

H. W. Hayner.
Papier Mache Slate Frame.

N^o 33,144.

Patented Aug. 27, 1861.

Fig. 2.

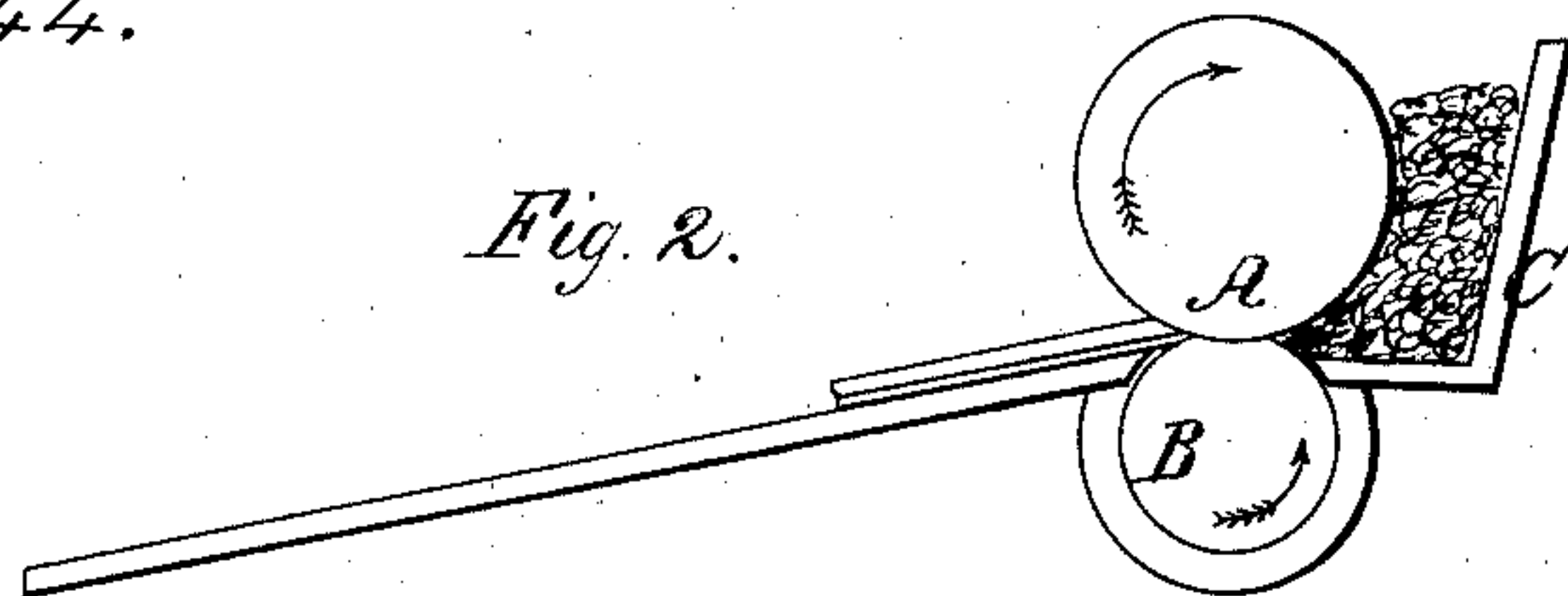


Fig. 3.

