

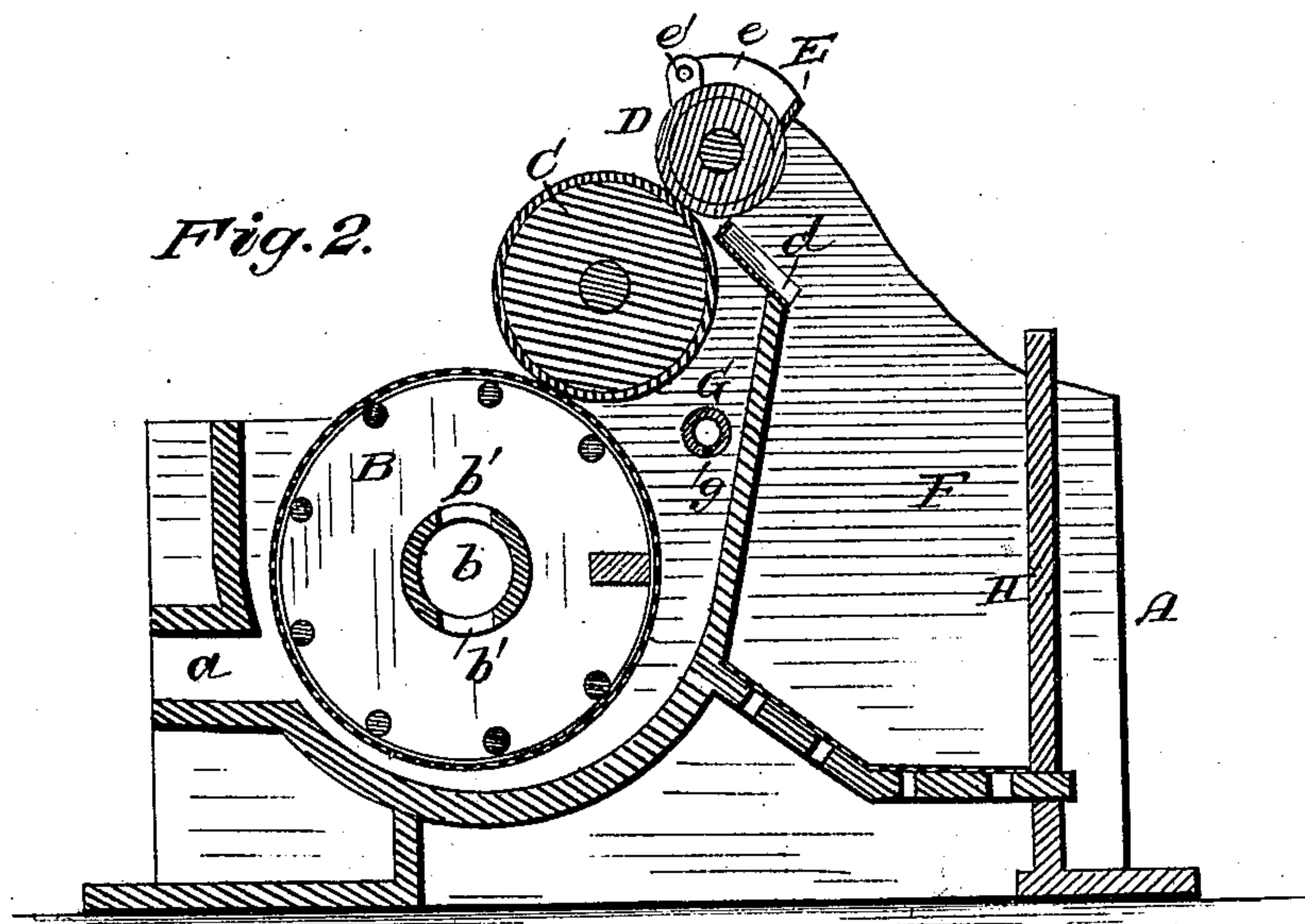
