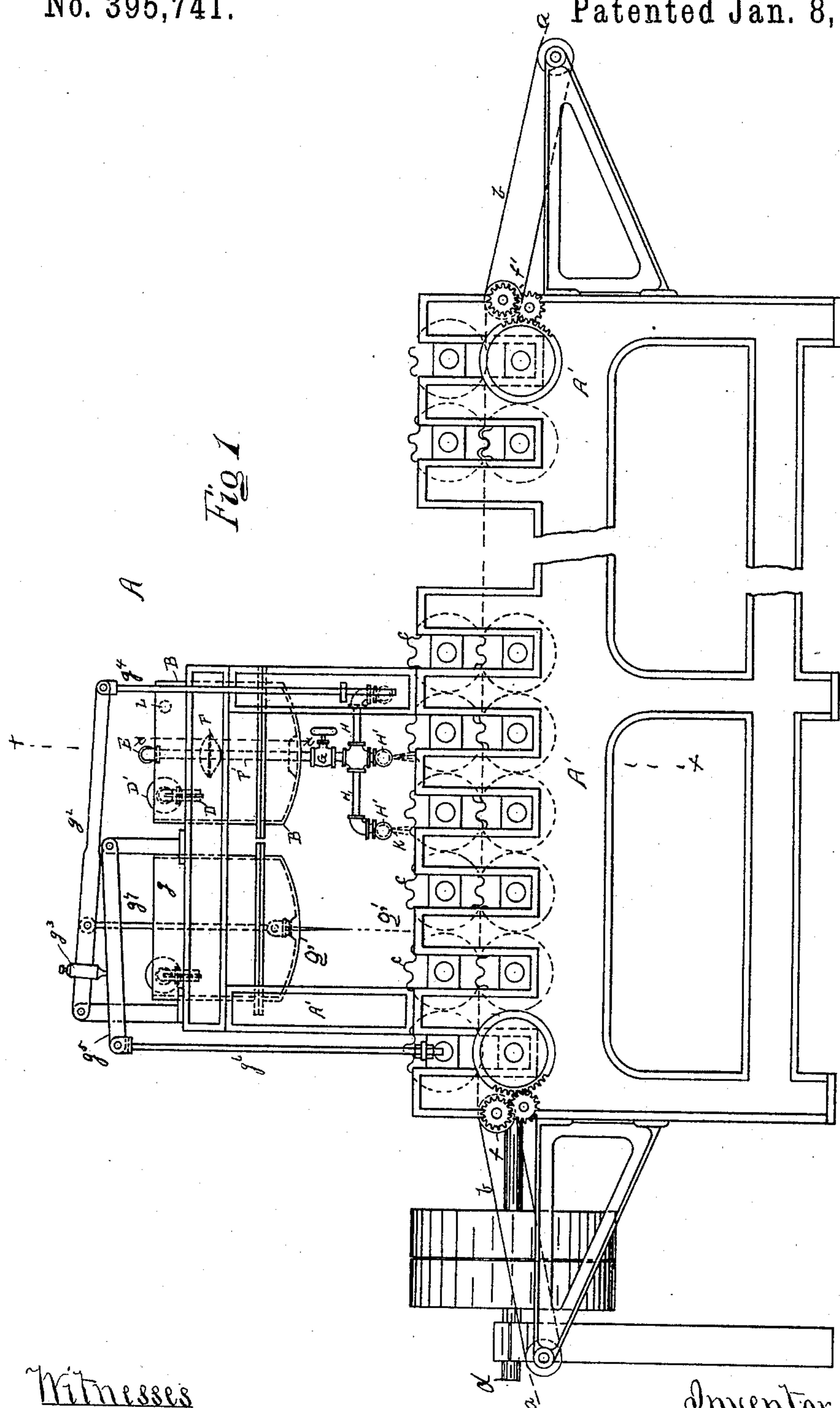
2 Sheets—Sheet 1.

J. CHEYNE.

MACHINE FOR SOFTENING JUTE, HEMP, &c.

No. 395,741.

Patented Jan. 8, 1889.

Witnesses

Alfred B. Watson  
James Cairnes

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Inventor.

John Cheyrol  
Notary public atty.

