(No Model.)

G. W. CRESSMAN.

PULP ENGINE.

No. 432,300. Patented July 15, 1890.

FIG. 1.

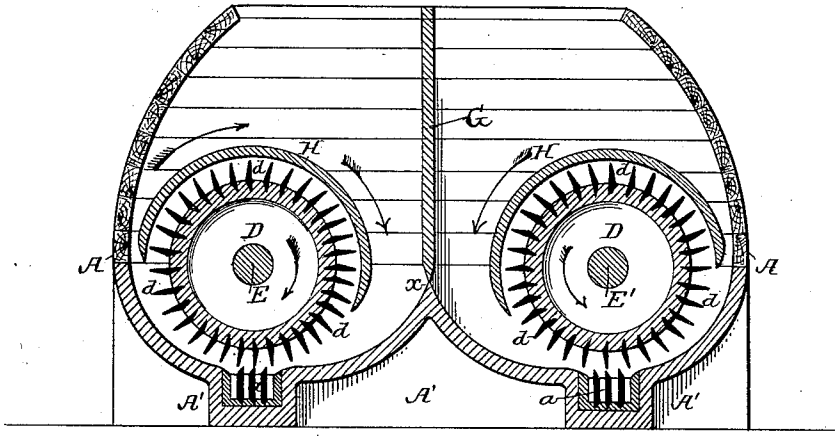


FIG. 3.

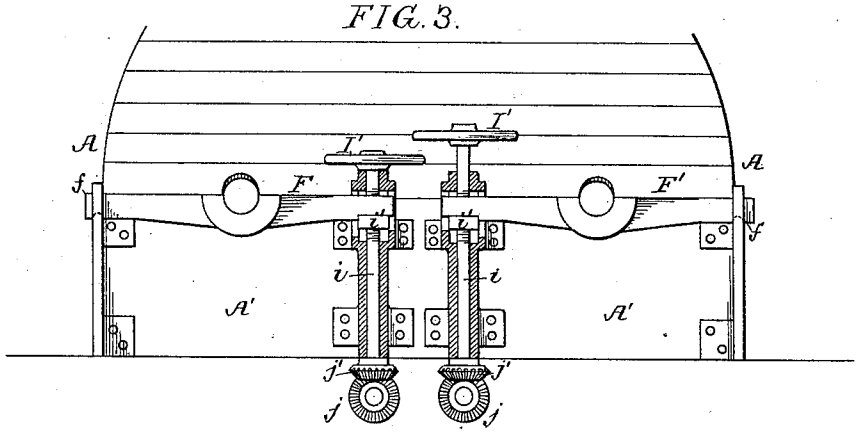
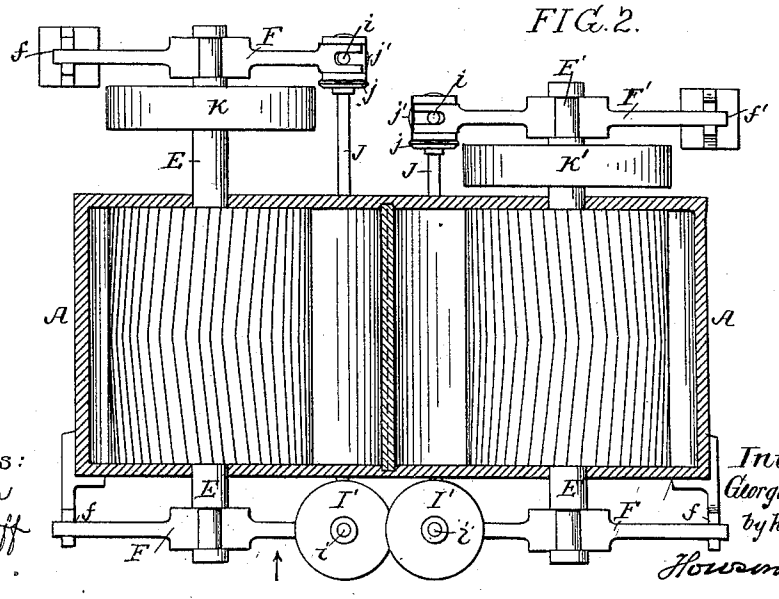


FIG. 2.



Witnesses:
J. E. Parker
Alex. Barkoff

Inventor:
George W. Cressman
by his Attorneys.
Howson & Howson

UNITED STATES PATENT OFFICE.