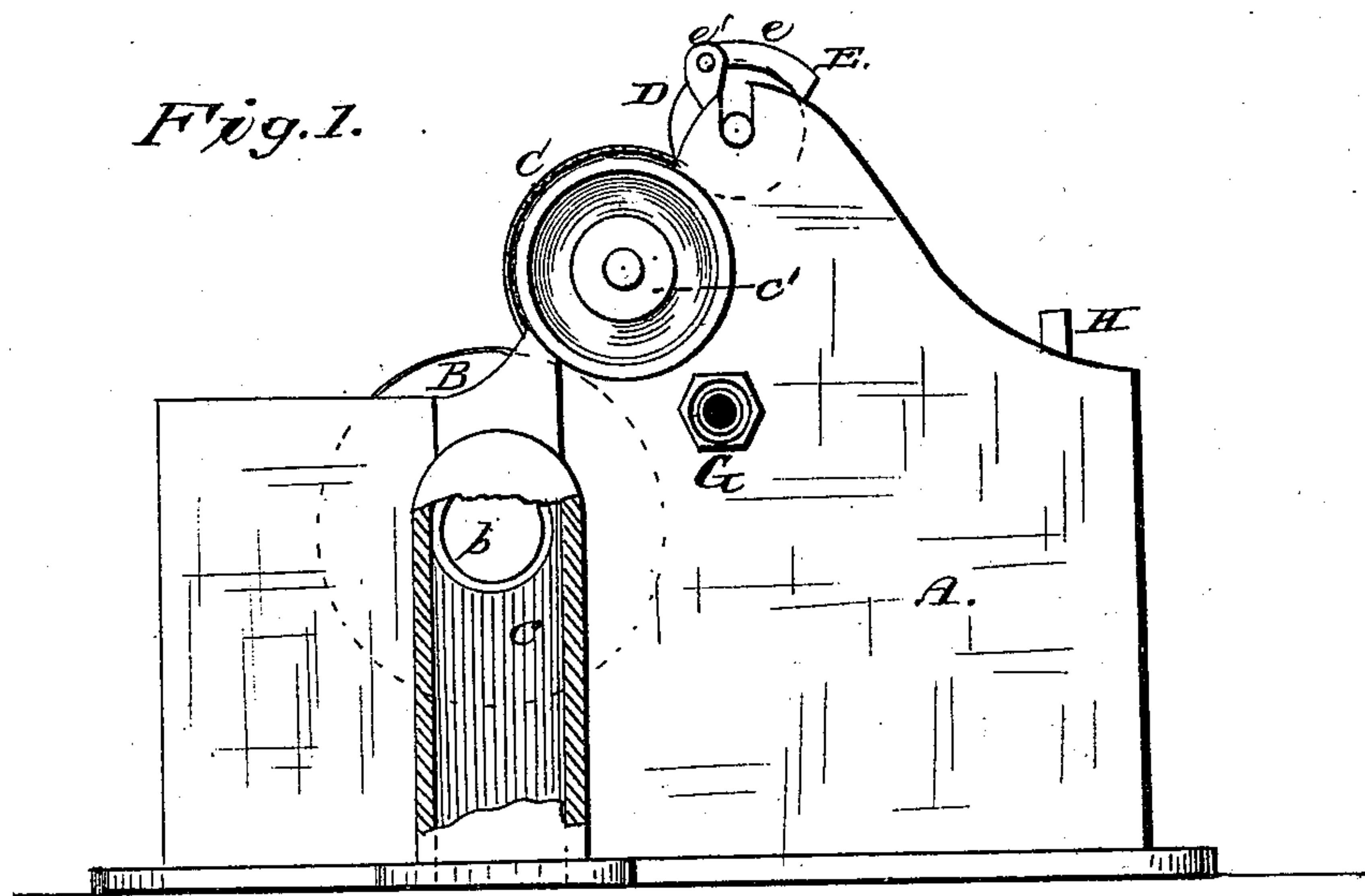
(Model.)

