

No. 650,738.

Patented May 29, 1900.

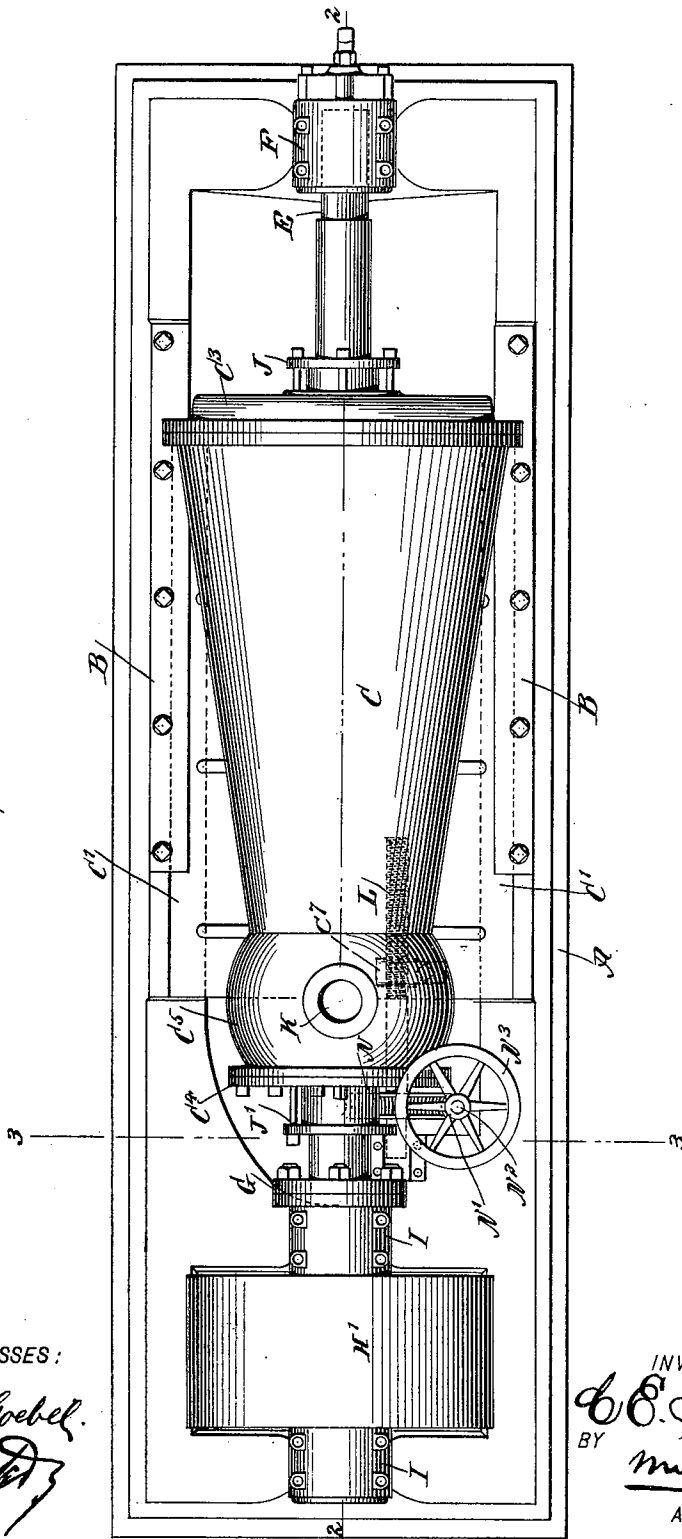
C. E. TORRANCE.
REFINING ENGINE.