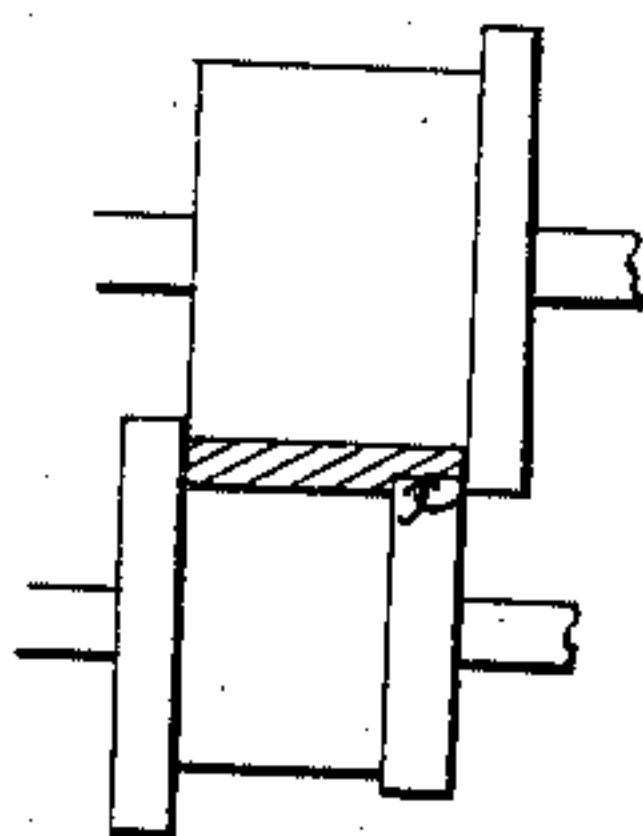


Fig. 6.

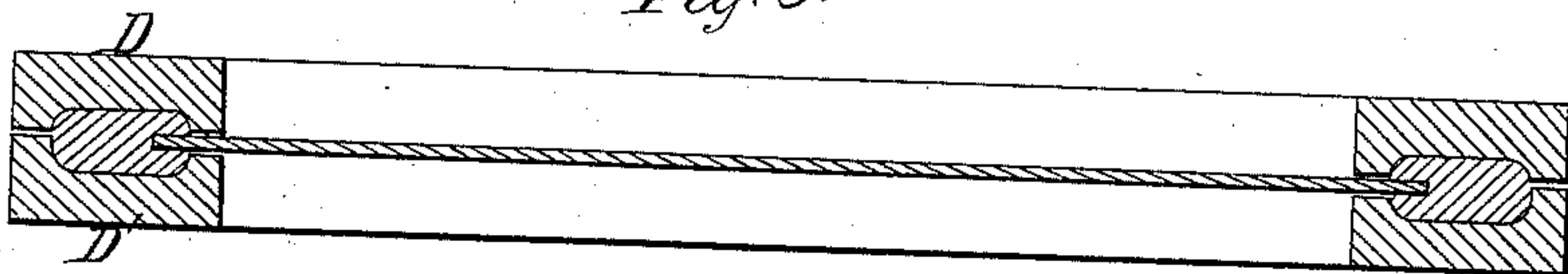


Fig. 5.

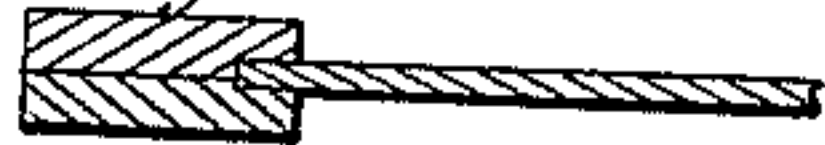


Fig. 4.

