

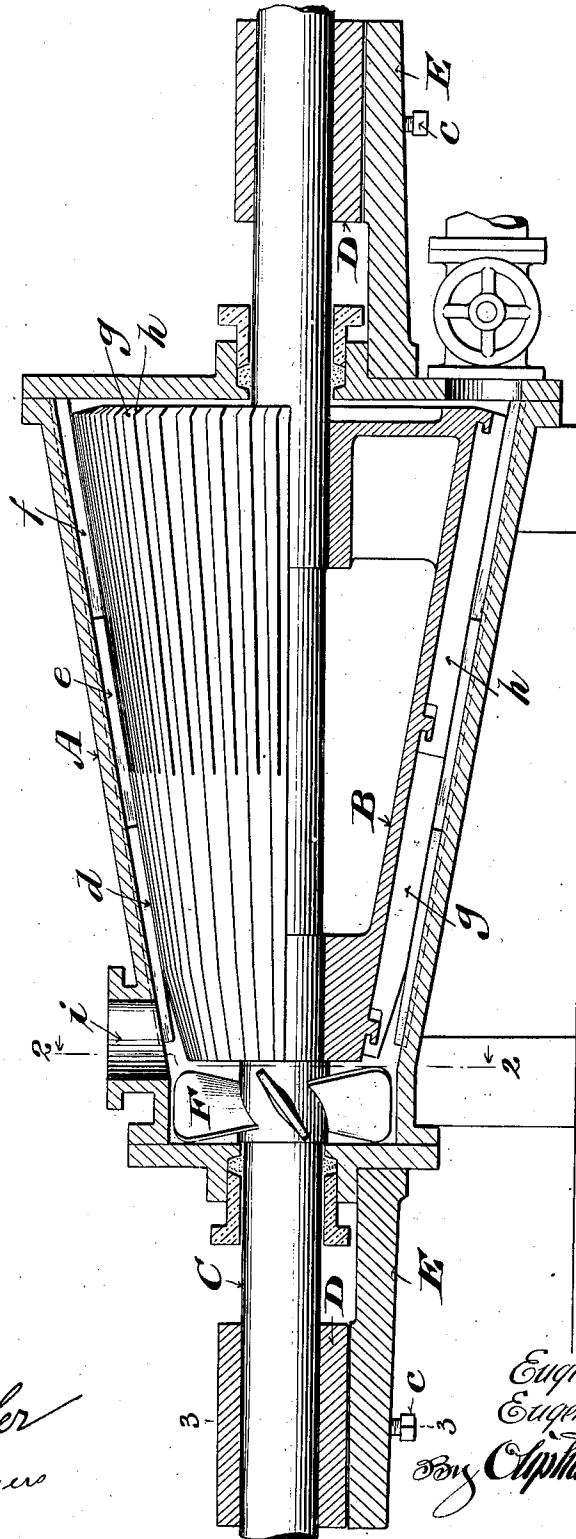
E. O'BRIEN & E. O'BRIEN, JR.
 SCREENING GRINDER.
 APPLICATION FILED OCT. 19, 1908.

933,780.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
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 Frank W. Rogers

Inventors:
 Eugene O'Brien
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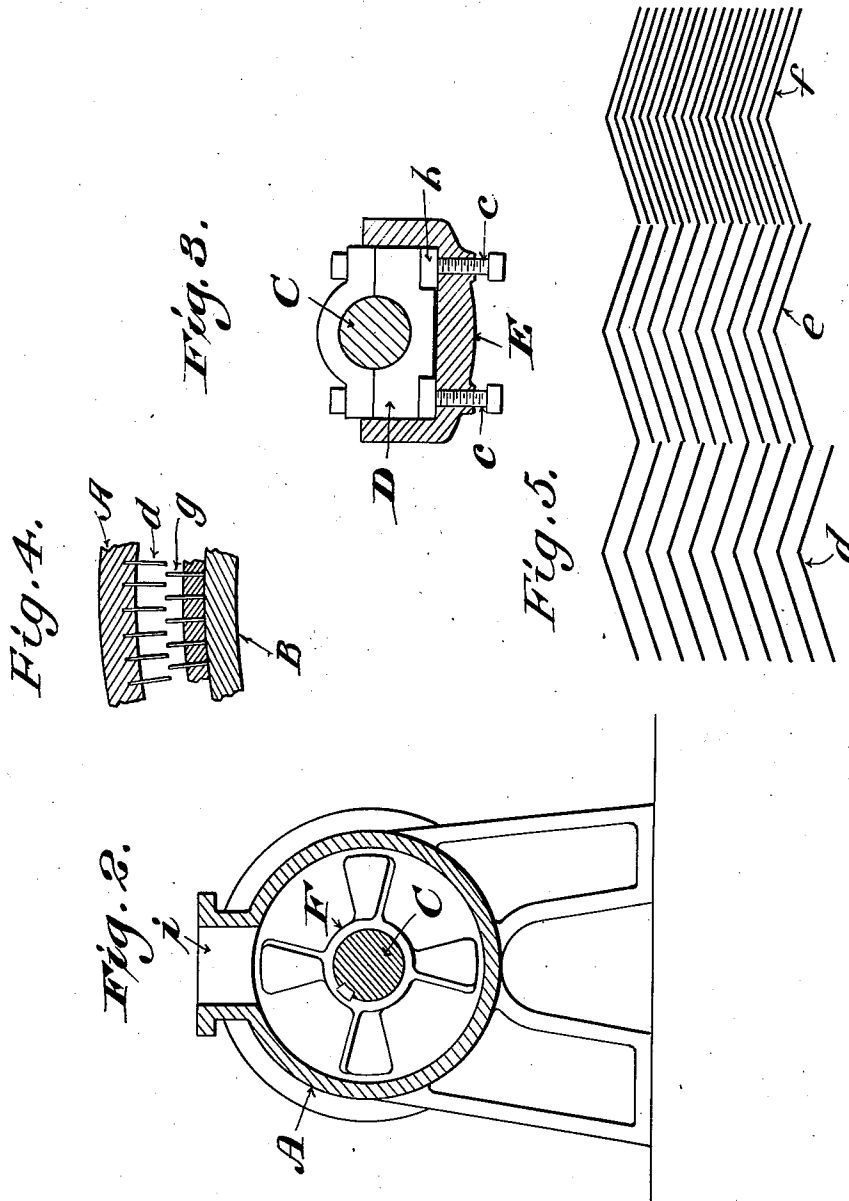
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2 SHEETS—SHEET 2.



