(No Model.) 3 Sheets—Sheet 1.

T. W. BURGER.

ORNAMENTING SHEET METAL.

No. 363,205. Patented May 17, 1887.

Fig. 1.

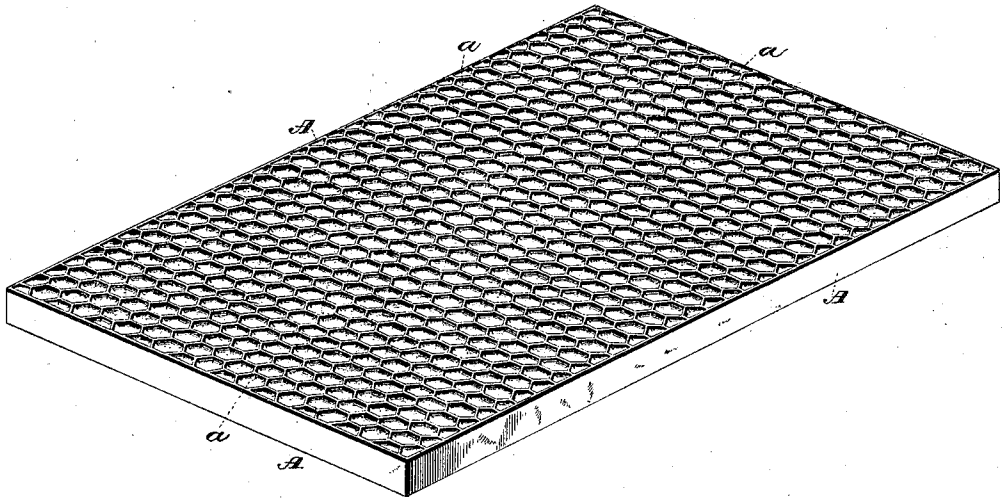
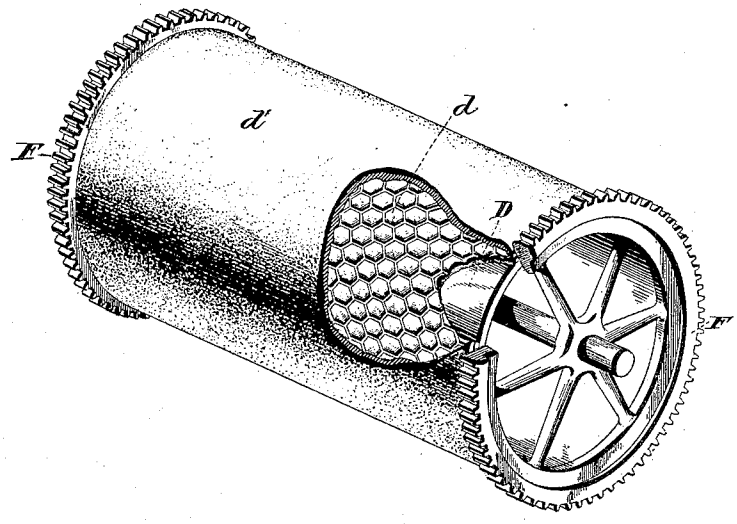


Fig. 2.



Witnesses:
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Henry C. Hazard.

Inventor:
Theodore W. Burger, by
Prindle and Russell, his Attys.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 2.

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ORNAMENTING SHEET METAL.

No. 363,205. Patented May 17, 1887.

Fig. 3.

