

(No Model.)

S. E. WEBBE.
CENTRIFUGAL PUMP.

No. 440,798.

Patented Nov. 18, 1890.

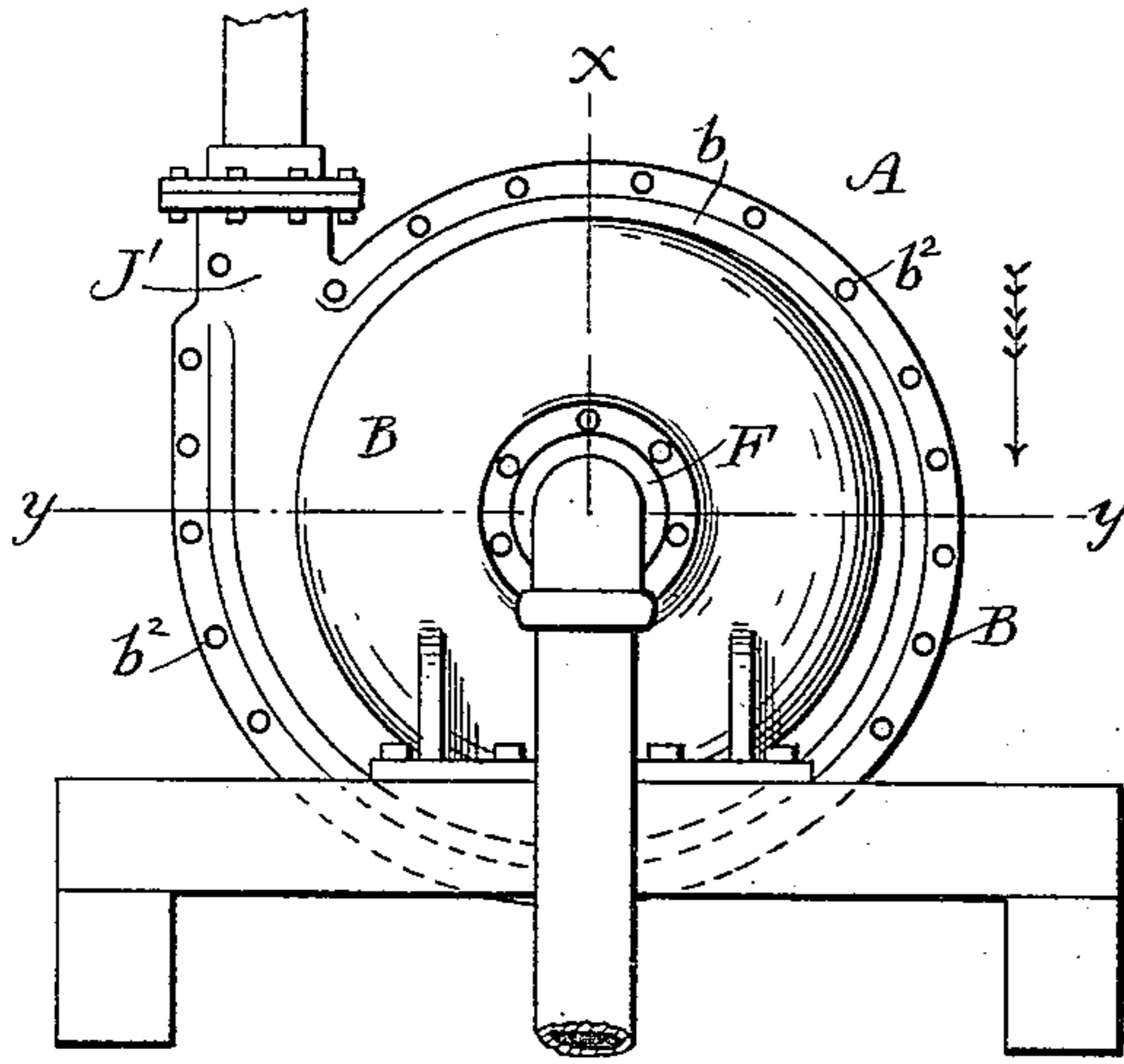


FIG. 1

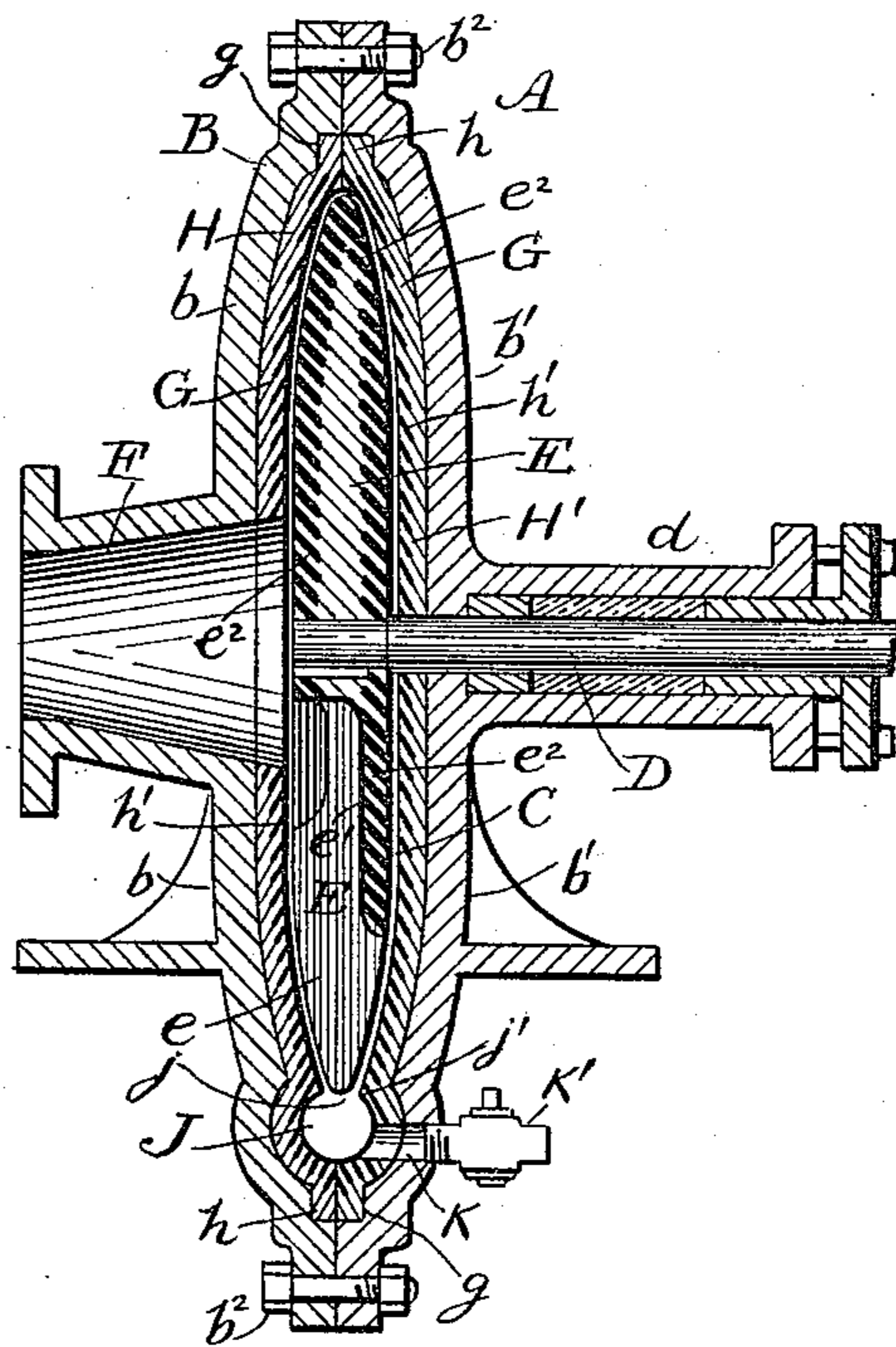


FIG. 2.

