No. 834,192. PATENTED OCT. 23, 1906.

F. M. CHAPMAN.

PULP SCREEN.

APPLICATION FILED APR. 27, 1906.

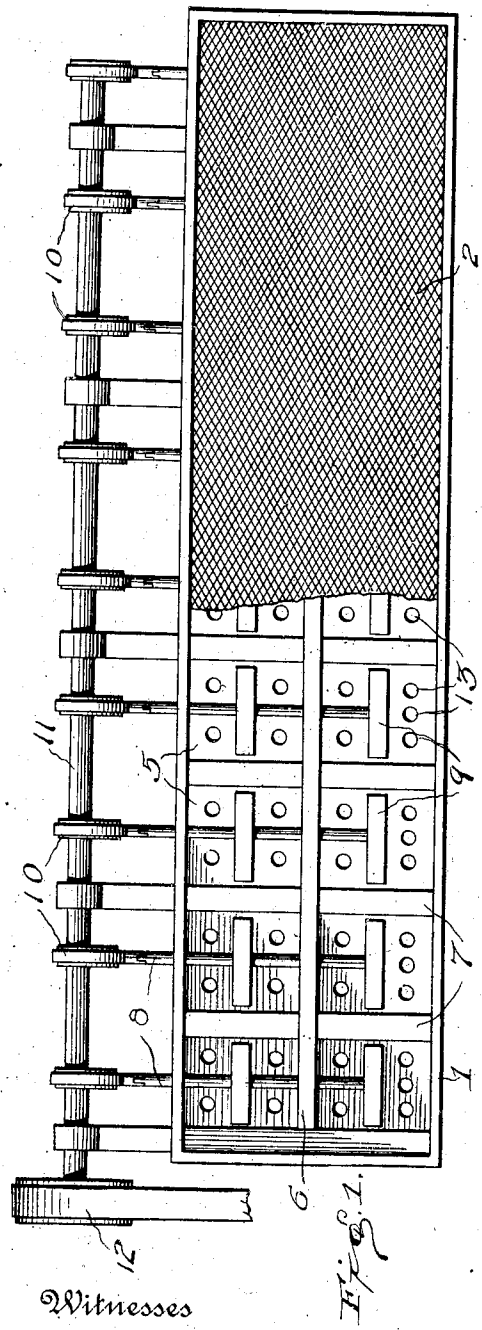

Fig. 1.

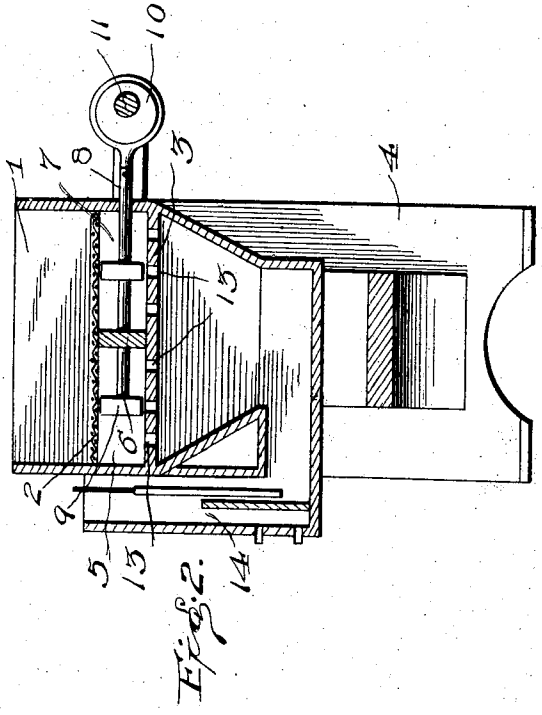

Fig. 2.

Witnesses

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PULP-SCREEN.

No. 834,192. Specification of Letters Patent. Patented Oct. 23, 1906.

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To all whom it may concern:

Be it known that I, FRANK M. CHAPMAN, a citizen of the United States, residing at Fort Edward, in the county of Washington and State of New York, have invented certain new and useful Improvements in Pulp-Screens; 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.

My invention relates to machines for screening paper and pulp in the manufacture of paper, and especially to that class of screens in which flat screen-plates are used.

The object of my invention is to provide a screen of the general type of the old diaphragm screen, but in which suction to draw the pulp through the screen-plates is created by horizontally-movable pistons instead of by vertically-reciprocated diaphragms.

The invention constitutes an improvement on the screen shown and described in my United States Patent No. 814,587, dated March 6, 1906; and it consists in the features of construction and combinations of parts hereinafter described, and more particularly pointed out in the claims concluding this specification.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a plan view of a screen constructed in accordance with my invention, part of the screen-plate being broken away to show the arrangement of the pistons; and Fig. 2 is a transverse vertical sectional view of the screen.

While the preferred embodiment of my invention is illustrated in the accompanying drawings and its construction and operation are described in this specification, the right is reserved to make such changes from the construction shown and described herein as the scope of the claims hereto appended will permit.

In carrying out my invention I construct the vat at the top the same as in the old flat screens, the bottom of said vat being formed by the screen-plate, which rests upon cross-bars arranged at suitable intervals throughout the length of the screen. Said cross-bars rest upon the horizontal bottom, through which perforations are made for the passage of the screened stock to the chamber below, from which it passes to the flow box or outlet. A longitudinal partition is arranged down the middle of the space below the screen-plate, whereby and by means of the cross-bars said space is divided up into pairs of piston-chambers, one of each pair arranged on each side of the longitudinal partition between two adjacent cross-bars. Each piston-chamber has a piston mounted therein, and the pistons in each pair of chambers are mounted on a common reciprocating shaft which passes through the longitudinal partition and the side of the screen-frame and connects to an eccentric mounted on a revoluble shaft arranged along the side of the screen.

Referring more particularly to the drawings, 1 is the vat, 2 is the screen-plate, 3 the perforated bottom, and 4 the supporting-framework. The piston-chambers 5 are formed, as previously described, by the longitudinal partition 6 and the cross-bars 7. The reciprocating shafts 8, carrying the pistons 9, are connected to eccentrics 10 on the revoluble shaft 11, which also carries a belt-pulley 12, by means of which it is revolved. The reciprocation of the pistons in their respective chambers when the rotary shaft is revolved creates a suction which draws the material through the screen-plate into said chambers, from whence it flows through the perforations 13 in the bottom 3 to the flow-box 14.

It is obvious that the screen may be made wider and the number of longitudinal partitions increased, with a corresponding addition of pistons on each piston rod or shaft, without departing from the spirit of my invention.

I claim—

1. In the machine of the character described, the combination with a screen-plate, of a perforated bottom arranged below said plate, cross-pieces arranged between said screen-plate and bottom and dividing the space between them into a plurality of chambers, a plurality of pistons, one arranged in each of said chambers and adapted to move from side to side of the screen, a plurality of rods, each carrying a piston, and a revoluble shaft arranged at the side of the screen and carrying a series of eccentrics to each of which is connected one of said piston-rods.

2. In a machine of the character described, the combination with a screen-plate, of a per-

forated bottom arranged below said plate, a longitudinal partition and a series of cross-pieces arranged between said screen-plate and bottom plate and dividing the space between them into a plurality of chambers arranged in pairs transversely of the screen, a plurality of pistons, one arranged in each of said chambers, a plurality of piston-rods, each carrying the pistons in one pair of chambers, and a revoluble shaft carrying a series of eccentrics to each of which is connected one of said piston-rods.

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

FRANK M. CHAPMAN.

Witnesses:

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