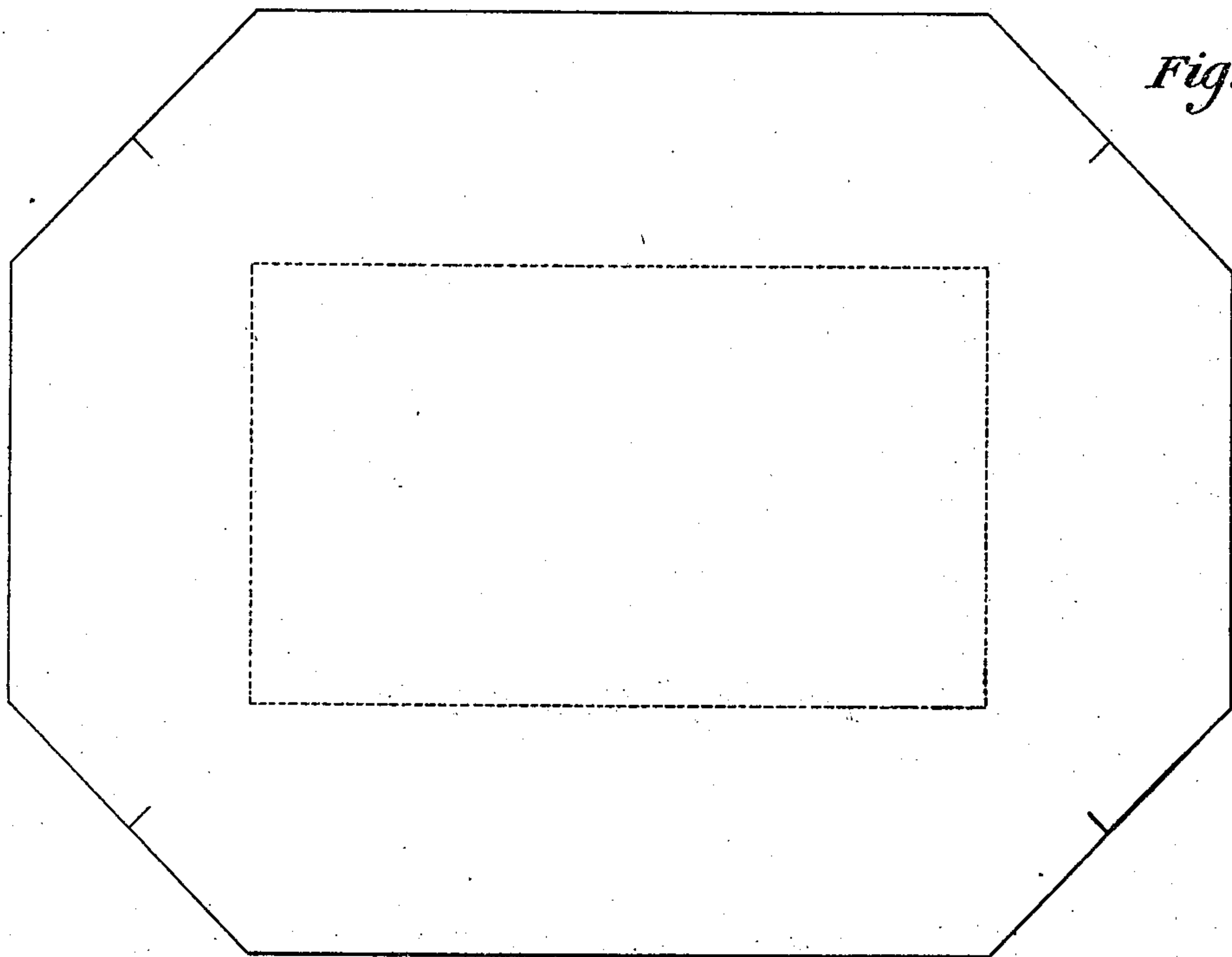


(No Model.)

H. E. SHELDON.  
SLATE.

No. 551,005.

