(No Model.) 3 Sheets—Sheet 1.

S. R. WAGG.

PULP REFINING AND DRESSING ENGINE.

No. 447,853. Patented Mar. 10, 1891.

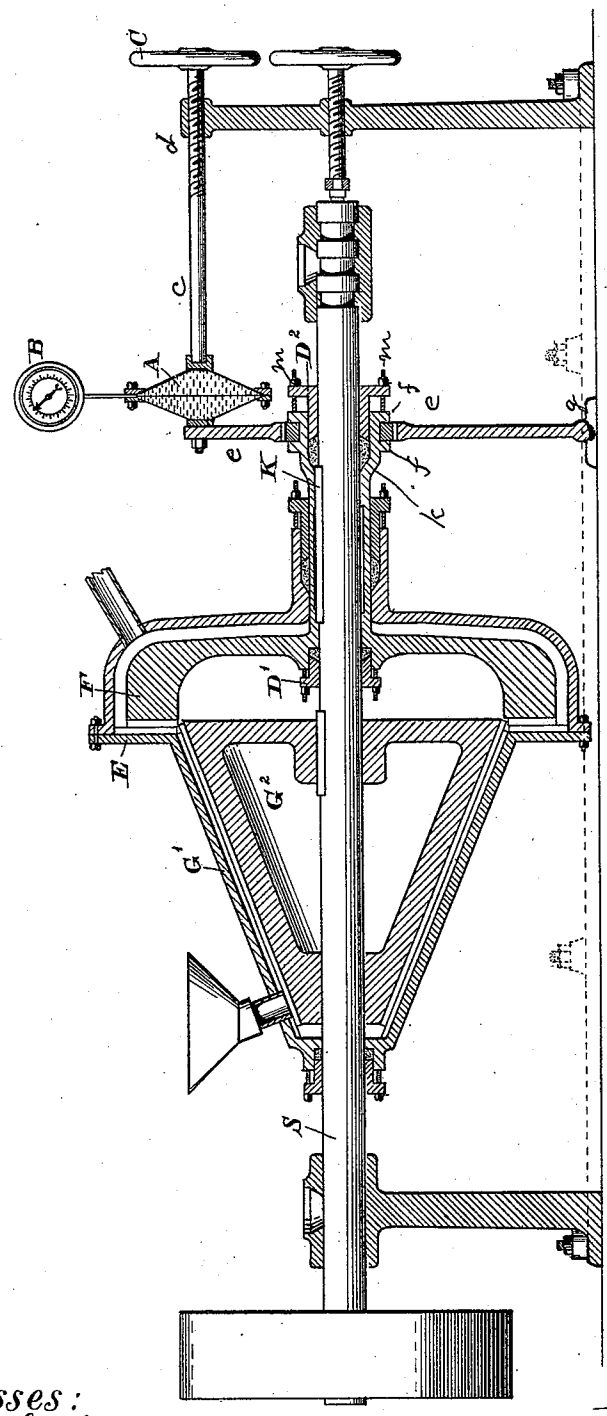


Fig. 1.

Witnesses:
Alonzo Aldrich
A. Quinn.

Inventor:
Solomon R. Wagg

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 2.

S. R. WAGG.

PULP REFINING AND DRESSING ENGINE.

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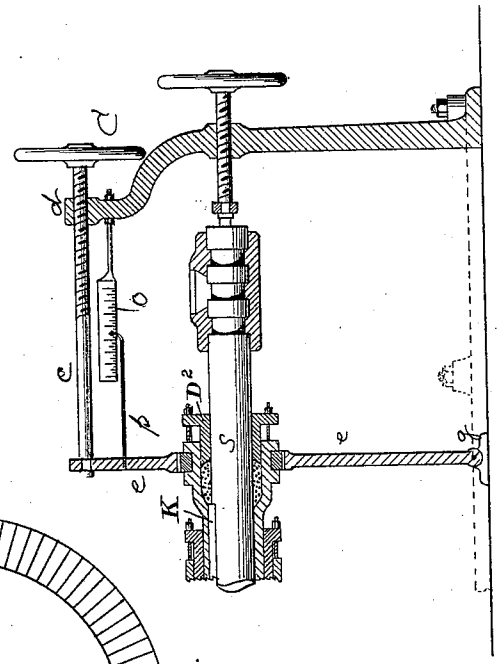


Fig. 3.