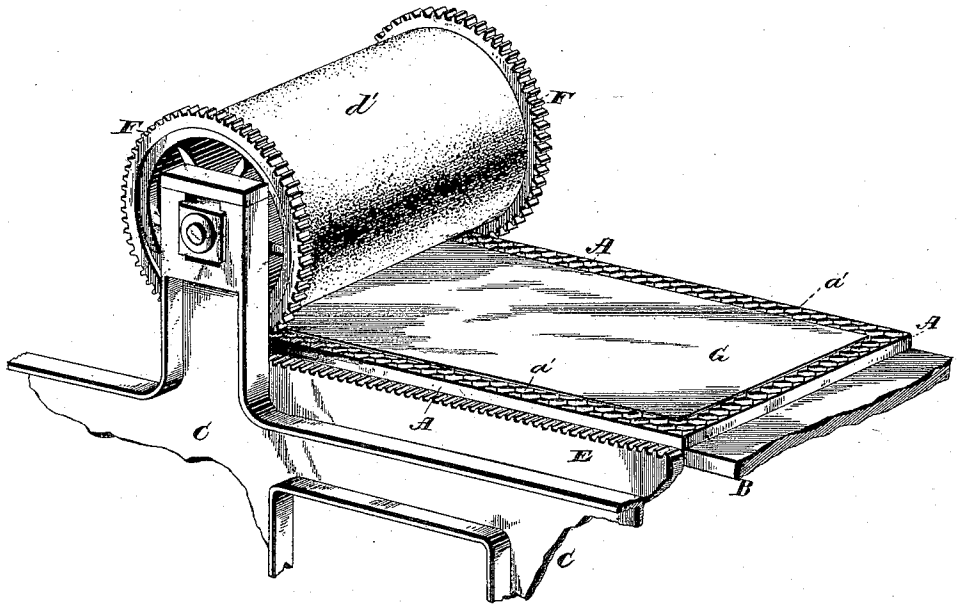
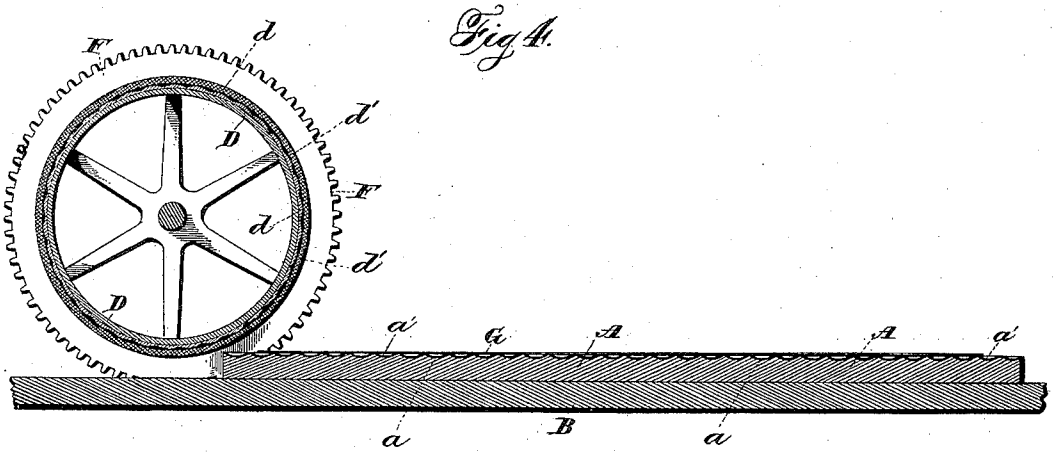


Fig 4.



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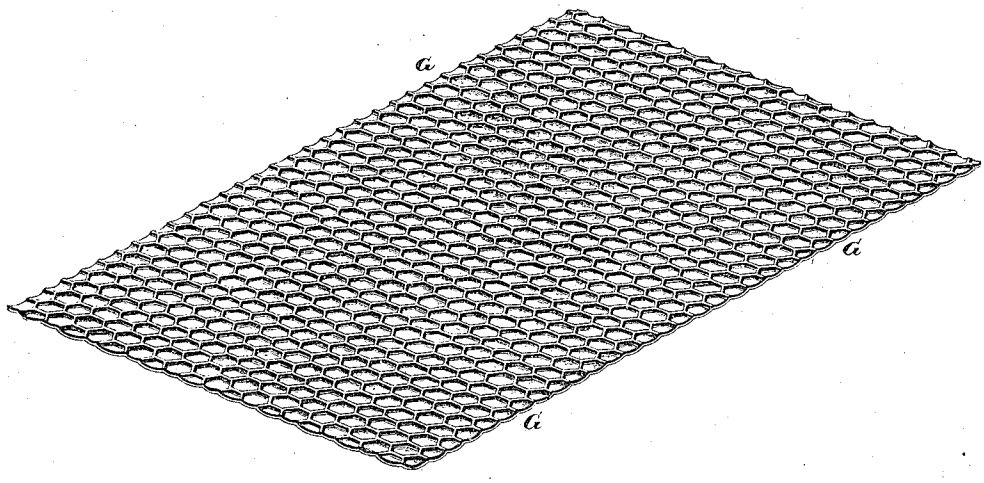
(No Model.) 3 Sheets—Sheet 3.

T. W. BURGER.

ORNAMENTING SHEET METAL.

No. 363,205. Patented May 17, 1887.

Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

THEO. W. BURGER, OF NEW YORK, N. Y.

ORNAMENTING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 363,205, dated May 17, 1887.

Application filed December 29, 1886. Serial No. 222,952. (No model.)

To all whom it may concern:

Be it known that I, THEO. W. BURGER, of New York, in the county of New York, and in the State of New York, have invented certain new and useful Improvements in Ornamenting Sheet Metal; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of a stone slab prepared for use in the ornamentation of sheet metal. Fig. 2 is a like view of the roller employed with said slab, a portion of the rubber outer covering being removed to show the inner paper covering. Fig. 3 is a perspective view of the press in which said roller and stone are employed, showing a sheet of metal in position for their action. Fig. 4 is a vertical section of the same upon a line passing longitudinally through the center of the bed of the press, and Fig. 5 is a perspective view of a sheet of metal after having been operated upon by said press.

Letters of like name and kind refer to like parts in each of the figures.

In the manipulation of sheet metal so as to give to its faces the appearance of having been "hammered" it has heretofore been customary to employ steel rollers which had formed within or upon their faces coinciding depressions and elevations, and were geared together so as to cause their peripheries to have rolling contact, when by passing a sheet of metal between such rollers the configuration of the latter would be transferred to and reproduced upon said sheet. This method of ornamentation has, however, been open to many serious objections, among which the most important has been the cost, as the configuration of the faces of the steel rollers required to be cut, and involved a large outlay for labor as well as for material.