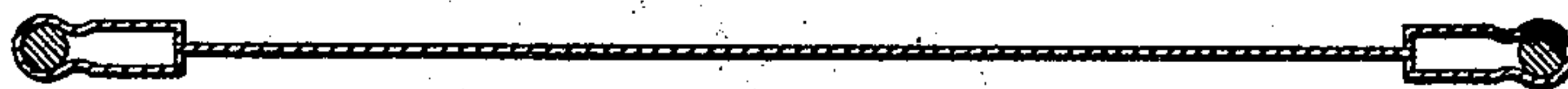
Patented Dec. 10, 1895.



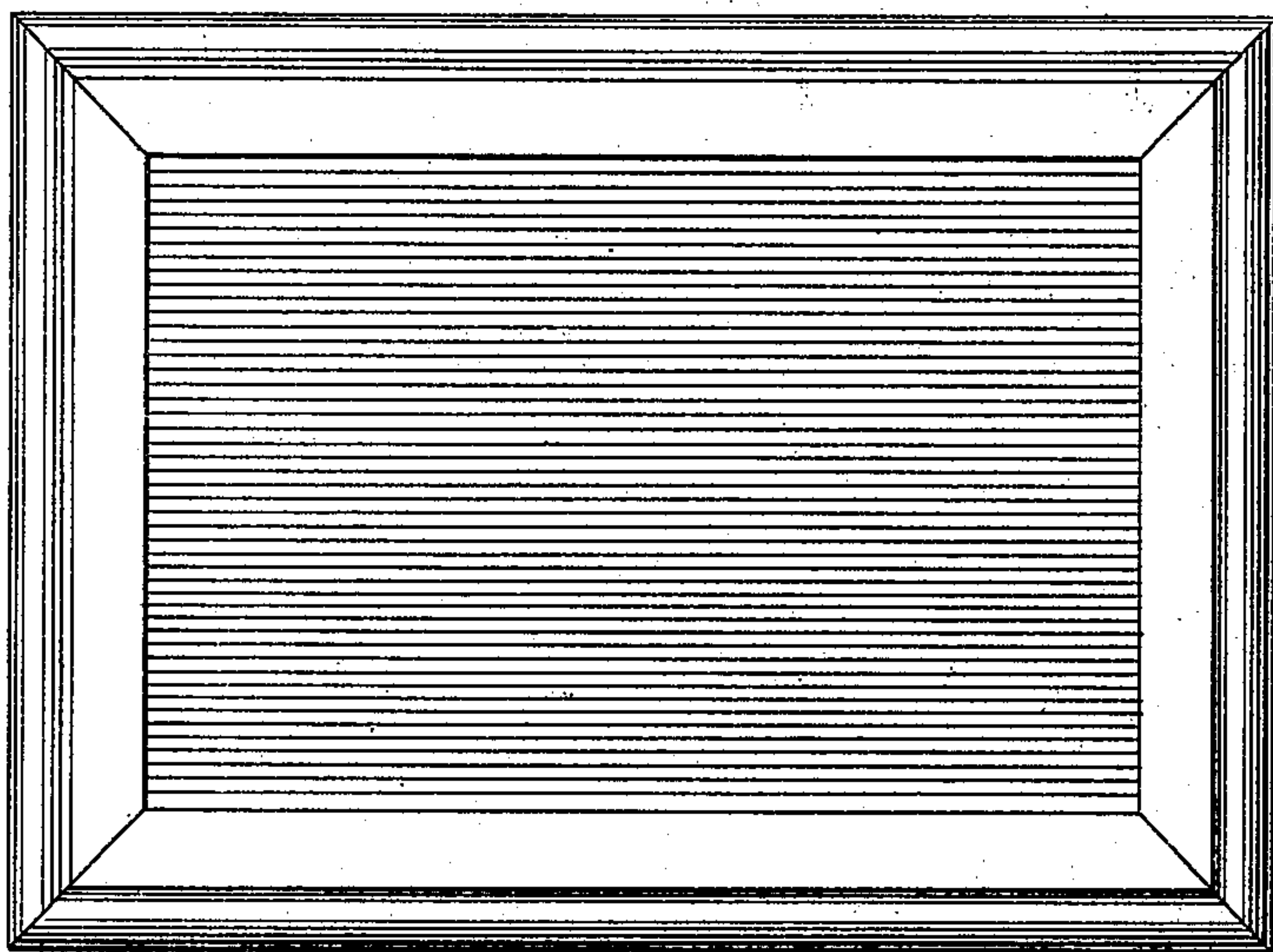
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*

WITNESSES

INVENTOR

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# UNITED STATES PATENT OFFICE.

