

No. 685,593.

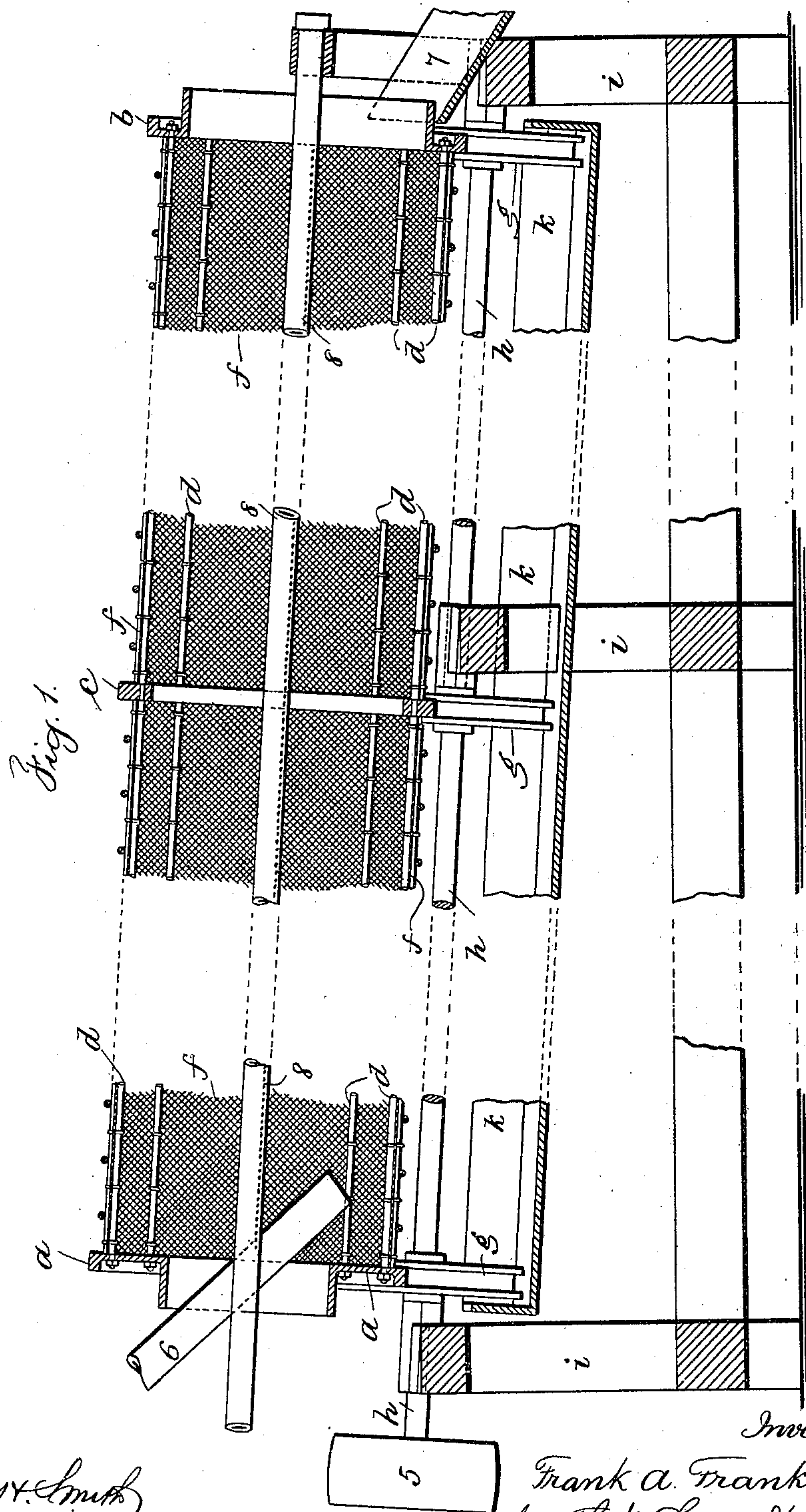
Patented Oct. 29, 1901.

