

(No Model.)

F. WILLIAMS.

SCREEN PLATE OR PULP STRAINER FOR PAPER MAKING MACHINES.

No. 313,037.

Patented Feb. 24, 1885.

FIG. 1.

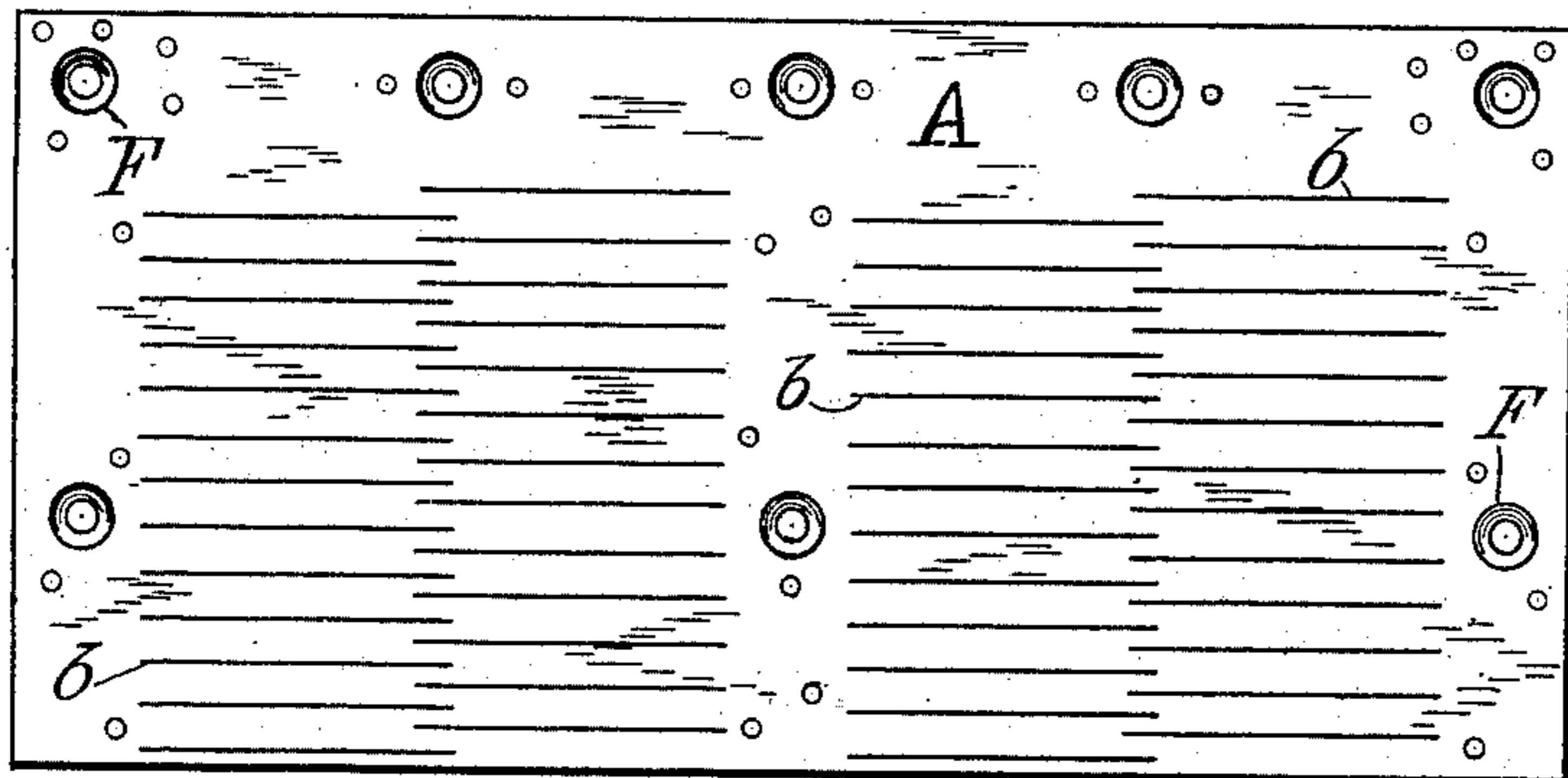


FIG. 2.