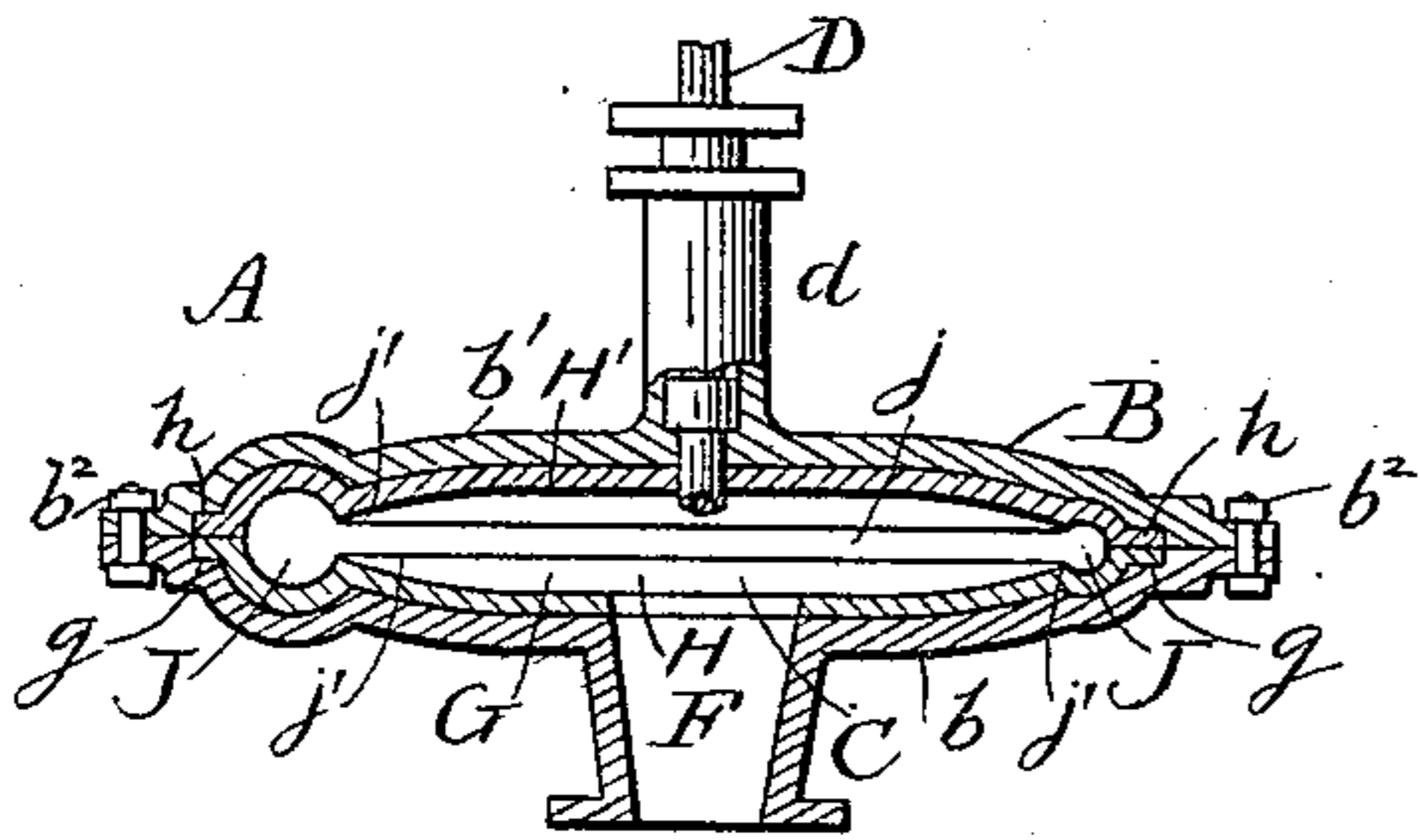


FIG. 3.