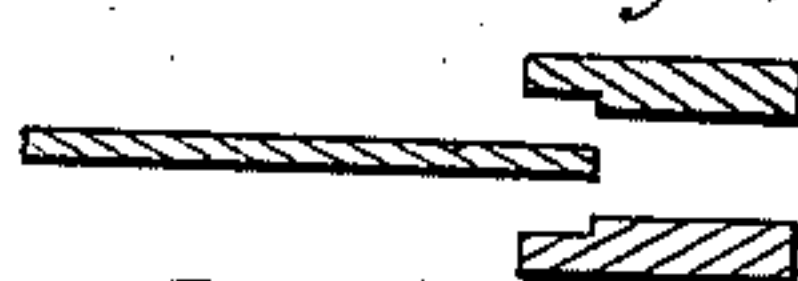
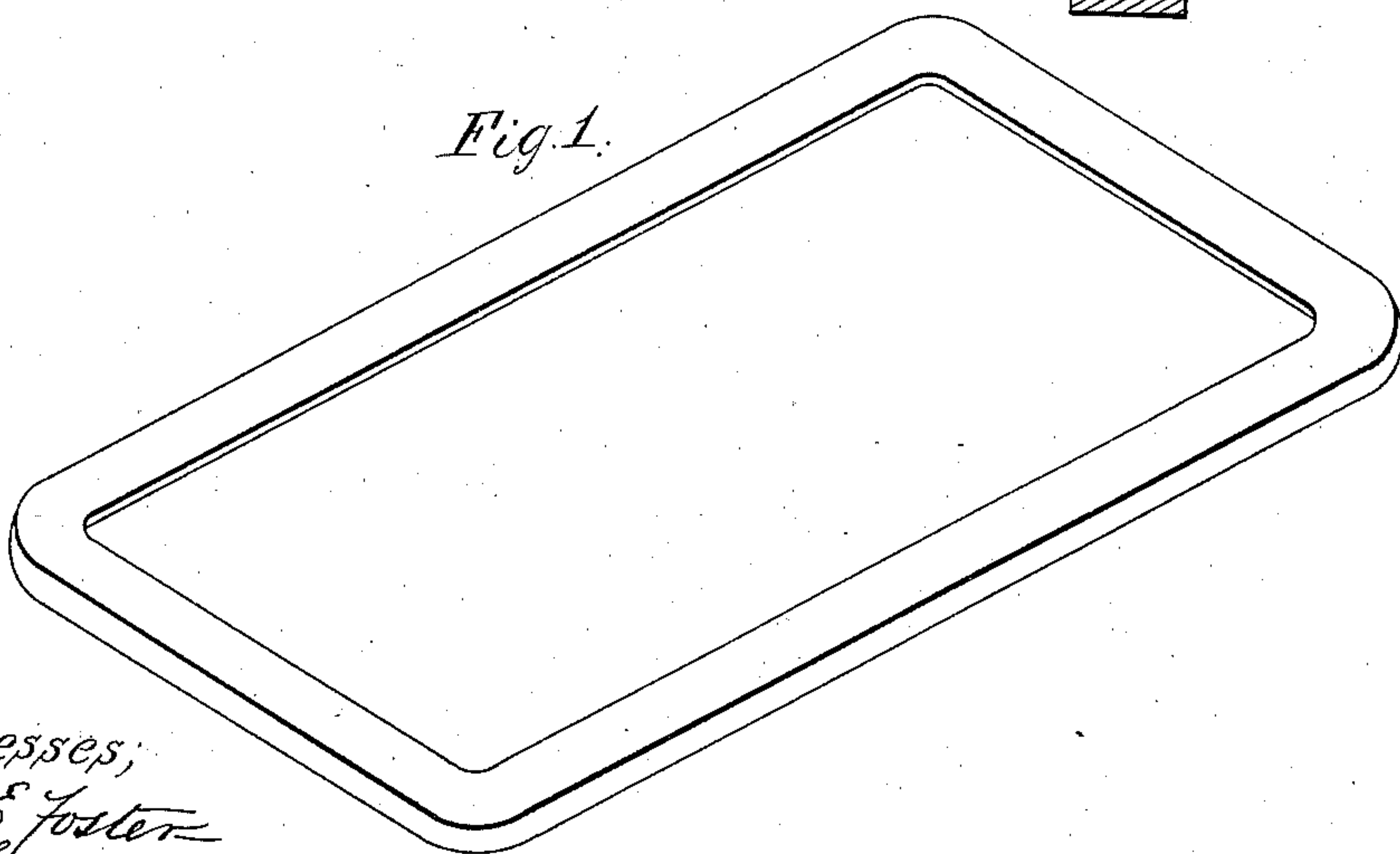


Fig. 1.



Witnesses,
Charles E. Foster
Charles Brown

UNITED STATES PATENT OFFICE.

HENRY W. HARPER, OF BERLINSVILLE, PENNSYLVANIA.

SLATE-FRAME.

Specification of Letters Patent No. 33,144, dated August 27, 1861.

To all whom it may concern:

Be it known that I, H. W. HARPER, of Berlinsville, Northampton county, Pennsylvania, have invented a new and Improved Slate-Frame; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My improved slate frame is composed of papier mâché or pulp composed of any fibrous material, mixed with size, reduced to a plastic state, and while in that state applied to and formed on the edges of the slate under pressure between dies.

