L. BRAINARD.

RAG WHIPPER AND DUSTER FOR TREATING PAPER STOCK, &c.

No. 100,718. Patented Mar. 15, 1870.

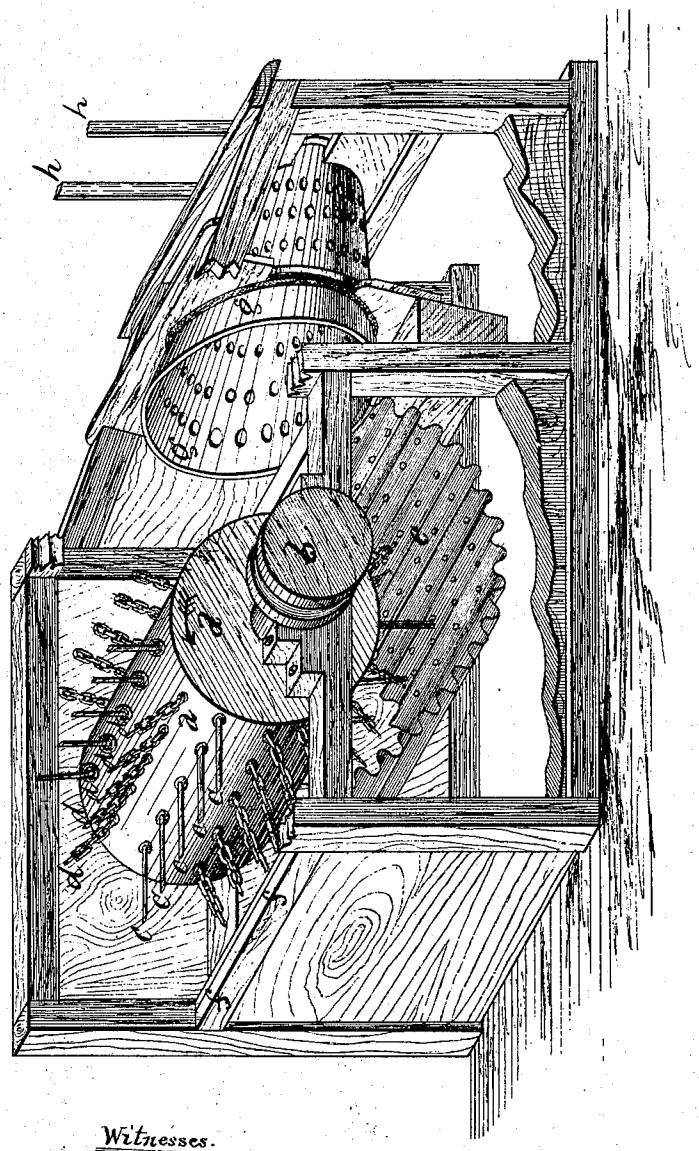

Fig. 1.

Witnesses.

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LEVERETT BRAINARD, OF HARTFORD, CONNECTICUT.

Letters Patent No. 100,718, *dated March* 15, 1870.

IMPROVED RAG-WHIPPER AND DUSTER FOR TREATING PAPER STOCK, &c.

The Schedule referred to in these Letters Patent and making part of the same.

I, LEVERETT BRAINARD, of Hartford, in the county of Hartford, and State of Connecticut, have invented a certain improved Rag-Whipper and Duster, of which the following is a specification.

Nature and Objects of the Invention.

When paper is made from rags, it is necessary and convenient that the rags should be separated or loosened up and opened, and in all cases that the dust should be removed and separated from them both before and after they are sorted, also before and after they are cut, and at any time before they are put into the boiler or bleach; and

My machine is for removing and separating the dust and all loose dirt from the rags, as well as for separating, loosening, and opening the rags from bales, or in any other condensed shape in which they may be brought to the mill.

The machine consists of a revolving drum with loose or swinging arms, up to or against which the rags are fed, and by the arms are whipped or struck with such force as to carry them around under the drum upon a metal apron having an even or smooth surface, or with a corrugated or irregular surface, said apron to be perforated with holes, through which dust can escape.

The rags pass out at the opposite side of the cylinder from which they are fed, either directly, or, for the purpose of still further separating the dust from the rags, they are caused to pass through a hollow revolving cylinder, also perforated with holes through which dust can escape, said cylinder to be driven by a belt and pulley, or by a gear or otherwise, as may be desired.

At the upper portion of the machine, at a convenient point, will be left an opening for the purpose of ventilation and carrying off the light dust, a strong current of air being created by the rapid revolutions of the drum.

Description of the Accompanying Drawings.

Figure 1 is a perspective view of the machine with the sides next the observer removed.

General Description.

The letter *a* indicates a cylinder of any convenient dimensions, driven in the direction indicated by the arrow, by a belt running upon the pulley *b*.

To this cylinder are fastened by a loose joint, at either regular or irregular intervals, metal arms, which may consist of straight pieces, as *c c*, &c., or of pieces of chain, as *d d*, &c.

Under this revolving cylinder, with its flail-like or swinging arms, is the metal apron *e*, perforated with holes for the escape of the dust.

The rags are fed into the machine from the side *f*, and they escape at the other side, and, if desired, through the revolving perforated cylinder *g*, made to revolve by means of the belt *h* running in a groove made for that purpose on the small end of the cylinder *g*.

This cylinder is perforated with holes for the purpose of allowing the dust to escape, and the escape of dust is accelerated by the revolution of the cylinder.

This revolving perforated cylinder is not in itself a new invention, but its combination with the other parts named herein is something new, and is a part of my invention.

This cylinder may point straight out from the thrashing-drum *a*, as shown, or it may be turned at any desired angle, and in case it is—or is not—turned off at an angle, a wooden or metal wall may be left directly in front of the thrashing-drum, against which and the sides of the cylinder, according to its position, it will throw the rags with force, and thus assist in beating the dust out of them.

The arms *c* and *d* of the thrashing-cylinder *a* should not, of course, be long enough to touch the apron *e* as they revolve, but they should come tolerably near to it. I have found from a half inch to an inch and a half to be a good working distance, according to circumstances.

It is intended to run the thrashing-drum *a* at a speed of about three hundred (300) revolutions per minute, though, under differing circumstances, it may sometimes be best to run somewhat faster or slower.

The arms *c* and *d* being loose, so as to swing free on the drum *a*, the high speed at which they run will most completely whip and dust the rags fed into the machine.

The perforated corrugated metal apron *f* will assist in the operation, as will also the revolving perforated cylinder *g*.

Claims.

I claim as my invention—

1. The drum *a*, provided with the jointed swinging arms *c* and *d*, either whole or linked, constructed, arranged, and operated substantially as described, for the purpose set forth.

2. The corrugated metal apron *e*, either perforated or not, constructed, arranged, and operated substantially as described, for the purpose set forth.

3. The combination of the armed drum *a* and apron *e*, constructed, arranged, and operated as described, for the purpose set forth.

4. The combination of the armed drum *a*, the metal apron *e*, smooth or corrugated, and the hollow revolving perforated cylinder *g*, the whole constructed, arranged, and operated substantially as described, for the purpose set forth.

LEVERETT BRAINARD.

Witnesses:

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