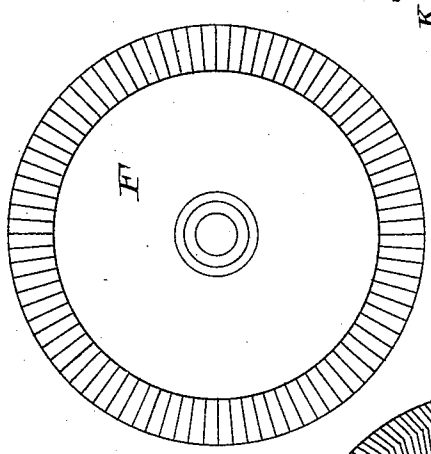


Fig. 4.

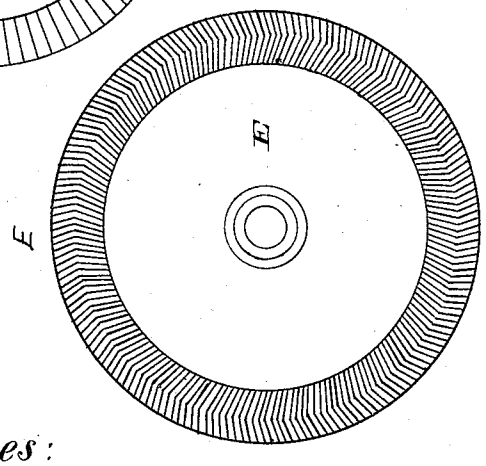


Fig. 2.

Witnesses:
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A. Murray.

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(No Model.) 3 Sheets—Sheet 3.

S. R. WAGG.

PULP REFINING AND DRESSING ENGINE.

No. 447,853. Patented Mar. 10, 1891.

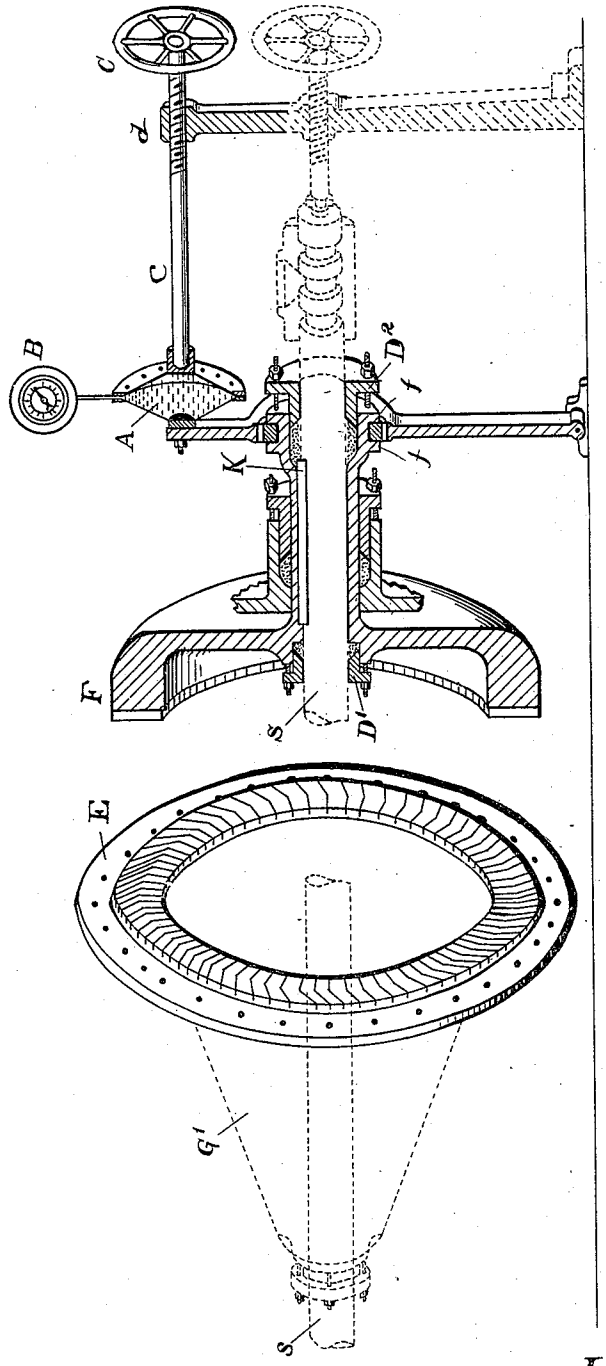


Fig. 5

Witnesses.
A. Aldrich
F. A. Janvrin.

Inventor.
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UNITED STATES PATENT OFFICE.

SOLOMON R. WAGG, OF APPLETON, WISCONSIN.

PULP REFINING AND DRESSING ENGINE.

