(No Model.) 2 Sheets—Sheet 1.

L. ZEŸEN.

Pulp Strainer.

No. 235,976. Patented Dec. 28, 1880.

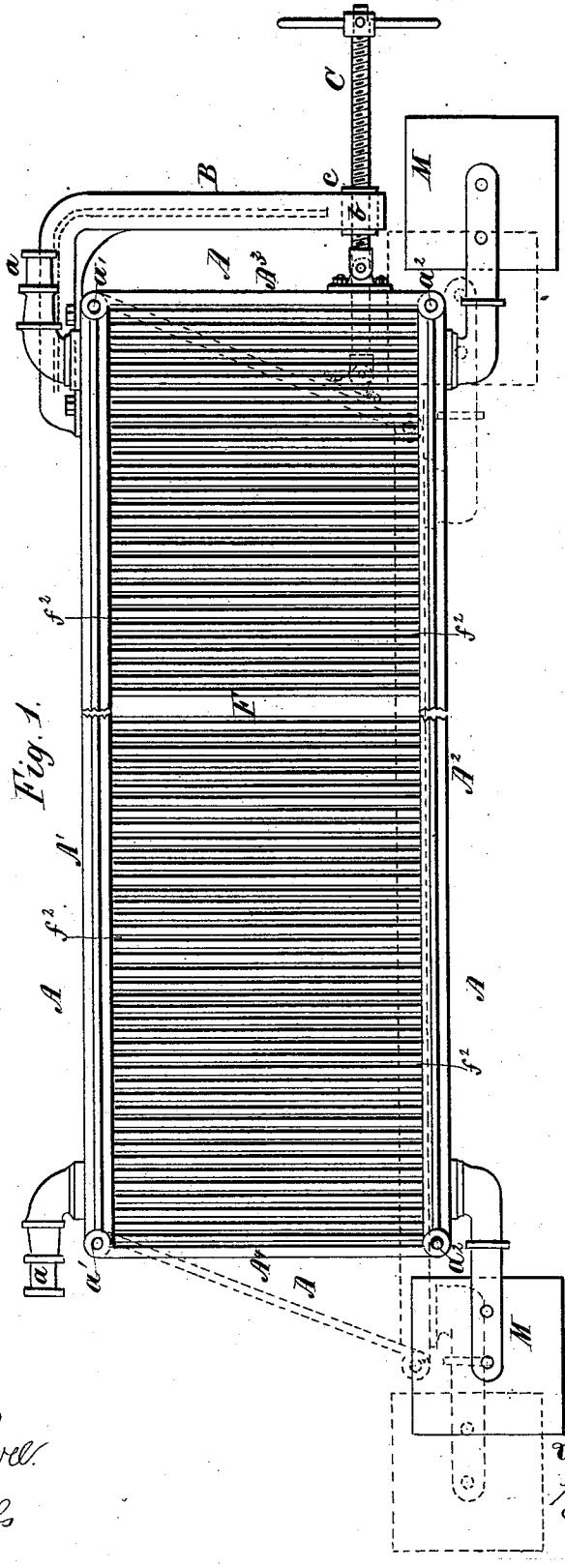


Fig. 1.

Witnesses.
Wm. A. McElwee
H. A. Daniels

Inventor.
Leopold Zeyen
by Henry Orth
atty

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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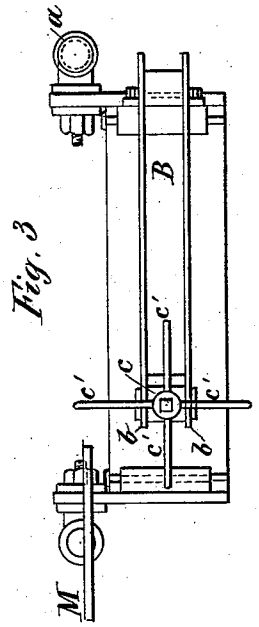