(Application filed July 21, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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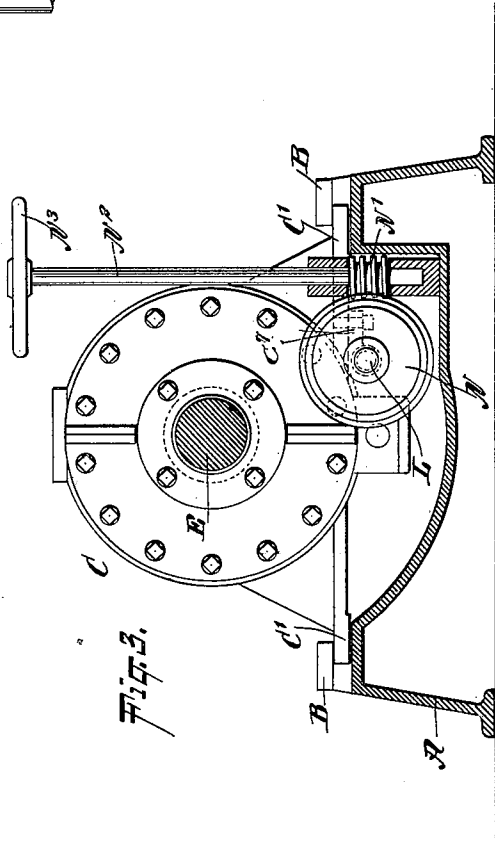
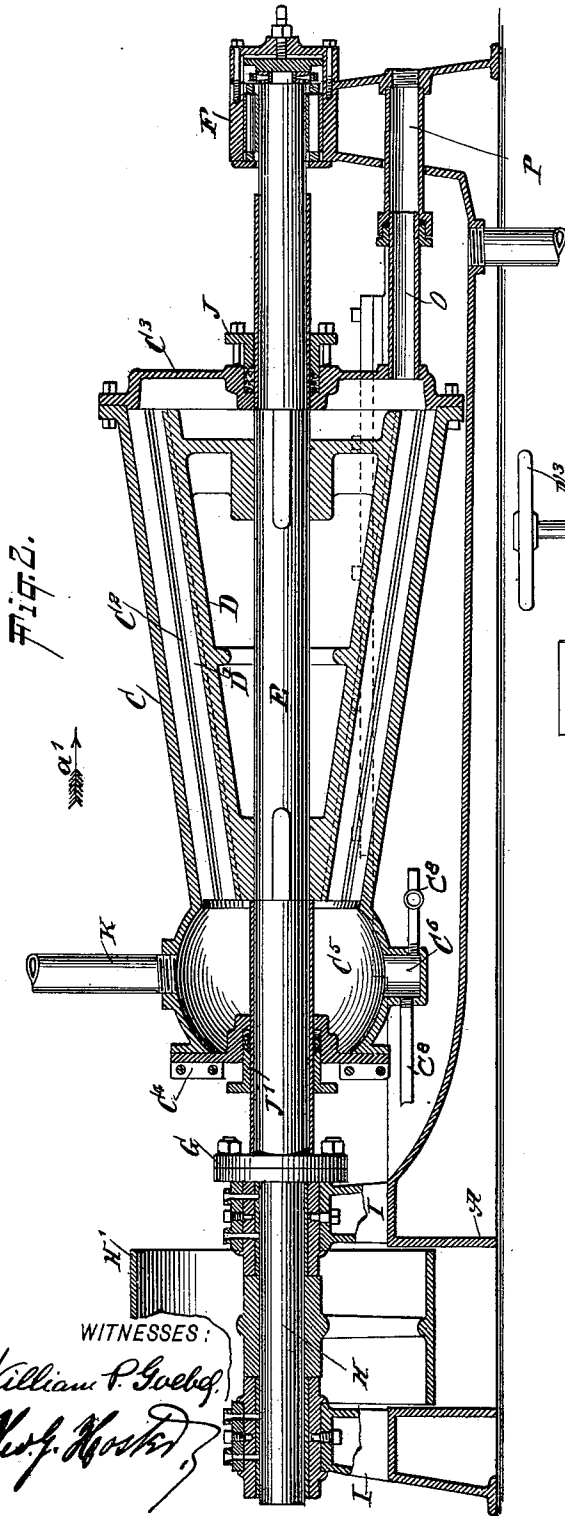
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2 Sheets—Sheet 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES EVERETT TORRANCE, OF NORTHAMPTON, MASSACHUSETTS,
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REFINING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 650,738, dated May 29, 1900.

Application filed July 21, 1899. Serial No. 724,622. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EVERETT TORRANCE, of Northampton, in the county of Hampshire and State of Massachusetts, have invented a new and Improved Refining-Engine, of which the following is a full, clear, and exact description.