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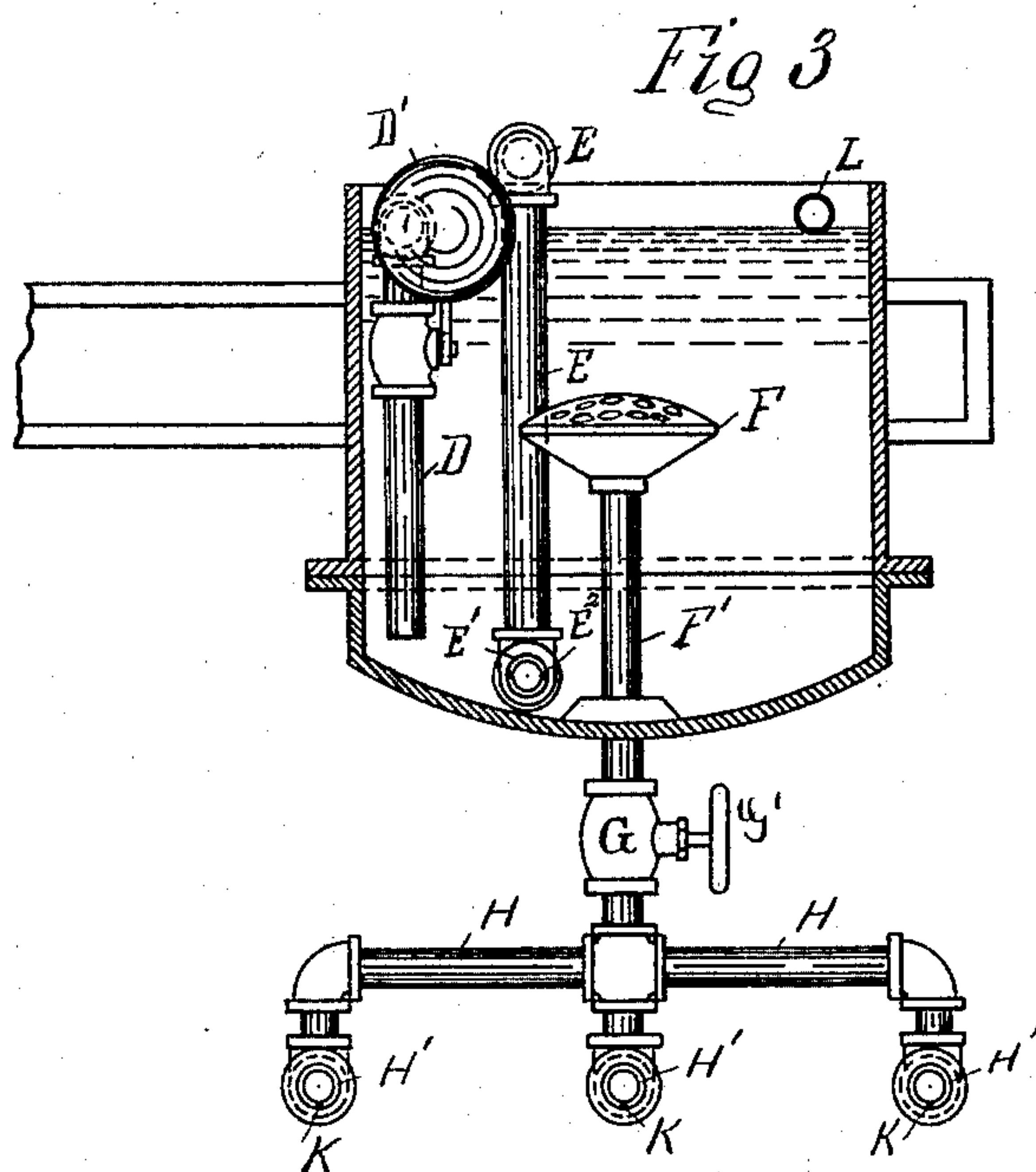
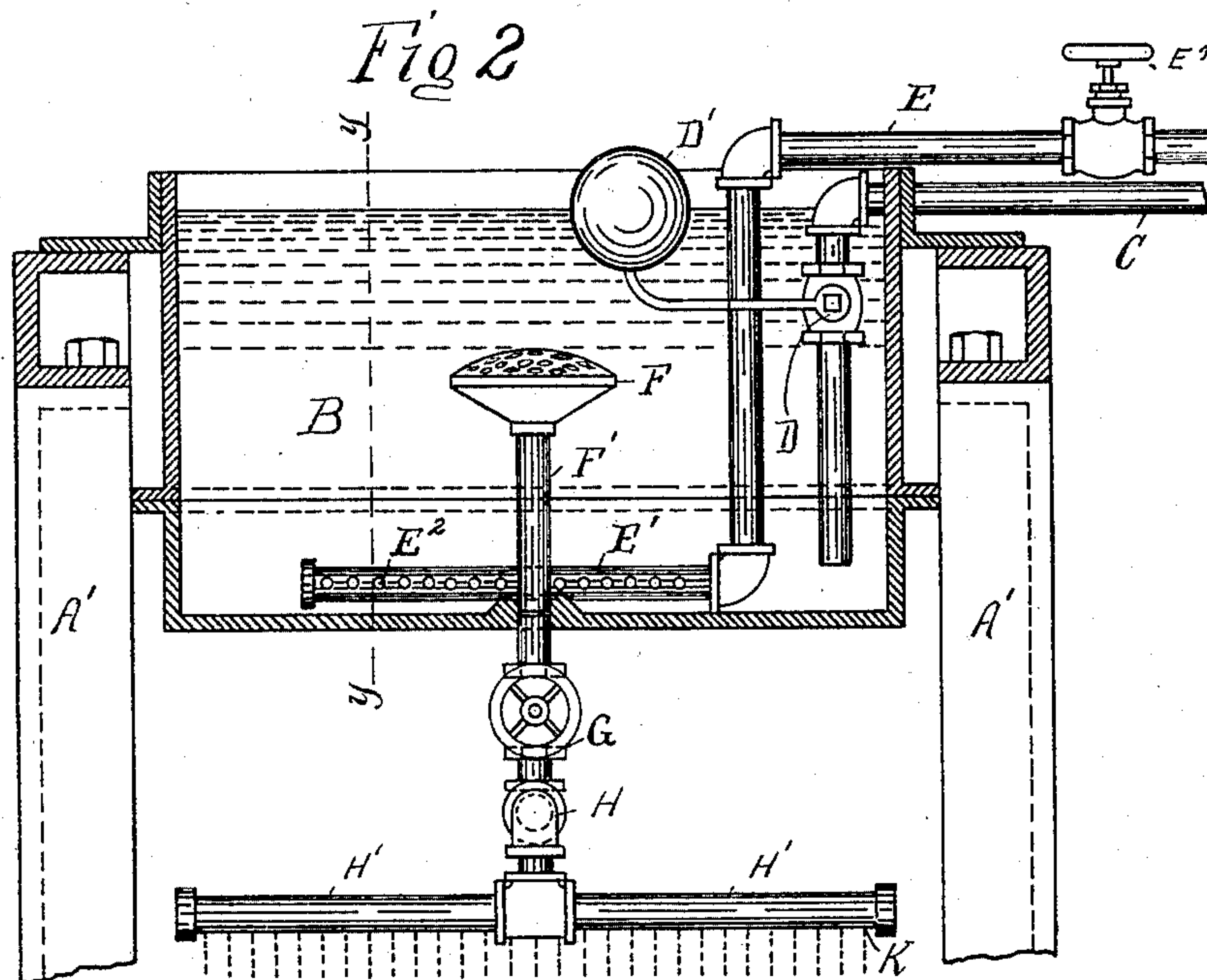
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# UNITED STATES PATENT OFFICE.