F. A. FRANKLIN.
PROCESS OF RECLAIMING PULP.

(Application filed Apr. 19, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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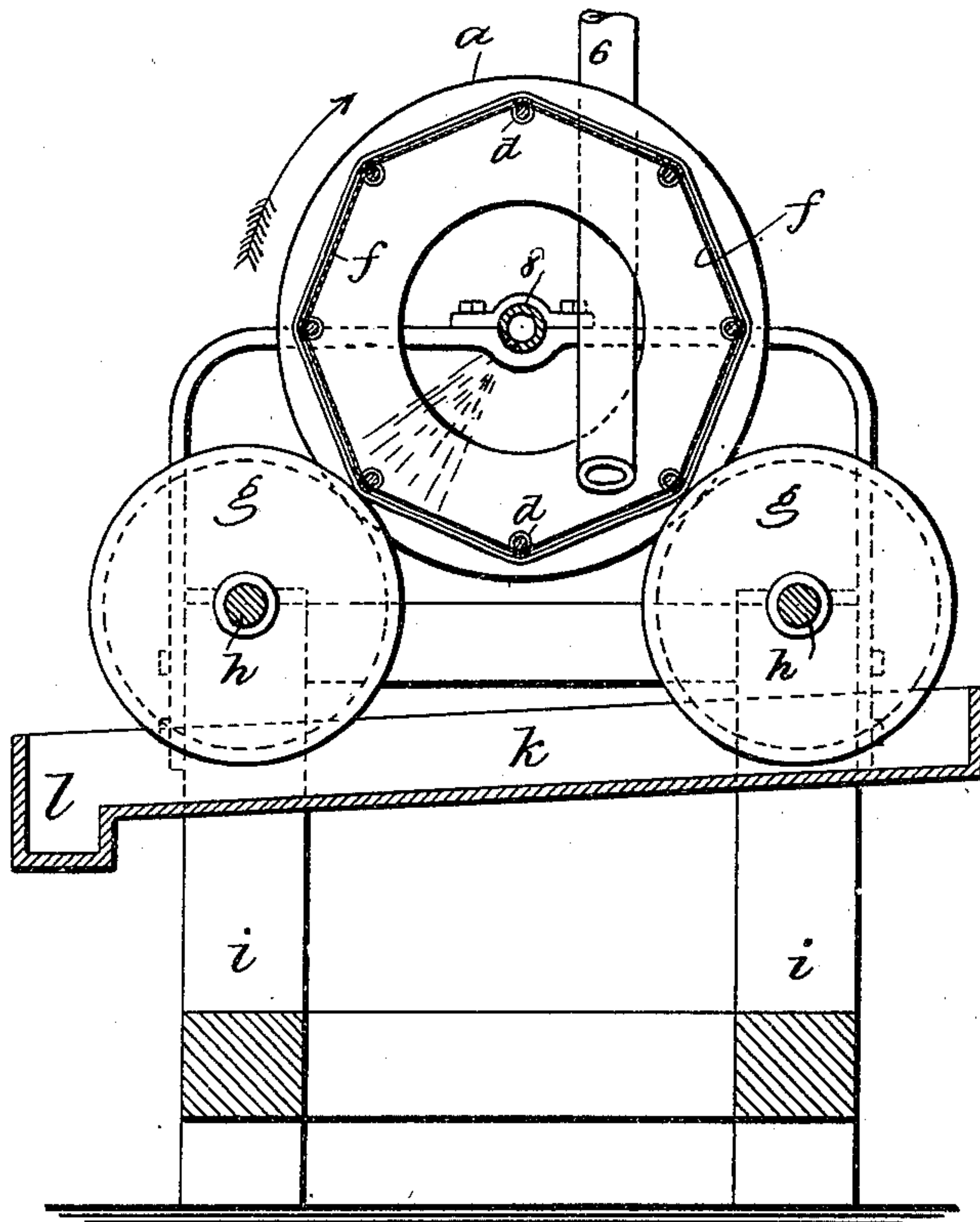
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2 Sheets—Sheet 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

FRANK A. FRANKLIN, OF SHELTON, CONNECTICUT.

PROCESS OF RECLAIMING PULP.

SPECIFICATION forming part of Letters Patent No. 685,593, dated October 29, 1901.

Application filed April 19, 1901. Serial No. 56,538. (No specimens.)

To all whom it may concern:

Be it known that I, FRANK A. FRANKLIN, a citizen of the United States, residing at Shelton, in the county of Fairfield and State of Connecticut, have invented an Improvement in the Process of Reclaiming Pulp, of which the following is a specification.

Heretofore efforts have been made to reclaim the materials of old newspapers, periodicals, and other printed, colored, or soiled fibers or fabrics by treating the same in mass or bulk and afterward converting the same into pulp-stock or finely-ground paper-stock for reuse in the arts; but this has been quite impossible and unsuccessful, as the ink, dirt, or other foreign matter would not separate fully or perfectly, so as to cause the materials when in pulp to be in acceptable condition.