The invention relates to paper-making machinery; and one object is to provide a new and improved refining-engine arranged to permit convenient, quick, and accurate adjustment of the shell and revolving plug without disturbing the position of the plug and the driving-gear, so that the latter always remains in true alinement with the overhead counter-shaft pulley; and a further object is to allow the removal of the plug and shell whenever deemed necessary for repairs and other purposes and without disturbing the driving-gear.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claim.

A practical embodiment of my invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement. Fig. 2 is a longitudinal sectional side elevation of the same approximately on the line 2 2 of Fig. 1, and Fig. 3 is a transverse section of the same on the line 3 3 in Fig. 1.

A suitably-constructed bed-plate A is provided with longitudinally-extending guide-ways B, in which are fitted to slide flanges C', projecting from a shell C, in which is mounted to rotate a plug D, secured on a shaft E, journaled at one end in a thrust-bearing F, supported on the bed-plate A, and the other end of said shaft is connected by a suitable coupling G with a driving-shaft H, carrying a driving-pulley H', connected by belt with other suitable machinery, such as an overhead counter-shaft pulley for imparting a rotary motion to the driving-shaft H, the shaft E, and the plug D. The driving-shaft H is journaled in suitable bearings I, attached to the bed-plate A, as is plainly indicated in the drawings.

The shell C is provided with the usual lining C²; and the plug D is provided with the usual bars or cutters D', and said shell C, as well as the plug D, is preferably made in the form of a frustum of a cone, as is plainly indicated in Fig. 2. The heads C³ C⁴ of the shell C are provided with stuffing-boxes J J', respectively; through which passes the shaft E, and the head C⁴ closes the receiving chamber or throat C⁵ of the shell. The throat C⁵ is provided on the top with a receiving-pipe K, through which passes the paper stuff into said throat C⁵ and from the latter to the plug D and shell C for treatment by the revolving plug.

The bottom of the receiving chamber or throat C⁵ is provided with a collecting-box C⁶ for hard substances to settle in to prevent injury of the bars D' by such substances. The latter are discharged from time to time from the collecting-box by means of suitable pipes C⁸.

In order to adjust the shell C longitudinally relatively to the plug D to compensate for wear of the bars D', I provide the following device: On the outside of the shell C, preferably at the lower part thereof, is arranged or formed a nut C', in which screws a screw-rod L, mounted to turn in suitable bearings arranged on the bed-plate A. On the outer end of the screw-rod L is secured a worm-wheel N in mesh with a worm N', secured on the lower end of a vertically-disposed shaft N², journaled in suitable bearings on the bed-plate A and provided at its upper end with a hand-wheel N³, under the control of the operator. When the wear on the bars D' has been such that adjustment is required to bring the bars in proper relative position to the inner surface of the lining C², then the operator turns the hand-wheel N³ to cause the shaft N² and its worm N' to turn the worm-wheel N and the screw-rod L and move the shell C longitudinally in its bearings B in the direction of the arrow a' until said lining C² is again in proper relation to the outer or peripheral surface of the cutters or bars D'.

When it is desired to remove the shell and the plug D, together with its shaft E, for repairs or for other purposes, it is only necessary to disconnect the shaft E from the thrust-

bearing F and loosen the coupling G to disconnect the shaft E from the driving-shaft H. The plug can then be drawn out of the shell, and, if desired, the latter can be removed
5 from its guideways B on the bed-plate A.

In the head C^s, preferably at the bottom thereof, is arranged an outlet-pipe O, having a slidable connection in a discharge-pipe P, carried by the bed-plate A and leading to a
10 suitable place of discharge.

By reference to Fig. 2 it will be seen that when the shell C is shifted in the direction of the arrow *a*, as above explained, then the discharge-pipe O is free to slide in the pipe
15 P without disconnecting the two and without requiring any attention whatever on the part of the operator.

Having thus fully described my invention,

I claim as new and desire to secure by Letters Patent—

In a refining-engine, a plug-shaft, a plug
carried thereby, a bed-plate for supporting
said plug-shaft and having a longitudinal
guideway at each side, a shell for said plug
and having side flanges fitted to slide in said
25 guideways, means for moving said shell, a
discharge-pipe carried by said shell, and a sta-
tionary discharge-pipe secured in the bed-
plate and having the first-named discharge-
pipe slidably inserted therein, as and for the
30 purpose set forth.

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Witnesses:

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