JOHN CHEYNE, OF PATERSON, NEW JERSEY.

## MACHINE FOR SOFTENING JUTE, HEMP, &c.

SPECIFICATION forming part of Letters Patent No. 395,741, dated January 8, 1889.

Application filed July 7, 1888. Serial No. 279,335. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN CHEYNE, a citizen of the United States, residing at Paterson, Passaic county, State of New Jersey, have invented a new and useful Improvement in Machines for Softening Jute, Hemp, &c., of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to machines for softening jute and hemp.

Usually jute and hemp are taken from the bale and put through the softening-machine, being subjected to jets of oil from an oiling apparatus in its passage through the machine to dissolve the gum, and thus soften the fiber. Then when taken from the machine the fiber is laid in bulk, where it lies for several days and is moistened with a mixture of hot water and oil from a tank, borax being sometimes added in order to further dissolve the gum and render the fiber soft and fit for further use. This mode of softening jute and hemp is objectionable, for the reason that the oil and water in the tank will not mix, owing to a want of affinity, the oil rising to the surface when the water cools, thus giving poor results in the softening of the fiber after the long delay necessary to complete the operation.

The object of my present invention is to provide means for softening jute and hemp which shall possess the advantages of the former mode of softening jute and hemp, but which shall be free from its objectionable features.

With this end in view my invention consists in a water-box having pipes, &c., which I arrange on the machine, and which will be hereinafter fully described, and pointed out in the claim.