Witnesses:
Geo. G. Felber
Frank W. Rogers

Inventor:
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UNITED STATES PATENT OFFICE.

EUGENE O'BRIEN AND EUGENE O'BRIEN, JR., OF EAU CLAIRE, WISCONSIN.

SCREENING-GRINDER.

933,780.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed October 19, 1908. Serial No. 458,495.

To all whom it may concern:

Be it known that we, EUGENE O'BRIEN and EUGENE O'BRIEN, Jr., both citizens of the United States, and residents of Eau Claire, in the county of Eau Claire and State of Wisconsin, have invented a new and useful Screening-Grinder; and we do hereby declare that the following is a full, clear, and exact description thereof.

Our invention consists in certain peculiarities of construction and combination of parts hereinafter particularly set forth with reference to the accompanying drawings and pointed out in claim; its object being to provide machines of the species aforesaid that may be employed to successfully grind pulp-mill screenings, tailings and other heretofore waste material, in order that the same may be utilized in the production of pulp-board, various grades of wrapping-papers or car-lining papers and other marketable material.

Figure 1 of the drawings represents a vertical longitudinal section of a grinder embodying our improvements; Figs. 2 and 3 vertical transverse section views respectively indicated by lines 2-2 and 3-3 in Fig. 1; Fig. 4, a similar view of a fragment of the shell and plug of the grinder; and Fig. 5, a diagram illustrating a preferred arrangement of knives in said shell.

Referring by letter to the drawings, A indicates the conical shell, B the conical core and C the core-shaft of the grinder. To provide for accurate centering of the core in the shell, so as to obtain the best results and highest efficiency of the engine, the core-shaft is run in adjustable bearings, each of which comprises a separable box having the underside of its block section D notched to fit upon spacers *b* set in the pillow-block E for said bearing in opposition to screws *c* that turn in said pillow-block. By means of the screws, the bearings aforesaid are readily adjusted for the purpose stated.

The shell and core are studded with knives suitably spaced, these knives being also suitably keyed and locked in place. It is prefer-

able in our grinder to employ three sets of knives in the shell. The first set of knives *d* are approximately one inch apart, the second set of knives *e* approximately three-eighths of an inch apart and the third set of knives *f* approximately one-quarter of an inch apart.

As shown in Fig. 5, it is preferable to have the knives of each set in the shell in tangent series in opposite directions from a line circumferentially of said shell. By varying the interval between knives in sets throughout the shell provision is had for gradual reduction of material fed to the grinder, whereby we obtain the best results with the least expenditure of power. The knives *g* of the core run the full length of said core at suitable intervals apart and are preferably tapered at the back end to obtain clearance for material fed to the grinder. Other knives *h* of the core alternate with the ones *g* in opposition to the knives *e*, *f*, of the shell to assist in the gradual reduction of fed material and saving in power as aforesaid. The shell is extended back of its feed opening *i* and the core to form a cylindrical chamber for a propeller F fast on the core-shaft, this propeller being preferably of bronze and pitched in such a manner as to constantly force the fed material into the cutting portion of the grinder, this being the important feature of our invention.

We claim:

A screening grinder having the shell thereof extended back of its feed-inlet to form a cylindrical chamber, and a propeller fast on the core-shaft of the grinder within said chamber.

In testimony that we claim the foregoing we have hereunto set our hands at Eau Claire, in the county of Eau Claire and State of Wisconsin in the presence of two witnesses.

EUGENE O'BRIEN.
EUGENE O'BRIEN, JR.

Witnesses:

J. A. STILP,
E. L. HOLDEN.