SPECIFICATION forming part of Letters Patent No. 447,853, dated March 10, 1891.

Application filed August 31, 1889. Serial No. 322,628. (No model.)

To all whom it may concern:

Be it known that I, SOLOMON R. WAGG, a citizen of the United States, residing at Appleton, in the county of Outagamie, State of Wisconsin, have invented certain new and useful Improvements in Pulp Refining and Dressing Engines for Making Paper-Pulp Fiber, of which the following is a true specification, reference being had to the accompanying drawings.

My invention has for its object the improvement of the work heretofore accomplished by the plain cone-engine, whereby a larger amount and better grade of work is performed and the pulp fibers better and more strongly prepared, so that it can be used in the best classes of writing-paper for clearing from shreds and knots, making long slim fibers of great strength and smoothness.

The general arrangement of parts in a plain taper cone-engine is well known to those skilled in the art. My invention is an improvement thereon.

The accompanying drawings represent and form part of this specification, reference-letters indicate like parts in the figures.

In the drawings, Figure 1 represents a vertical longitudinal section through the engine. Fig. 2 is an elevation of the circular plate formed with or affixed to the end of cone-shell. Fig. 3 is a partial section showing hand-wheels for the separate and independent adjustments of the cone and revolving disk and graduated scale and pointers and packing-gland between shaft and sleeve and the feather-key for sleeve to move forward and backward upon and cause its revolution. Fig. 4 is an elevation of the adjustable revolving disk F. Fig. 5 is a perspective view, partly in section, showing the general relation of parts.

S indicates the revolving shaft, which is driven by suitable power. A cone G^2, having a grinding-surface of the usual character, is attached to the shaft S, so as to revolve therewith. The cone is within the casing G', which has interior grinding-surfaces, as usual.

E is a circular plate or disk, having upon its face numerous knives, as shown in elevation in Fig. 2, and is attached to and made an extension of the ordinary cone-shell.

F is a circular revolving disk fitted to shaft S, with a long sleeve extending to the right through engine-case ending at packing-gland D^2. Upon the inside at D' is a packing-gland to prevent pulp fiber from working in between the shaft S and the sleeve of revolving disk F. On the outward end is also a packing-gland D^2. This disk is movable upon feather-key K or its equivalent, sliding upon it and shaft S and moved back and forward by operating-screws and hand-wheel C. Hand-wheel C is attached to shaft *c*, which has a screw-threaded engagement with nut *d* on some fixed part of the frame. The other end of shaft has a bearing (direct or indirect) against standard *e*. This standard is pivoted at some fixed point, as *g*, and bears against collar *f*. The key or spline K connects collar *f* to the shaft. A compressible receptacle A, for oil or other fluid, is interposed between shaft C and standard *e*. A pressure-gage B is attached to vessel A. The pressure transmitted through collar *f* and standard *e* to the receptacle A will be indicated on gage B, and this indicator shows the pressure on the stock between the grinding-disks. The gage will show the pressure, but may not correctly point out the exact position of disk F. The position will be shown by the index-plate *o* and a pointer *p*, either the index-plate or the pointer being attached to a fixed part of the machine and the other being attached to a movable part. This index and pointer may be used as an addition to the gage device heretofore described.

It will be understood that modifications may be made, wherein equivalents are used, without departing from the spirit of this invention.

What I claim is—

1. The combination, with the rotating shaft, of a grinding-disk rotating with said shaft, but movable lengthwise thereof, a fixed surface against which said disk bears the material to be ground, and packing-glands surrounding the shaft and covering the central part of the disk, so as to protect the same, substantially as described.

2. The combination, with the fixed grinding-surface, of the rotating shaft, a grinding-disk movable lengthwise thereof and facing the grinding-surface, a standard connected to said disk, substantially as described, and a

screw-shaft operating on said standard to support the same, substantially as described.

3. The combination of the fixed grinding-surface, a rotating shaft, a movable disk on said shaft facing said surface, devices for shifting said disks lengthwise of the shaft, and a pressure-gage interposed in said devices to indicate the pressure on said disk, substantially as described.

4. The combination of the fixed grinding-surface, the driving-shaft and disk thereon, a movable standard, connections, substantially as described, between said standard and disk, a gage on which the standard bears, and a screw-shaft resting against said gage, substantially as described.

5. The combination, with the rotating shaft and a fixed grinding-surface, of a disk movable on the shaft with relation to the grinding-surface, and an index or indicator showing the position of the grinding-disk, substantially as described.

SOLOMON R. WAGG.

In presence of—
H. G. FREEMAN,
C. NELSON.