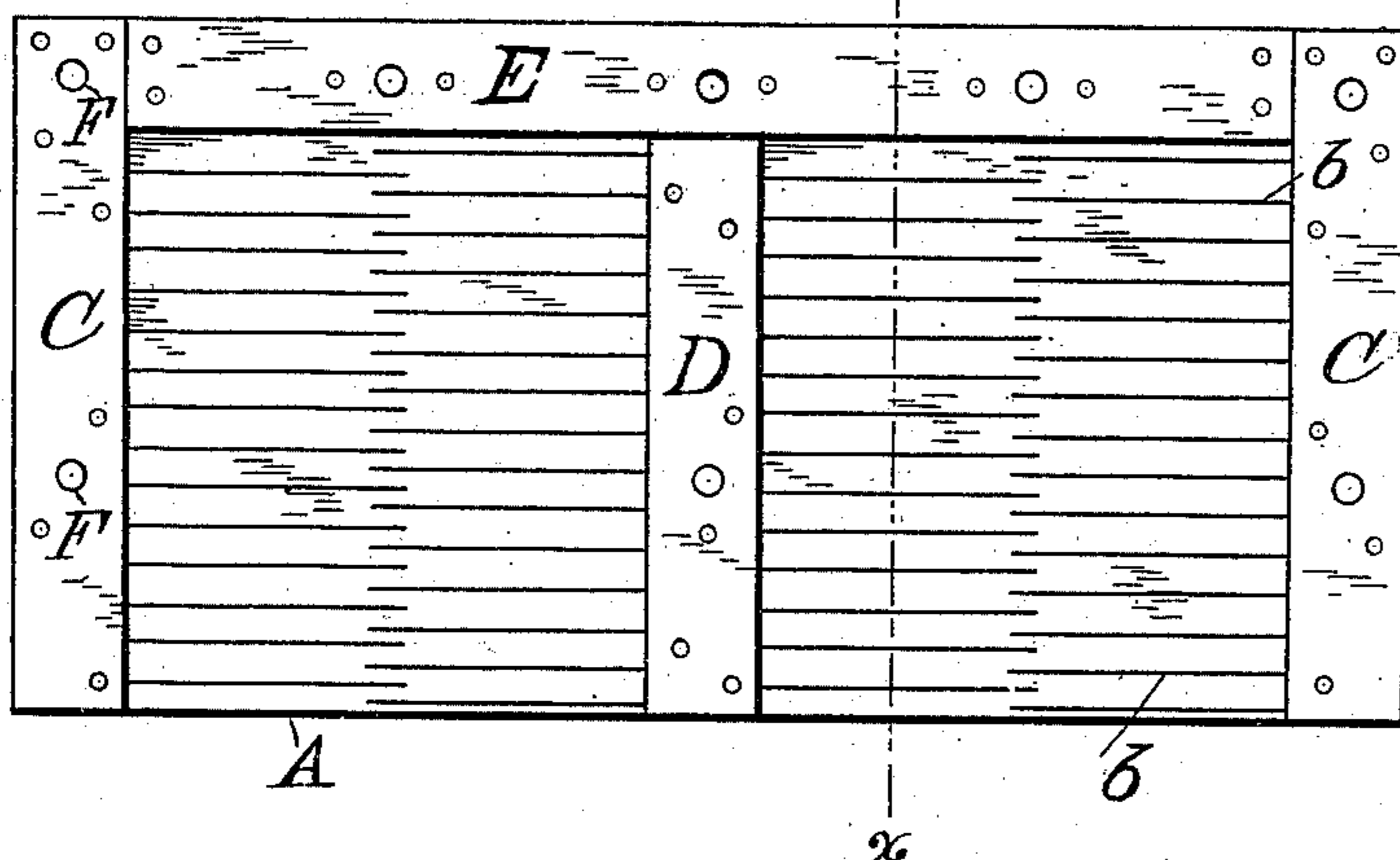
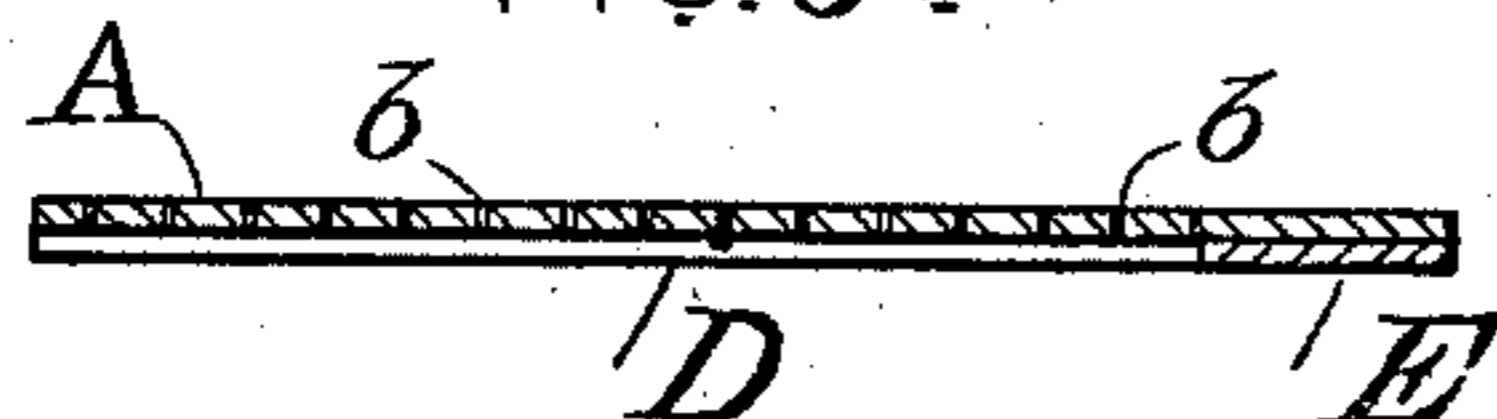