Figure 1 of the drawings shows in broken elevation one side of an ordinary jute and hemp softening machine with my invention attached. Fig. 2 is a transverse sectional elevation of my invention detached on line *xx* of Fig. 1; and Fig. 3 is an end view of the same on line *yy* of Fig. 2, partly sectional:

A represents a jute and hemp softening machine of ordinary build, having the usual supporting-frame, *A'*, driving-shaft *d*, apron *b*, rollers *c*, and oil-chamber *g*, which latter is

provided with a lever, *g*<sup>2</sup>, having a slide, *g*<sup>3</sup>, while the lever *g*<sup>2</sup> is pivoted to a rod, *g*<sup>4</sup>. The said slide *g*<sup>3</sup>, which slides over the lever, is adapted to regulate the flow of oil from the chamber *g* under the action of a lever, *g*<sup>5</sup>, and link *g*<sup>6</sup>, the latter of which is connected at its lower end to the bearing of the roller *c* and at its upper end to the said lever *g*<sup>5</sup>, while the lever *g*<sup>2</sup> has a valve, *g*<sup>7</sup>, as shown. The chamber *g* is supplied from an oil-tank in a suitable position through an inlet or supply pipe, while the receptacle is provided with an overflow-pipe.

The machine, which is constructed as is usual, need not, it is thought, be further described herein.

In a suitable position on the machine A, I fix by bolts or otherwise a box, B, into which box I arrange a water-supply pipe, C, and a steam-pipe, E. The water-supply pipe C is provided with a valve, D, and a float, D', which latter is connected with the valve, and is adapted to close the valve when the box has received a sufficient quantity of water into the same through the pipe C and to open the valve for a further supply when the supply of water in the box is insufficient for practical purposes. The box is also provided with an overflow-pipe, L. The steam-pipe E, which enters the box at the top of the same, as does the pipe C, passes down to the bottom of the box and is provided with a valve, E<sup>3</sup>, and a branch pipe, E', having perforations E<sup>2</sup>, and is adapted to issue jets of live steam through the said perforations E<sup>2</sup> to heat the water in the box B and boil the same. In the bottom of the water-box B, I fix a pipe, F', which pipe has arranged on the top of the same in the box an enlarged perforated part, F, while below the box the said pipe F' has a valve, G, and hand-wheel, G', which latter is adapted to open and close the valve in the operation of softening the fiber. Below the valve G on the pipe F' are a branch pipe, H, and distributing-pipes H', which latter are adapted to distribute the boiling water and steam that pass down through the perforated top part, F, into the pipe F' to be distributed in the operation of softening the fiber in the manner hereinafter stated.

The machine being in motion, the jute or hemp, *a*, passes on the apron *b* to and between



the rollers *c*, where the fiber undergoes treatment incident to the shape of the rollers *c* between which it passes and is mashed and is subjected to jets of oil at *g'* from the oil-receptacle *g*, and while passing on between the rollers after having been oiled, as stated, the fiber is further subjected to jets of boiling water and steam from the pipe *F'* through the pipes *H H'* and perforations *K* of the latter, the valve *G* having been previously opened by turning the wheel *G'*. The fibers *a* having been subjected to jets of oil from the oil-receptacle *g* and to jets of boiling water and steam from the perforations *K*, the said jets of boiling water and steam tend to force a union of the water and oil, and which, in connection with the further action of the rollers thereupon, fully dissolves the gum and causes the fiber to leave the machine softened and ready for immediate further use. The flow of oil from the chamber *g* is increased or diminished according to the feed of fiber from the apron. When the feed is heavy, the roller *c* is raised accordingly, which, by means of link *g<sup>6</sup>*, elevates lever *g<sup>5</sup>* and lever *g<sup>2</sup>*, which latter lifts the valve *g<sup>7</sup>* and

permits an increased quantity of oil to pass from the chamber at *g'* upon the passing fiber. The opposite will be the case when the feed of fiber is light.

By my invention the heaps of fiber, tanks, barrels, and other cumbersome things, with the delay of the pre-existing mode of softening jute and hemp, are entirely dispensed with and better results in softening the fibers are secured.

Having described my invention, I claim as new and desire to secure by Letters Patent—

The combination, with mechanism for softening the fiber and for supplying oil thereto, of the box *B*, the pipe *C*, provided with valve *D* and float *D'*, the pipes *E* and *E'*, the latter having perforations *E<sup>2</sup>*, the pipe *F'*, having perforated enlargement *F* and valve *G*, and the pipes *H* and *H'*, the latter having the perforations *K*.

JOHN CHEYNE.

Witnesses:

JAMES CONNEL,

WILLIAM STEWART.