Fig. 3

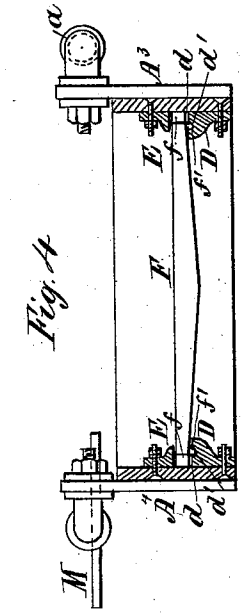


Fig. 4

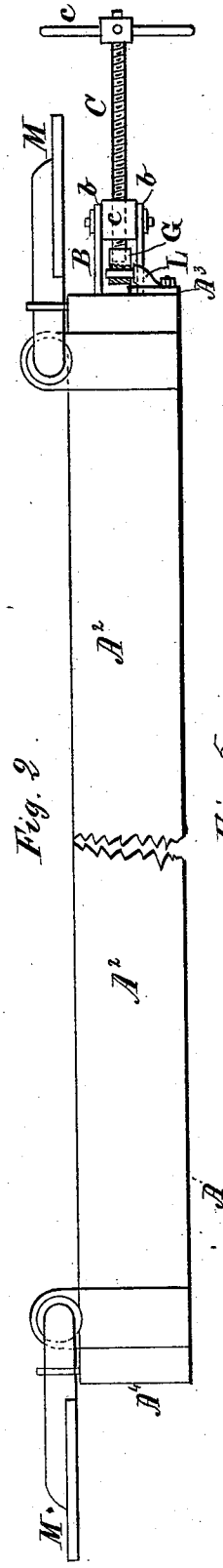


Fig. 2

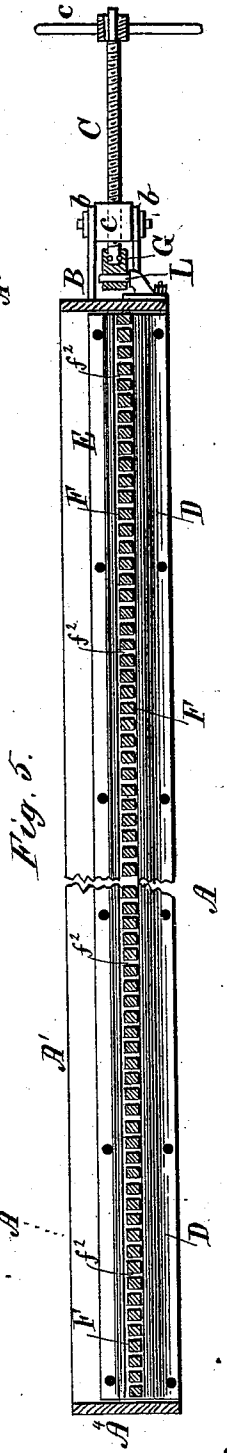


Fig. 5.

Witnesses
Wm. A. McElwee.
H. A. Daniels.

Inventor
Leopold Zeyen
per Henry Orth
Atty

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LEOPOLD ZEŸEN, OF RAGUHN, GERMANY.

PULP-STRAINER.

SPECIFICATION forming part of Letters Patent No. 235,976, dated December 28, 1880.

Application filed November 10, 1880. (No model.)

To all whom it may concern:

Be it known that I, LEOPOLD ZEŸEN, subject of the Duke of Anhalt, residing at Raguhn, and doing business under the firm of Gottl. Heerbrandt, have invented certain new and useful Improvements in Pulp-Strainers; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The pulp-strainer shown in the accompanying drawings differs, essentially, from those heretofore employed in that, instead of using a strainer-plate, or, as recently proposed, two superposed movable strainer-plates, I employ a series of bars, which are arranged in a square frame capable itself of being displaced while in operation to contract or enlarge the space between each two of such bars.

Figure 1 is a plan view. Figs. 2 and 3 are front and end elevations, respectively, and Figs. 4 and 5 transverse and longitudinal sections, respectively, of my improved strainer.

The wall A′ of the frame A is provided with trunnions *a*, upon which the whole frame is capable of oscillating vertically, and said rear wall cannot move in any other direction. The rear wall is further provided upon that end nearest to the operator with an angular bracket, B, projecting in front of said end A^3 of the frame. The bracket terminates in a forked bearing, *b*, in which is pivoted a nut, *c*, through which passes a screw-spindle, C, for a purpose presently explained. The ends A^3 A^4 of the frame are pivoted to the rear wall, A′, and the front wall, A^2, by means of bolts a' a' a^2 a^2, so that the frame may be displaced longitudinally, as shown by dotted lines, Fig. 1.