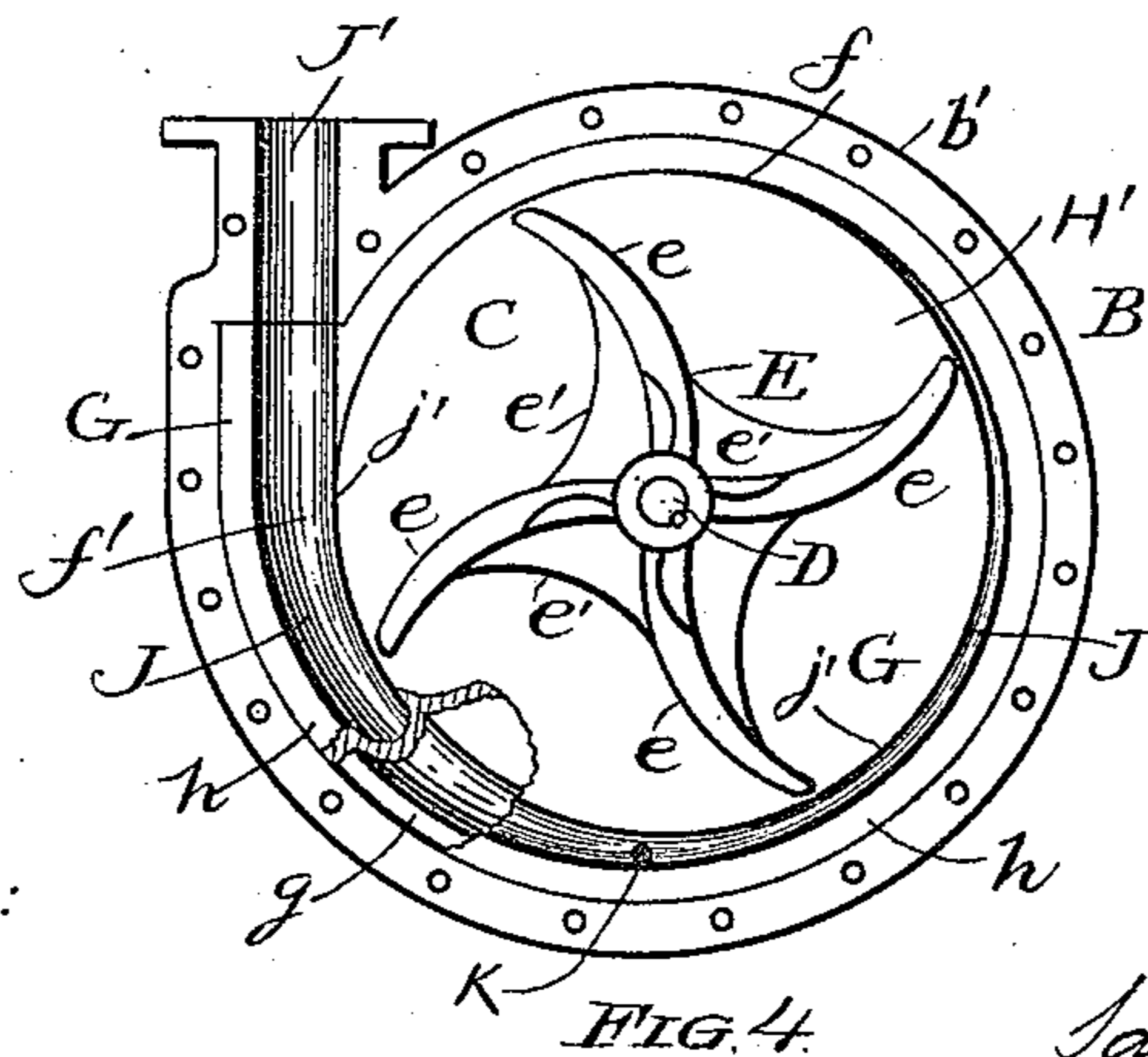


FIG. 4.

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UNITED STATES PATENT OFFICE.

SAMUEL E. WEBBE, OF CHICAGO, ILLINOIS.

CENTRIFUGAL PUMP.

SPECIFICATION forming part of Letters Patent No. 440,798, dated November 18, 1890.

Application filed April 5, 1890. Serial No. 346,739. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL E. WEBBE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Centrifugal Pumps, of which the following, in connection with the accompanying drawings, is a specification.

My invention relates chiefly to the internal structure of pumps of the class above named, the principal feature of my improvement being a removable lining, all of which I will hereinafter specifically describe.

In the drawings, Figure 1 is a side view of my improved pump. Fig. 2 is a sectional elevation of the pump enlarged, taken on the line x of Fig. 1. Fig. 3 is a horizontal section of the pump casing and lining, taken on the line $y y$ of Fig. 1. Fig. 4 is an interior view of one side of the pump with the wheel shown.

Like letters of reference indicate like parts.

The pump A has a shell or casing B made in two parts $b b'$, which form a wheel-chamber C. The said chamber is round and has concave sides, as shown.

D is a shaft journaled in the boxing d and entering the chamber C. The wheel E is mounted on the shaft D. This wheel consists of a series of pallets $e e$, having intermediate webs $e' e'$.

In casting the wheel E, I chill its wearing surfaces or sides, as indicated by the thickened section-lines. (Shown at e^2 in Fig. 2.) The suction conduit or inlet F is centrally opposite the wheel E, as shown.

G is the removable lining, which consists of two parts or sections H H'. The sections H H' are curvilinear, following the contour of the casing, and meeting centrally, as shown. The said sections have flanges $h h$, which enter grooves $g g$ in the casing B. The flanges serve to hold the lining G in place, the bolts b^2 holding the whole together.

The circular duct or passage J starts at a point about f , as shown in Fig. 4, and follows

exteriorly the chamber C, an opening j being formed by said duct cutting into the chamber. The duct J leaves the chamber C tangentially at f' , Fig. 1, and terminates in the passage J' or outlet of the pump. It will be seen from the drawings that the duct J and chamber C intersect so that lips or ridges $j' j'$ are presented between the duct and the chamber C.

In use I apply my pumps principally to pumping water containing sand for stone-sawing machines, which causes a great deal of wear to the working-surfaces of the pump, and to increase the durability of the sectional lining G, I chill the face of each section, as shown in Fig. 2, the thickened section-lines $h' h'$ representing the chilled portion. The lips $j' j'$ help to retain the sand in the duct and keep it from working back into the wheel-chamber.

K is a drain-outlet at the bottom of the duct J, a cock K' being attached thereto.

It is easily to be seen that my sectional lining wholly lines the interior of the pump, and is constructed of only two pieces, which are constructed to render very durable service, are easily removable, and can be replaced by new sections.

Having described my invention, what I claim as new is—

1. In a centrifugal pump, the pump-casing having the wheel-chamber C and a duct J formed in said casing following exteriorly the chamber C from a point about f and leaving the chamber C tangentially at f' , in combination with a sectional lining G, wholly lining said duct and chamber, substantially as described.

2. In a centrifugal pump, the sectional lining G, having flanges $h h$ entering grooves $g g$ in the casing B, as shown and described.

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Witnesses:

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