

(No Model.)

G. HIBBERT.
PULPING AND GRINDING MACHINE.

No. 520,680.

Patented May 29, 1894.

Fig. 1.

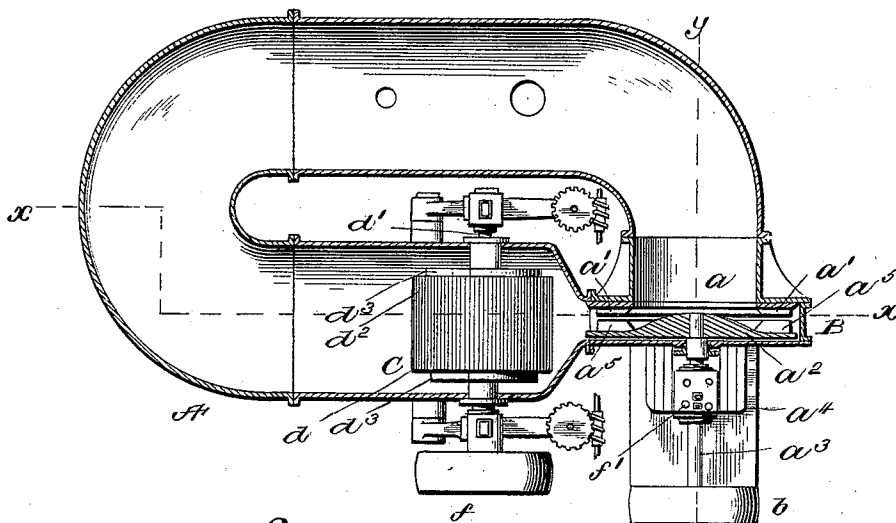


Fig. 2

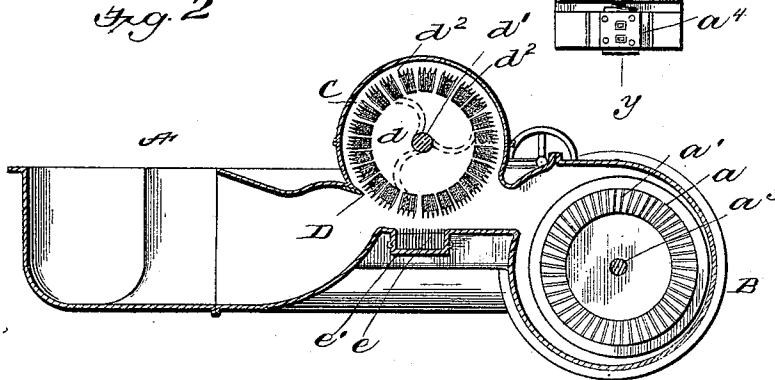
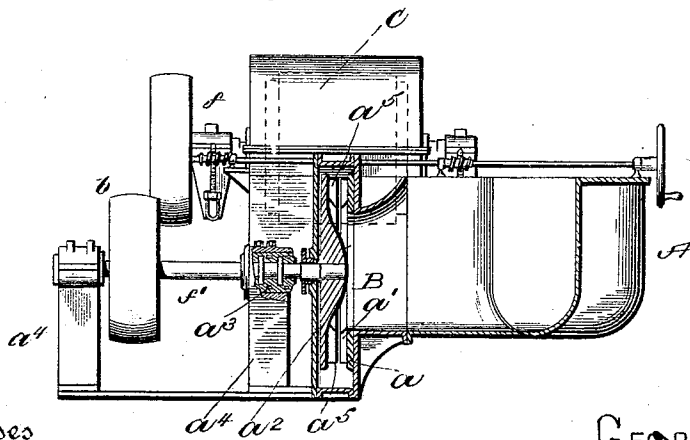


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE HIBBERT, OF GATESHEAD-ON-TYNE, ENGLAND.

PULPING AND GRINDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 520,680, dated May 29, 1894.

Application filed August 30, 1893. Serial No. 484,387. (No model.) Patented in England March 26, 1886, No. 4,237.

To all whom it may concern:

Be it known that I, GEORGE HIBBERT, a subject of the Queen of Great Britain, residing at Gateshead-on-Tyne, in the county of Durham, England, have invented certain new and useful Improvements in Pulping and Grinding Machines, (for which I have obtained Letters Patent of Great Britain, dated March 26, 1886, No. 4,237;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention contemplates certain new and useful improvements in machines for pulping and grinding fibrous and other materials, and the object of the invention is to provide simple and highly efficient means for readily and easily effecting the grinding, washing, bleaching, beating, pulping, shredding, or mixing of various materials and fibrous substances used in paper pulp.

The invention comprises the details of construction, combination and arrangement of parts, substantially as hereinafter fully set forth and particularly pointed out in the claim.

In the accompanying drawings:—Figure 1 is a sectional plan view. Fig. 2 is a longitudinal sectional view on the line $x-x$, Fig. 1. Fig. 3 is a transverse sectional view on line $y-y$, Fig. 1.

Referring to the drawings, A designates a vessel or trough of any convenient shape, but preferably oval in plan view. In one end of this vessel is a grinding head B, which comprises a stationary disk a having bars or rubbers a' projecting from its face, and a rotary disk a^2 mounted on a shaft a^3 supported by bearings a^4 , said disk a^2 also having bars or rubbers a^5 opposite to those of the stationary disk. These bars or rubbers are preferably made of steel, chilled cast-iron or bronze, or other suitable material. A band-wheel b is on the outer end of shaft a^3 .

C is a second grinding head which consists of a roller d mounted on a shaft d' journaled in the sides of vessel A, and from the periphery of this roller project bars or rubbers d^2 . Adjacent each end of roller d and movable therewith are centrifugal arms or blades d^3 . Immediately beneath this roller d is a bed-plate e of fixed bars or rubbers of steel or stone set in a groove or depression e' in the bottom of the vessel. The pulp or other sub-

stances after being discharged by the grinding head B will be acted upon by roller d and bed-plate e before being discharged into the vessel or trough. The arms or blades d^3 serve to discharge any material coming from the grinding head B faster than can pass beneath the grinding head C. A blade or strip of metal D is attached to the top of vessel A immediately in rear of roller d and its edge is in close proximity to the bars or rubbers of said roller, the object thereof being to prevent the pulp being taken up over said rollers by the bars or rubbers. A band-wheel f is located on shaft d' outside of the vessel or trough.

The bearings of the shafts a^3 and d' are preferably constructed with water spaces f' through or around them to keep them cool so that they can be run at a high velocity to do their work more quickly.

The operation and advantages of my invention are apparent to those skilled in the art to which it appertains and it will be seen that by means thereof the pulping or grinding of fibrous and other materials can be readily and easily accomplished in a most efficient manner.

It will be understood that I do not restrict myself to the details of construction since the same may be changed without departing from the spirit of my invention.

I claim as my invention—

In a grinding machine, a continuous trough shaped vessel, a vertical rotary grinding disk journaled at one end of the same, a stationary disk arranged opposite the revolving disk, a horizontal revoluble cutter roll arranged a short distance in advance of the grinding disk, a stationary cutter plate arranged in the bottom of trough beneath the revolving cutter, the centrifugal arms arranged adjacent to the grinding roll, and a scraping plate partially surrounding the grinding roll, the grinding roll and revolving disks being so arranged that a continuous circulation of the mass is maintained within the trough, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE HIBBERT.

Witnesses:

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