(Model.)

C. PINDER & W. A. HARDY.

Screen-Plate for Paper-Making Machines.

No. 226,545. **Patented April 13, 1880.**

Fig: 1.

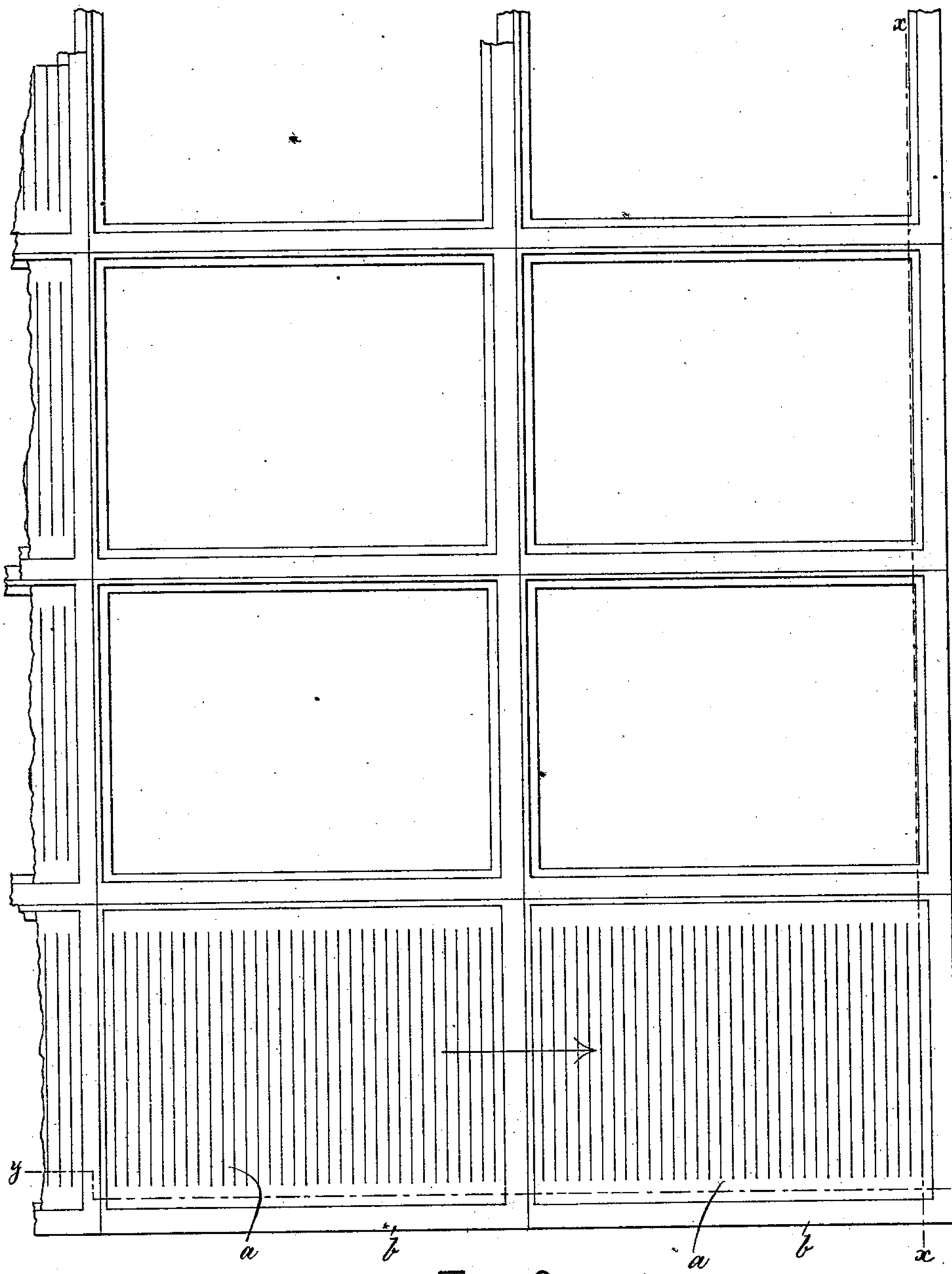

Fig: 2.

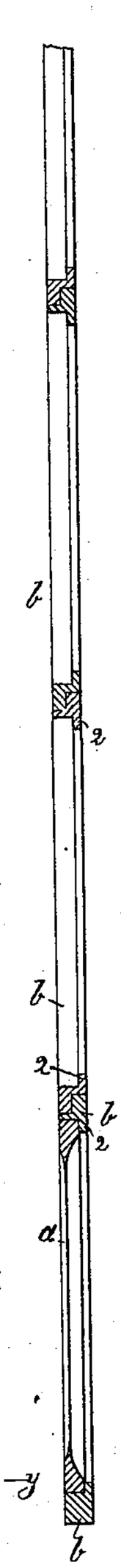

Fig: 3.

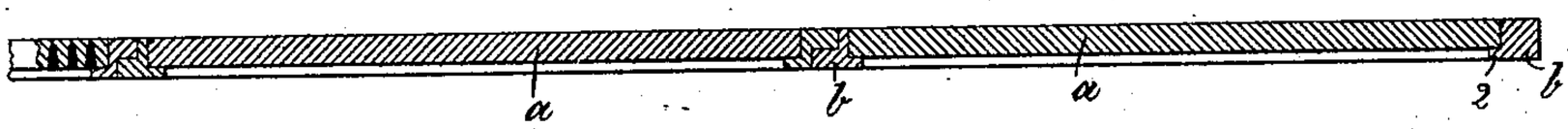

Fig: 4.