HENRY E. SHELDON, OF LEECHBURG, PENNSYLVANIA.

## SLATE.

SPECIFICATION forming part of Letters Patent No. 551,005, dated December 10, 1895.

Application filed February 18, 1895. Serial No. 538,887. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY E. SHELDON, a citizen of the United States, residing at Leechburg, in the county of Armstrong and State of Pennsylvania, have invented a certain new and useful Improvement in Slates, of which the following is a full, clear, and exact description.

My invention relates to providing an improved substitute for the ordinary school or counting-house slate, which shall be durable, inexpensive, and efficient.

My invention consists substantially in substituting for the plate of slate-stone heretofore used a similar-sized piece of sheet metal with its surface especially prepared, as hereinafter described; and I hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to use the same.

Figure 1 is a view of the piece of metal used with its corners *b b b b* so clipped off as to allow of sides and ends folding over the margin of the plane surface *A*. Fig. 2 is a sectional view of the plate or sheet so bent at *c c* and *d d* by stamping as to give the elevation of the marginal rim after turning edges and ends over shown in the sectional view, Fig. 3. In Fig. 3 *e e* show sections of the stiffening-wire over which edges and ends are bent. Fig. 4 shows the elevated rim *f f f f*, inclosing or surrounding the plane writing-surface *A*.

To carry my invention into effect I begin with rectangular sheets of metal, preferably sheet-iron or mild sheet-steel, of whatever size is desired and No. 23 or 24 wire gage in thickness, more or less, and by preference clean the surface as it has come from the rolls from all adhering oxide of iron or scale by the well-understood method of pickling in dilute sulphuric acid, which I usually follow with ordinary annealing in sealed boxes, as practiced at rolling-mills. The sheets are now ready for the operation of cutting out corners in suitable form, embossing, and folding over sides and ends in such manner as to give a rim along the sides and ends, similar in purpose and form to the wooden frame of the common

slate, by the use of the mechanical press with dies and allied apparatus, such as are in common use by sheet-metal workers. The sheet is now ready for the special preparation which gives it similar qualities to slate-stone for the purpose in view. This may be accomplished more or less perfectly in different ways—as, *e.g.*, by coating with a paint or enamel containing a small quantity of some finely-subdivided abrading material, such as finely-ground emery, and fixing the same on the sheet by drying or baking at a moderate heat—but the method which I prefer and believe to be best is to inclose the sheets after being turned over at sides and ends in a closed chamber—to wit, the ordinary annealing-box of the rolling-mills—and introduce through a small perforation in the side of the box a current of dry steam, such as would be conveyed at a pressure of fifty or sixty pounds per square inch through an opening one-eighth of an inch in diameter, then raising the temperature of box contents to a low red heat and maintaining them at this temperature for a period of about six hours, and then cooling and withdrawing the charge, as in ordinary annealing, by removing the box from its bed-plate when the charge is cooled. The surface so prepared is found to be of a very dark gray or stone color and has an excellent capacity of receiving marks from a slate-pencil, with ease of complete erasure, is not liable to fracture, and does not rust or corrode from exposure to the air or moisture. The oxide of iron with which the sheet is now coated is the magnetic oxide whose protecting power against rust of the metal is well understood, and I do not claim the production of this oxide covering as new, except for the purpose described.

In cutting out the corners for the purpose of allowing sides and ends of the sheet to fold over I do it in the form shown in Fig. 1, as shown in the annexed drawings.

Fig. 2 shows a section of the sheet after the first stamp has acted on the rim, and Fig. 3 shows a section of the completed article with rim folded over a stiffening-wire. Fig. 4 is a face view of the completed article.



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

5 As a new and useful article of manufacture, a substitute for the common school slate, consisting of a rectangular or other suitably shaped piece of sheet metal, provided with a writing surface composed of magnetic oxide

of iron, the said sheet having its edges and ends turned over, so as to afford the same protection to its plane surface, as is afforded by the wooden frame of the common slate.

HENRY E. SHELDON.

Witnesses:

ISAAC E. CRAIG,

JOHN W. KIRKPATRICK.