In order to enable others to make my improved slate frame I will now proceed to describe the manner in which I manufacture the same.

On reference to the accompanying drawing which forms a part of this specification, Figure 1 is a perspective view of my improved slate frame, Figs. 2 and 3 diagrams illustrating the preparatory steps adopted in the manufacture of the frame, Figs. 4 and 5 diagrams illustrating the manner of adjusting the strips of plastic pulp to the slate, and Fig. 6 a sectional view of the frame showing the manner of binding it firmly to the slate.

The material of which my improved slate frame is composed is known as papier-mâché and consists of waste paper or paste board, ground and torn to a fine pulp, mixed with a solution of glue or other size and reduced to about the consistency of ordinary putty.

In preparing papier-mâché for the manufacture of various articles of utility and ornament, the paper pulp is occasionally mixed with pieces of old rope and other fibrous matter and is not unfrequently entirely composed of refuse fibrous material ground to a fine pulp and mixed with size.

Having reduced the pulpy matter to the desired plasticity I submit it to the action of two rollers A and B (shown in the diagrams Figs. 2 and 3) which are caused to revolve in the direction pointed out by the arrows, the rollers being of such a form that the pulp, deposited in a trough or other convenient receptacle C, on passing between the rollers will assume the sectional form represented in Fig. 3 namely a plain strip with a longitudinal recess α on one side and near one edge. A strip of sufficient length to pass around the slate being thus obtained, a sec-

ond strip of similar length is formed by means of the same roller, after which one strip is applied to the edge and on one side of the slate as seen in the diagrams Figs. 4 and 5, and then the other strip is applied to the edge and on the opposite side of the slate, the opposite ends of each strip meeting or slightly overlapping each other. It will be observed that the recessed portions only of the strips are in contact with the slate, and that the recesses of the two strips combined are in depth equal or thereabout to the thickness of the slate so that the other portion of the two strips, when the latter are adjusted to their proper position, will meet each other as seen in Fig. 5.

The strips having been lightly pressed together and to the slate they have to be still further bound together and to the slate at the same time condensed and reduced to the desired form. This is accomplished by pressure between the dies D and D' (Fig. 4) the upper die having a recess corresponding with the desired shape of the upper portion of the frame, and the lower die having a corresponding recess for forming the opposite side of the frame, and both recesses being so formed as to impart the desired shape to the frame's inner and outer edges.

The strips with the edges of the slate between them being adjusted to their proper position between the dies the latter are submitted to such a pressure in an ordinary screw or other suitable press that the plastic pulp will be condensed to the desired solidity and at the same time bound tightly to the slate, the ends of the strips which were previously in contact with or overlapped each other, as well as the two strips themselves being united in one compact mass. The frame is then removed from the dies and allowed to dry, or it may be dried in an oven of moderate temperature so as to become hard and tough, and so thoroughly united to the slate as to form part of the same. The frames may be ornamented by painting or japanning when dry, or any desired color may be introduced into the pulp during the preparation of the latter or after it has been reduced to the desired plasticity, or the frames may be highly ornamented by embossing without any additional expense other than that required in cutting the required figures in the dies.

In order to render the frame more tenacious I, in some instances, introduce a piece

or pieces of ordinary string or twine, or
fibers of hemp &c. into the strips as the lat-
ter are being formed between the rollers A
and B these fibers being of course embedded
5 in the plastic pulp.

Although for the information of others I
have described a process whereby I have in
practice accomplished the preparatory steps
in the manufacture of the frames I wish it
10 to be understood that I do not desire to con-
fine myself to that particular or to any other
preparatory process; but

I claim as my invention and desire to se-
cure by Letters Patent.

A slate frame composed of papier-mâché 15
or pulp composed of any fibrous material
mixed with size, reduced to a plastic state
and while in that state applied to and
formed on the edges of the slate under pres-
sure between dies as set forth. 20

In testimony whereof, I have signed my
name to this specification, in the presence of
two subscribing witnesses.

HENRY W. HARPER.

Witnesses:

CHAS. HOWSON,
HENRY HOWSON.