Upon the front and rear walls cleats D E are bolted, the former serving as a bearing for the bars F, and the latter serving to hold these bars firmly in position. The cleats D are provided with trunnion-apertures *d*, equidistant from each other, for the reception of the trunnions *f* of the bars, and with a groove, *d′*, for the reception of the projection or nose *f′* of said bars, as plainly shown in Figs. 4 and 5, to hold them in their vertical position, thus forming a grating capable of longitudinal displacement.

If the front wall of the frame is pushed toward one side, the rectangular frame will become a rhomboidal one, and thereby contracting the spaces f^2 between the bars F, the extent of this contraction being in proportion to the deviation of the bars F from a right angle relatively to the frame; hence the greater this deviation the narrower will be the space between the bars. The facility with which the contraction or expansion of the pulp-passages f^2 can be effected adapts the strainer for displacement during the operation of straining.

When the frame is in a rectangular position the passages f^2 are widest, and may then readily be cleared if choked up by washing out the knots or other obstruction. To effect this displacement of the frame and bars the screw-spindle C is employed, one end of said spindle being pivoted to a head, G, which itself is pivoted upon a bracket-pivot, L, bolted to the end A^3 of the frame. By means of this latter arrangement and the pivoted nut *c* in the bracket B the spindle can assume the necessary inclination when the front and end walls of the frame are displaced. Thus by rotating the spindle C by means of its spokes or handles *c′*, either toward the right or left, the position of the frame may be changed from a rectangular to a rhomboidal, and vice versa, said front and end walls being hinged, as heretofore stated, to each other and to the rear wall, which is itself stationary longitudinally.

The shaking-wheels of the shaking or vibrating devices impinge upon the plates M M, the length of which may be regulated to the extent of the displacement of the frame, to avoid the displacing of said wheels upon their shafts and to impart at all times the necessary vertical vibration to the strainer upon its trunnions *a*.

Having now described my invention, what I desire to claim, and secure by Letters Patent, is—

1. The improved pulp-strainer hereinbefore described, consisting of a pulp-receiver having three of its walls arranged for displacement relatively to the fourth stationary wall, in combination with a series of bars or plates

pivoted to said pulp-receiver, to form a strainer capable of displacement with the receiver, substantially as and for the purpose specified.

2. The improved pulp-strainer, consisting of a pulp-receptacle having its three walls arranged for longitudinal displacement relatively to the fourth wall arranged for lateral movement, in combination with a series of bars or plates pivoted to the pulp-receptacle, to form a strainer capable of displacement with the receiver, substantially as described, for the purpose specified.

3. In a pulp-strainer composed of a box or pulp-receptacle having its four walls hinged together and arranged to be displaced from a right angle to a rhomboid and to vibrate laterally, in combination with a grating or strainer of independent bars or plates, each capable of displacement with the receiver, and means, substantially as described, for displacing the receiver longitudinally and vibrating the same, substantially as and for the purpose specified.

4. As an improvement in pulp-strainers, a strainer-frame having its four walls hinged together and provided with bearings for a series of independent strainer-bars, in combination with said bars, terminating in trunnions *f* and provided with a downwardly-projecting nose or lip, *f'*, fitting in a groove in said bearings to maintain their parallelism, substantially as specified.

5. The combination, with the frame A, hinged together as described, and provided with the bracket B and the pivot-pin L, of the pivoted head or sleeve G, the nut *c*, and the screw-spindle C, all arranged and operating substantially as and for the purpose specified.

6. In a pulp-strainer, the combination of the frame A, having its four walls hinged together, as set forth, oscillating upon trunnions *a* and carrying the bracket B and bracket-pivot L, the strainer-bars F, pivoted in bearings formed by cleats D E, the screw-spindle C, pivoted nut *c*, and head or sleeve G, all constructed, arranged, and operating substantially as and for the purpose specified.

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

LEOPOLD ZEŸEN.

Witnesses:

GEORGE LOUBIER,

BERTHOLD ROI.