Witnesses.

L. F. Connor.

V. D Dearborn.

Inventors.

Charles Pinder, and William A. Hardy

by Crosby & Gregory Attys

UNITED STATES PATENT OFFICE.

CHARLES PINDER AND WILLIAM A. HARDY, OF FITCHBURG, MASS.

SCREEN-PLATE FOR PAPER-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 226,545, dated April 13, 1880.

Application filed March 15, 1880. (Model.)

To all whom it may concern:

Be it known that we, CHAS. PINDER and WILLIAM A. HARDY, of Fitchburg, county of Worcester, State of Massachusetts, have invented an Improvement in Screen-Plates for Paper-Making Machines, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to improvements in screen-plates for paper-making machinery, and has for its object such a construction of the said plate in sections, as hereinafter described, as will permit any part thereof which from any cause may become worn or unserviceable to be readily renewed without throwing away the whole plate, as is now the practice.

In the manufacture of paper the pulp is made to flow over a screen-plate composed of brass or composition metal, made as a plate or sheet substantially the size of the screen-plate, it frequently being one foot wide by three feet long. This plate at intervals is operated upon by a saw to produce a series of parallel slits very close together, these series of slits occurring in groups with portions of solid metal plate about them. In this old form of plate, if any of the slits in any series of rows become pitted or eaten out, so as to permit the passage through the slit at that point of a greater quantity of material flowing over the screen, the paper is injured and rendered uneven; so it becomes a matter of the greatest importance for good work that all the slits be perfectly true and uniform.

In the manufacture of such screens, if any slit of a series of slits by any accident or carelessness be imperfect, or if in use any slit or series of slits become unfit for use, it has been customary to remove the entire screen and consider it as old metal, which entails serious loss, for when said screen is changed many of the series of slits will be in perfect working condition.

We have by experiment in this direction discovered that the screen-plate, instead of being made in one piece, as heretofore, may be made sectional, or be cut up into numerous small sections, each of which is provided with a series of parallel slits, and in case of accident or imperfection in the slits of any series of slits we have only to remove the particular section or small plate in which the said imperfection appears, and instantly substitute for it a new section, and this very quickly, without disturbing the entire screen as heretofore, which causes loss in time, such, however, being but a small item as compared with the loss of the cost of the plates.

Figure 1 represents, in top view, a sufficient portion of a screen for paper-making machines to illustrate one practical embodiment of our invention, a portion of the said screen being broken away both at its side and rear; Fig. 2, a cross-section of Fig. 1 on the dotted line *x x;* Fig. 3, a longitudinal section on the line *y y;* and Fig. 4 is a modification to be referred to.

The screen, be it of greater or less length or width, as usual, is, in accordance with our invention, made up of sectional plates *a a*, of metal, each of which is, by saws or mills, provided with a series of parallel slits, as indicated at the left of Fig. 1, over which the pulp or material to be converted into paper travels in the direction of the arrow, Fig. 1. These sections *a* are herein shown as each sustained in a quadrangular section-holder, *b*, made as a frame, having within it a narrow shelf, 2, upon which the section *a* is supported, and each holder will preferably be provided at each side and end, unless it be an outside holder, with shoulders, to thus permit one holder to lap over the other, which construction enables us to bring the series of slits of each section more nearly together, thus reducing the area of the smooth or unslitted portion of the entire screen to the minimum.

By this our invention any section not perfect as to its slits may readily be removed, and a perfect section substituted for it at but small expense.

The method of forming the slits will not be different from the plan now practiced.

We have so far described the screen-plate sections as each supported in a holder; but we wish it to be understood that the holders may be omitted, though we prefer to use them.

In case the holders are omitted the small sections *a*, each having the single series of parallel slits, will be provided with a shoulder to permit one section to lap at its edge upon the edge of the next section, or we may say that the section *a* and the holder *b* may be as one piece of metal.

All screen-plates heretofore used, so far as

we are aware, have been made of a rolled metal largely composed of an alloy that is easily eaten by the acids or alkalies in the pulp.

In this our plan the screen being composed of small sections, as described, they can be cast and be composed of a more durable metal, or one which contains but little if any of alloy, which will be affected by the acid and alkali, as before stated, this metal so used by us being of such nature that it cannot be rolled into a plate.

Our sectional screen, made of a hard metal or composition which cannot be rolled out, as stated, when slitted, leaves at the edges of the slits square corners, which effectually resist the action of the acid or alkalies, thereby making the sections very durable and lasting.

We claim—

1. In a paper-making machine, a screen-plate composed of independent slitted sections, substantially as and for the purpose described.

2. The slitted section *a*, combined with the holder, shouldered, as described, to match with adjacent holders, substantially as and for the purpose described.

3. As an improved article of manufacture, a cast-metal slitted screen-plate section, substantially as and for the purpose described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

CHARLES PINDER.
WM. A. HARDY.

Witnesses:
F. A. CURRIER,
F. C. CURRIER.