

(No Model.)

C. RUSSELL & P. H. CRAGIN.
PAPER PULP SCREEN.

No. 359,543.

Patented Mar. 15, 1887.

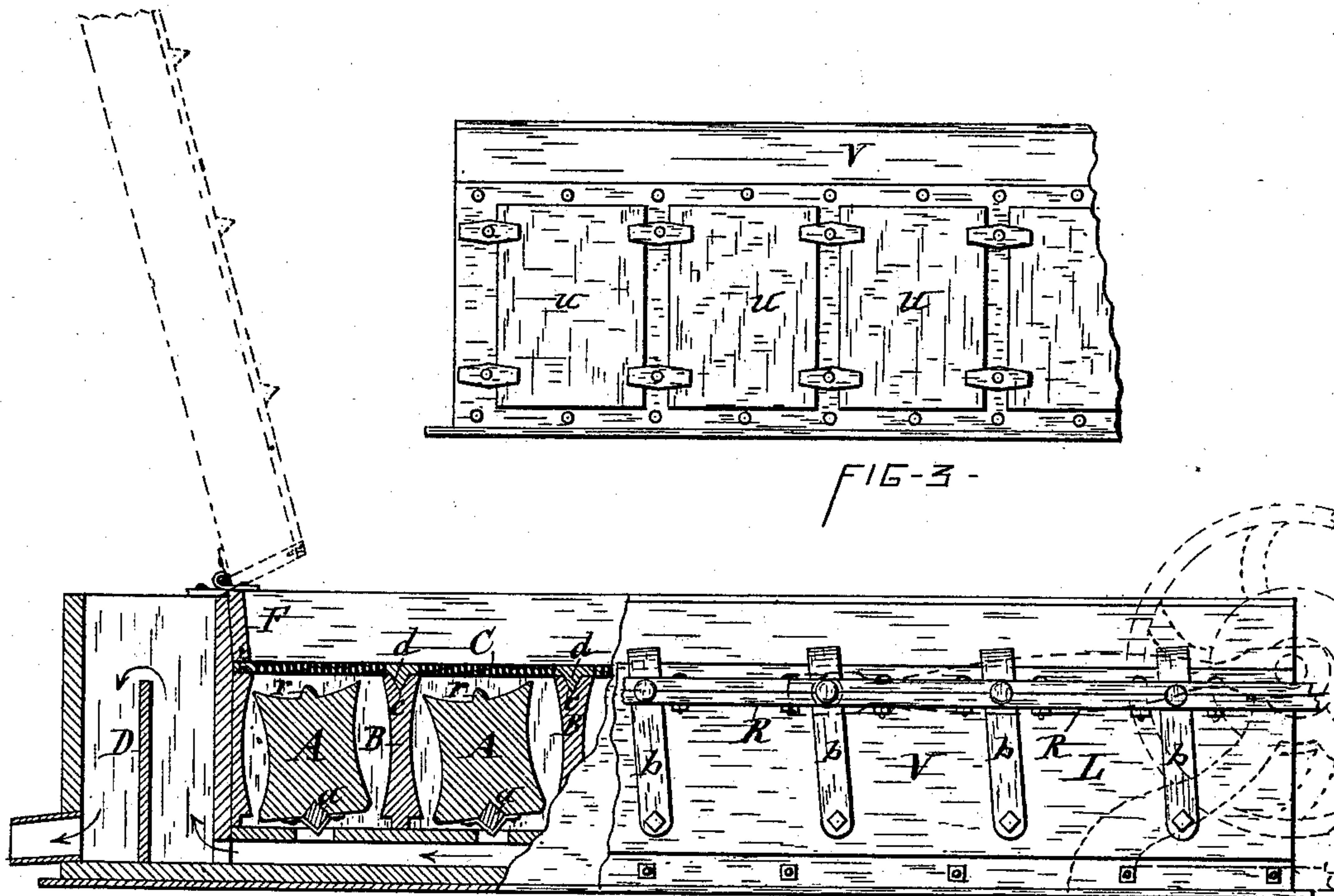


FIG-1-

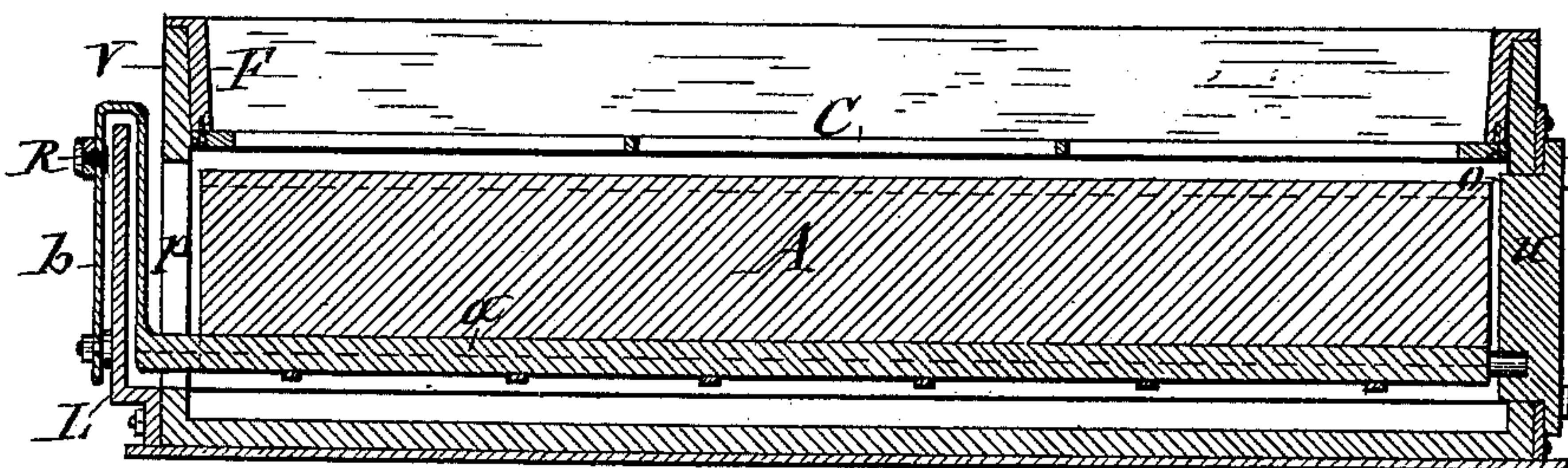


FIG-2-

WITNESSES:

C. Bendixon
A. F. Walz

INVENTORS:

Carlton Russell & Patrick H. Cragin
BY Wm. L. Lacey & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

CALVIN RUSSELL AND PATRICK H. CRAGIN, OF PENN YAN, NEW YORK,
ASSIGNORS TO THE SENECA SCREEN COMPANY, OF SAME PLACE.

PAPER-PULP SCREEN.

SPECIFICATION forming part of Letters Patent No. 359,543, dated March 15, 1887.

Application filed August 14, 1886. Serial No. 210,867. (No model.)

To all whom it may concern:

Be it known that we, CALVIN RUSSELL and PATRICK H. CRAGIN, of Penn Yan, in the county of Yates, in the State of New York, have invented new and useful Improvements in Paper-Pulp Screens, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the paper-pulp screen for which we have filed an application for United States Letters Patent on the 26th day of March, 1886, Serial No. 196,624.

Our present invention consists in an improved construction and combination of parts whereby the apparatus is rendered more efficient in its operation and other important advantages are attained for the same, as hereinafter more fully explained, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a side elevation of our improved paper-pulp screen, with a portion of the side broken away to illustrate the internal arrangement thereof. Fig. 2 is a longitudinal vertical section of the same, and Fig. 3 is a partial view of the opposite side of the pulp-vat.

Similar letters of reference indicate corresponding parts.