In carrying out my invention the waste paper or other printed, colored, or soiled fibers or fabrics is cut up and ground and put in the condition of pulp-stock or finely-ground paper-stock by any well-known process in the art, and in which condition the printing-ink, pigment, dirt, or foreign substances of course adhere to the particles, but in a comminuted condition, and yet in such a condition that the ink or dirt is somewhat loosened from the fiber of the stock. This material I take and agitate in a suitable device, in which the material is separated into small masses and caused to turn over and over and to move along progressively, and at the same time copious streams of water of any desired temperature or a mixture of water and suitable chemicals or other material are forced upon said pulp as the same turns over and moves along, so as to wash therefrom the impurities. This agitation and washing are prolonged for a sufficient time, and the time may be controlled by the speed of rotation and the length of the device holding the said material. The streams of water issue against the mass of pulp and against its direction of rotation, so that there is a thorough washing or rinsing operation, and the material is supported, preferably, upon a wire-cloth, said wire-cloth providing perforated surfaces and perfect drainage for the exit of the washing-water.

In the drawings I have illustrated by a vertical longitudinal section, Figure 1, and cross-section, Fig. 2, a device suitable for carrying

out my method. In this apparatus there is a cylindrical casing set at an inclination, the casing preferably being made with ring-like heads *a b*, having flat peripheries and flanged open centers. An intermediate ring *c* is between the ring-heads, and the ring-heads and the intermediate ring are connected by tie-bars *d* or equivalent longitudinal connecting devices, which cause the parts to be so connected as to be capable of moving as an entirety. The wire-cloth *f* extends around these tie-rod devices *d* and forms a complete inclosure between the ring-like heads and the intermediate ring, the said wire-cloth being connected to these tie-rod devices in any desired manner. This cylindrical casing is supported on wheels *g* in pairs upon companion shafts *h*, one of said shafts being driven by a power-pulley *5*, so as to cause the rotation of the cylindrical revoluble device, there being end and central supporting-frames *i*, carrying the structure, and an inclined trough *k* beneath the cylindrical device and these supporting wheels and shafts, the said trough receiving the waste water, and a gutter *l*, conveying the same away. A pipe *8* passes through the cylindrical device and is perforated on the under side to permit the water therein to pass out within the cylindrical device and upon the paper-pulp or finely-ground paper-stock being treated therein. The paper-pulp or finely-ground paper-stock is delivered by a supply-pipe *6* into the cylindrical device and the material is discharged from the same by a way *7* at the lower end.

In the operation the material passes into the cylindrical device and is resolved into subdivided masses which with the revolution of the cylindrical device tend to pass up one side and fall over and at the same time move slightly down the inclined surface of the wire-cloth inclosure. In this way the material turns over and over in masses that are constantly changing, so that the material is constantly agitated by the rotation. The water from the pipe plays upon the material as the same is agitated and as the same moves along, and the impurities are washed from the said paper-pulp or finely-ground paper-stock and are carried through the perforations of the wire-cloth inclosure, with the water escaping, and are delivered upon the inclined trough

and carried away by the gutter. In this way the pulp-stock is saved and the impurities are washed therefrom. This agitation is facilitated in a measure by the tie-rod devices
5 employed for connecting the heads together in forming the cylindrical device and also in part by the intermediate ring c. The agitation is also in a measure controlled by the speed of the cylindrical device and by its in-
10 clination.

I claim as my invention—

1. The method herein specified of reclaiming pulp-stock or other fibrous materials, consisting in delivering streams of water upon a
15 moving inclined mass of such materials, which is caused to turn over and over upon itself and permitting the impurities to escape as washed out, substantially as set forth.

2. The method herein specified of reclaiming pulp-stock or finely-ground paper-stock,
20 consisting in agitating such materials in a subdivided mass occupying an inclined position, turning the material over and over upon itself and permitting the mass to gravitate in

one direction, and delivering upon such material during such agitation and movement
streams of water for the purpose of washing the impurities therefrom, substantially as set forth.

3. The method herein specified of reclaiming the materials of old newspapers, periodicals and other printed colored or soiled fibers or fabrics, consisting in cutting up and grinding the same and reducing such materials to pulp-stock or finely-ground paper-stock, agitating such materials in a subdivided state
35 occupying an inclined position, turning the material over and over upon itself and permitting the same to gravitate in one direction and delivering upon such material during
40 such agitation streams of water for the purpose of washing the impurities therefrom, substantially as specified.

Signed by me this 11th day of April, 1901.

FRANK A. FRANKLIN.

Witnesses:

GEO. T. PINCKNEY,
S. T. HAVILAND.