A. McDERMID.

Machine for Preventing Waste of Paper Pulp.

No. 230,029.

Patented July 13, 1880.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ARCHIBALD McDERMID, OF WEST FITCHBURG, MASSACHUSETTS.

MACHINE FOR PREVENTING WASTE OF PAPER-PULP.

SPECIFICATION forming part of Letters Patent No. 230,029, dated July 13, 1880.

Application filed April 2, 1880. (Model.)

To all whom it may concern:

Be it known that I, ARCHIBALD McDERMID, of West Fitchburg, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Machines for Preventing Waste of Paper-Pulp; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of my improved waste-pulp saving or securing machine, and Fig. 2 is a vertical longitudinal section thereof.

This invention appertains to improvements in machines for securing or recovering waste paper-pulp, which effects a great saving to the manufacturer; and it consists of the combination and arrangement of parts, as hereinafter more fully set forth, and particularly pointed out in the claims.

A in the accompanying drawings refers to a vat or tub, to which is led a pipe, *a*, from the paper-making machinery, to conduct the waste pulp or water into said vat or tub, instead of allowing it to pass off down the stream or run off into a waste pipe or trough.

B is a wire-cloth-covered cylinder, whose mesh is about ten numbers finer than that of the cylinders or screens of the paper machinery, in order to enable it to pick up the very finely comminuted fibers of the pulp passed off from the machinery through the pipe *a* into the vat. This cylinder is hung by a hollow or tubular shaft or trunnion, *b*, in the sides of the vat, opposite vertical spouts *c* in the sides of the vat, with its hollow shaft emptying the water or liquid, which is allowed to enter it through openings *b'* in its length, (by dripping or passing through the cylinder into its interior,) out into the discharge-spouts *c*.

C is a couch-roll, which is covered with felt or a felt jacket, as shown, to take or remove, by frictional contact with the cylinder B, the waste pulp taken up by and adhering to the cylinder. This roll is hung just back of and on a plane above and in contact with the cylinder B, with its shaft provided with a driving band-pulley, *c'*, receiving motion through a

belt or endless band driven by the paper-making machinery.

The fibers or pulp removed by the roll C are taken therefrom by a jacketed roll, D, hung in frictional contact with the roll C, and from the roll D they are scraped off upon an incline or apron, *d*, by a scraper, E, which is so hung, by arms *e* pivoted to the short posts *e'* of the vat, or directly to the vat, as to rest and be held by gravity upon the roll D. The waste pulp or fibers pass off the incline *d* into the vat, or rather into its rear chamber, F, which has a perforated or screen bottom for the passage through it of the expressed or adhering water. The fibers or pulp thus saved or recovered and treated can be returned and passed through the paper-making machinery, to be utilized in the manufacture of the paper.

A pipe, G, supported in the sides of the vat and disposed in proximity with the couch-roll C and cylinder B, and having a series of perforations, *g*, in the direction of its length, is designed, by connecting therewith the hose of a service-pipe or head of water, to expose the said roll, or rather its jacket, and occasionally the cylinder C, to a spray of water, to keep these clean.

H is a gate in one end of the vat or tub, which may be used to dig out and to remove the pulp from the chamber F of the vat.

I am aware that machines of this class have been made before, by which the pulp fibers which are received upon the jacket of the couch-roller from the sieve-covered drum are scraped off of this roller by a scraper arranged in proximity to and bearing against it; but this is objectionable, because the pressure of the scraper upon the soft jacket of the couch-roll will in course of time compress and harden it, and thus render it less capable of wiping the fiber-coated surface of the sieve-drum. By the interposition of the roller D with a jacket of less soft material than that of roller C, and thus avoiding direct contact of the couch-roll with the scraper, injury to this roll is prevented, so that it will always be in proper condition to transfer the pulp-fibers from drum B to roller D, from which they are removed by the scraper.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a waste-pulp recovering or saving machine, the combination, with the immersed sieve-covered drum B and couch-roller C, of the auxiliary or friction-roller D and pivoted scraper E, adapted to adjust itself by its own gravity upon said roller D, substantially as set forth.

2. In combination, the vat A, having the inlet *a*, vertical discharge-spouts *c*, spraying-pipe G, incline *d*, and compartment F, having a perforated bottom and provided with the gate H, sieve-covered drum B, having hollow

perforated axle *b*, couch-roller C, jacketed friction-roller D, and pivoted self-adjustable scraper E, all constructed and arranged to operate substantially in the manner and for the purpose herein shown and specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ARCHIBALD McDERMID.

Witnesses:

HUGH McDIARMID,
MICHAEL MOYENHAN.