V represents the vat in which the impurities are eliminated from the paper-pulp, said vat being provided at its discharge end with a dam, D, which retains a body of liquid in the vat, reaching nearly to the screen C, in the usual manner. The said screen has heretofore been firmly attached to the interior of the vat, and it was therefore exceedingly difficult to obtain access to the pumping apparatus underneath the screen when necessary for cleaning or repairs. To obviate this defect we now make the screen removable from the vat by hinging to the top of the vat a frame, F, which is closely fitted to the interior of the vat, and adapted to be swung on its hinges and raised out of the vat, as represented by dotted lines in Fig. 1 of the drawings, and to said frame we attach the screen C.

A A denote the rocking or oscillatory pumping-bars arranged in the diluted pulp underneath the screen. In practice we find that by providing the top of the said pumping-bars

with one or more longitudinal ribs, *r r*, they are rendered more effective in their operation.

B B represent the stationary bars or partitions between the pumping-bars A A. These partitions we now provide with longitudinal indentations or channels *c* in their tops, and secure to the under side of the screen C strips *d*, of wood or metal or other suitable material, coinciding with the channels of the partitions and fitted closely thereto, so as to form a tight joint and support the central portion of the screen, and at the same time form a separate and distinct compartment for each pumping-bar, thereby further increasing the efficiency of the pumping apparatus under the screen.

In order to dispense with the stuffing-boxes in the sides of the vat for the reception of the journals of the pumping-bars, we now provide one side of the vat with openings *o o*, respectively, at the ends of the pumping-bars, and detachably secure to the vat covering-plates *u u*, which close said openings, and are provided on their inner sides with suitable bearings for the trunnions or ends of the shafts of the pumping-bars, as shown in Fig. 2 of the drawings. The opposite side of the vat we provide with ports *p*, and secure to the exterior of the vat below said ports an apron, L, which rises to an elevation above the water-line of the vat.

The shafts *a* of the pumping-bars we extend through the ports and terminate them in crank-arms *b b*, which extend over the top of the apron and down on the exterior thereof, and are pivoted thereon at points respectively in lines with the shafts *a*.

A reciprocating rod, R, connected to the respective crank-arms, imparts the requisite oscillatory motion to the pumping-bars.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In combination with the paper-pulp screen, a series of pulp-compartments separated from each other by intervening partitions extending to the under side of the screen, and a series of pumping bars or plungers arranged, respectively, in the said compartments, substantially as set forth.

2. The combination, with the vat, screen,

and plungers in the vat, of partitions arranged between said plungers and provided with indentations on their tops and strips secured to the under side of the screen and adapted to rest in the said indentations and support the central portion of the screen in the vat, substantially as set forth and shown.

3. In combination with the vat and screen, the oscillatory pumping-bars A A, provided with the longitudinal rib or ribs *r*, substantially as described and shown.

4. In combination with the screen C and pumping-bars A A, the vat V, provided with ports *p*, the apron L, secured to the exterior of the vat below the ports thereof and extending above the water-line of the vat, and the crank-arms *b b*, extending through the ports and up over the top of the apron and pivoted to the exterior thereof, substantially as described and shown.

5. The combination, with the vat V, of the pulp-screen hinged on said vat, as set forth.

6. The combination, with the vat V, of a frame removably connected to said vat and

the screen secured to said frame, substantially as described and shown.

7. The combination, with the vat V, of a frame removably connected to said vat, the screen secured to said frame, and partitions in the vat supporting the central portion of the screen, substantially as shown and set forth.

8. The pumping-bars provided with a trunnion on one end, in combination with the vat provided with openings at said ends of the bars, and covering-plates detachably secured in said openings and provided with bearings for the trunnions of the pumping-bars, substantially as described and shown.

In testimony whereof we have hereunto signed our names and affixed our seals, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 12th day of August, 1886.

CALVIN RUSSELL. [L.S.]

PATRICK H. CRAGIN. [L.S.]

Witnesses:

FREDERICK H. GIBBS,
C. BENDIXON.