FIG. 3.



Witnesses:

Percy White,
J. L. Brown

Inventor:

Frank Williams.

By John I. Halsted & Son,
his Attys

UNITED STATES PATENT OFFICE.

FRANK WILLIAMS, OF NEWARK, NEW JERSEY.

SCREEN-PLATE OR PULP-STRAINER FOR PAPER-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 313,037, dated February 24, 1885.

Application filed December 16, 1884. (No model.)

To all whom it may concern:

Be it known that I, FRANK WILLIAMS, of Newark, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Screen-Plates or Pulp-Strainers for Paper-Making Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 of reference marked thereon, which form a part of this specification.

My invention is a further improvement on the screen-plates or pulp-strainers patented February 22, 1881, to Howard Judson, and numbered 238,126.

Preparatory to introducing the pulp to the paper-making machine, it is customary to strain it in order to separate from it any foreign or gritty particles which might impair the quality of the finished paper, and the screen plates or strainers are shaken or agitated, the better to effect this purpose, and this shaky motion is usually imparted by the power which drives the machine. In the Judson patent a specially-constructed plate was used, made of thin metal—say from a sixteenth ($\frac{1}{16}$) to an eighth ($\frac{1}{8}$) of an inch in thickness—and having therein delicate slits, the ends of which overlap, so as not too much to weaken the plate by making the slits too long. This construction has proved very efficient for the main purposes for which it was intended; but after long practice it is found that it is yet susceptible of improvement, to obviate certain liabilities to become damaged and less efficient from careless handling, or from being bent out of shape, or from being left about the mill or on the floor when removed from the machine.

While availing of all the advantages due to the Judson plates—viz., thin plates of uniform thickness, as distinguished from heavy castings arched or chambered on their under sides—I avoid the above stated and other objections by strengthening these plates by means of

riveting thereto metal re enforcing strips as will now be described.

Figure 1 shows a plan of a piece of one of my improved pulp-strainers; Fig. 2, a view of its under side, and Fig. 3 a cross-section through *x x*.

A is the plate proper, having (like the Judson patent) delicate slits *b* for straining the pulp, and which are preferably arranged, as in that patent, and a parallel series of short slits not extending all across, but with the inner ends of one row lapping the inner ends of the adjacent row, thus leaving a course of solid metal alternately cut into by the ends of these slits, while the combined adjacent slits are in practice equivalent to continuous long slits. C are re-enforcing or strengthening metal side pieces; D, a similar central one, and E one of the end pieces. All these are of a thickness about equal to that of the plate A, and they are severally firmly riveted to the plate, and they are so located thereon as not to cover or interfere with the strainer-slits, but jointly they give a rigidity to the thin plate sufficient to preserve it in its true form, and prevent its getting broken, warped, or bent out of true shape, and which warping or bending when it occurs renders the plate under ordinary usage gradually less and less efficient. My improved plate is also very durable.

F are screw-holes by which the plates are temporarily secured to a wooden frame when in use in the machine.

The strips C, D, and E may be of a character of metal of inferior grade and of less cost than that of which the strainer-plates are made.

I claim—

The pulp-strainer plates described, as made not only of thin metal having the described overlapping slits, but having also the strengthening-strips secured thereto, as and for the purposes set forth.

FRANK WILLIAMS.

Witnesses:

JOHN OTTO,
HENRY I. SIMONSON.