The object of my invention is to enable the ornamentation of sheet metal to be easily, quickly, and cheaply done, to which end said invention consists, principally, in the methods employed for ornamenting sheet metal, substantially as and for the purpose hereinafter specified.

It consists, further, in the mechanism used in the ornamentation of sheet metal, substantially as and for the purpose hereinafter shown.

In the carrying of my invention into practice I place the desired design upon the surface of a plate, A, preferably stone, and by means of acid etch in such design in the usual way so as to produce upon and within the face of the plate a fac-simile of the configuration which it is desired to give to the sheets of metal. In the drawings the etched surfaces shown are such as are known as "hammered," and the concave side of each hammer-mark *a* is formed within the plate.

The etched plate A is placed upon a horizontal table or bed, B, which is adapted to slide longitudinally upon the ways or bearings of a frame, C, and at a suitable point upon said frame is journaled a metal roller, D, that is arranged to have peripheral contact with the face of said plate as said bed is reciprocated beneath the roller. In order that the surfaces of said roller and etched plate may maintain their relative positions and have a rolling contact a toothed rack-bar, E, is attached to each side of said bed B and engages with a toothed wheel, F, that is secured to the corresponding end of said roller.

Upon the periphery of the roller D is secured a covering of thick, tough paper, *d*, and over the same is secured a covering of rubber cloth, *d'*, ordinarily termed a "blanket." For the purpose of preventing wear of the etched surface of the stone A, said surface is covered with a sheet of strong Manila paper, *a'*, or other suitable material, and the same secured in place by paste or other adhesive substance.

After the etched plate and cylinder have been covered, as described, their surfaces are rolled together several times under heavy pressure, so as to cause the paper coverings to be pressed into the face of said plate and made to assume the shape of the same, after which, if a sheet of metal, G, is placed upon said plate and moved with the same forward and back beneath said roller the upper face of said metal sheet will be given the exact shape of the etched design, while its lower face will be the reverse of such design.

It will be obvious that any design desired other than that shown may be etched upon

the plate and then given to sheets of metal without departure from the spirit of my invention, and that after a design has been laid upon the plate the etching in of such design will cost no more in case of the most intricate and elaborate pattern than when the most simple is used, and that my mechanism as constructed costs but a fraction of the amount required for the construction of engraved steel rollers.

Having thus described my invention, what I claim as new is—

1. The method employed for producing surfaces for the ornamentation of sheet metal, which consists in etching a design into the face of a plate and then cementing paper upon such etched surface, and by pressure causing it to conform to and fit within the etching, substantially as and for the purpose specified.

2. The method employed for producing surfaces for the ornamentation of sheet metal, which consists in etching the required design within the face of a plate, and then moving such plate back and forth beneath a paper-covered pressure-roller until the design is impressed upon the paper covering and the periphery of said roller is the reverse of the face of said plate, substantially as and for the purpose shown.

3. The method employed for producing surfaces for the ornamentation of sheet metal, which consists in etching the required design within the face of a plate and then moving such plate back and forth beneath a pressure-roller that is covered peripherally with paper until the design is impressed thereon, and then covering the paper with rubber or other equivalent elastic material, substantially as and for the purpose shown.

4. As an improvement in mechanism for ornamenting sheet metal, a plate having a design etched into its face, and such etched face covered with paper, which is pressed into and caused to conform to the configuration thereof, substantially as and for the purpose shown and described.

5. As an improvement in mechanism for ornamenting sheet metal, a plate provided within or upon its face with an etched design, in combination with a pressure-roller which has its periphery covered with paper, within which is impressed the design, and the paper then covered with rubber or an equivalent elastic material, substantially as and for the purpose specified.

6. As an improvement in mechanism for ornamenting sheet metal, a plate which has a design etched within its face, and such etched face covered with paper, which is pressed into and caused to conform to such design, in combination with a pressure-roller that is covered peripherally with an elastic material, substantially as and for the purpose shown.

7. As an improvement in mechanism for ornamenting sheet metal, a plate which has a design etched within its face, and such etched face covered with paper, which is pressed into and caused to conform to the same, in combination with a pressure-roller that is covered peripherally with paper and then with rubber or an equivalent elastic material, substantially as and for the purpose shown.

8. As an improvement in mechanism for ornamenting sheet metal, a plate which has a design etched within its face, in combination with a horizontally-reciprocable bed or table and a journaled pressure-roller that has formed upon or within its periphery the reverse of such design and is adapted to have a rolling contact with the etched face of said plate as the latter moves with said bed beneath said roller, substantially as and for the purpose shown and described.

9. As an improvement in mechanism for ornamenting sheet metal, an organization in which is combined a plate that has a design etched within its face, a supporting-bed which is adapted to reciprocate longitudinally upon ways, and a pressure-roller that is journaled above and positively connected with the bed, has formed upon and within its periphery the reverse of such design, and is adapted to have a peripheral rolling contact with the etched face of said stone as the latter moves back and forth with said bed, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of December, 1886.

THEO. W. BURGER.

Witnesses:
HENRY A. LEE,
GEO. A. SMITH.