GEORGE W. CRESSMAN, OF BARRON HILL, PENNSYLVANIA.

PULP-ENGINE.

SPECIFICATION forming part of Letters Patent No. 432,300, dated July 15, 1890.

Application filed April 6, 1889. Serial No. 306,150. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. CRESSMAN, a citizen of the United States, and a resident of Barron Hill, Montgomery county, Pennsylvania, have invented certain Improvements in Pulp-Engines, of which the following is a specification.

The object of my invention is to construct a pulp-engine for reducing rags and other paper-stock to a pulp in the manufacture of paper, as fully described hereinafter.

The main object of my invention is to construct a machine that will be compact and reduce the rags and stock more quickly than heretofore, and that can be used as a single or double machine.

In the accompanying drawings, Figure 1 is a transverse sectional view of my improved pulp-engine. Fig. 2 is a plan view; and Fig. 3 is a side view looking in the direction of the arrow, Fig. 2, with parts in section.

A is the trough, of quadrangular form, as shown in the plan view, and in the base A′ of the trough are the fixed blades *a*, of the construction usual in pulp-engines. Situated directly above these blades *a* are the cylinders D D, having blades *d*, which operate in conjunction with the fixed blades in pulping the material introduced into the engine.

The cylinders D D are mounted on shafts E E′, having their bearings in levers F F′, pivoted at *f f′*. The bearing-levers F F′ of the shaft E can be raised or lowered simultaneously, so that an even adjustment is obtained. The bearings F′ of the shaft E′ can also be adjusted simultaneously for the same purpose. The bottom of the trough is made concave for the reception of the cylinders D; but it will be understood that the cylinders do not fit snugly in the concave, but plenty of room is afforded for the passage of the material. Directly under the rolls the stationary knives *a* come in contact or nearly in contact with the knives of the cylinder D. The two central concaves come together at *x* and form an edge, by which the material is divided.

Above the cylinders D D are concaves or coverings H H, over which the material passes as it is forced from under the cylinders. These concaves prevent the material from clogging the blades of the cylinders at the top, and also provide a smooth surface, over which the material may be passed to again enter between the blades of the cylinder and the stationary blades.

The trough A is built up, as shown in Fig. 1, so as to make a comparatively small inlet-opening and prevent the splashing of the material as the cylinders revolve.

Separating the machine into two parts is a gate or partition G, which is adapted to grooves in the sides of the trough. The object of this removable gate or partition is to separate the machine into two parts, so that when long rag stock is to be broken it will pass much more frequently between the knives; but when the stock is sufficiently broken the partition or gate is removed, allowing the pulp from the halves of the machine to come violently together above the edge *x*, the cylinders being driven in the direction indicated by the arrows in Fig. 1, the pulp also taking the course indicated. Thus the pulp from the two sections becomes thoroughly incorporated and an even product is assured.

Passing through the vertical supports at each side of the trough is a screw-shaft *i*, adapted to a nut *i′*, which rests against the under side of the bearing-levers F, the upper end of the shaft being provided with a hand-wheel I′, on turning which the nut is raised or lowered, thus raising or lowering the pivoted bearing-lever F. The screw-rods *i* are geared together through the medium of the shaft J, which has bevel-wheels *j* at each end, which mesh with bevel-wheels *j′* on the screw-shafts *i i*, so that when one screw-shaft is turned the other will be likewise turned, thus giving an even adjustment at both ends of the shaft.

This mechanism is duplicated in connection with the shaft E′. The shafts E E′ are provided with pulleys K K′, over which the driving-belts pass.

It will thus be seen by the above description that I am enabled to construct a machine that will be compact and will agitate the material and pulp it much more quickly than machines now in common use, as the material passes the knives more rapidly and oftener.

The material passing over the top of the cylinders enables it to be thoroughly mixed and agitated.

I claim as my invention—

1. The combination, in a pulping-engine, of the tank having a double concave bottom, with concaves forming a rib x at the center, and stationary knives in each concave, with a revolving cylinder directly above each set of stationary knives, with knives on said cylinders, substantially as described.

2. The combination of the tank having a double concave bottom with a central rib x, and stationary knives in said concave, with a knife-cylinder directly above each set of stationary knives, with a removable gate or partition adapted to pass between the two cylinders and separate the machine in two parts, substantially as described.

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

GEORGE W. CRESSMAN.

Witnesses:

HARRY SMITH,

HENRY HOWSON.