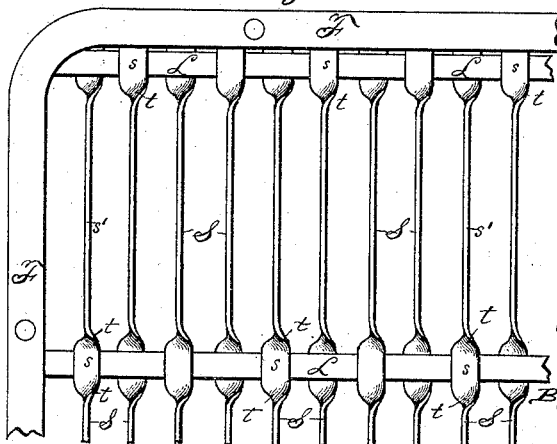
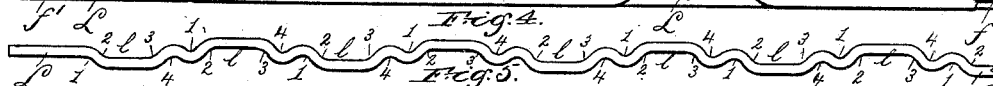
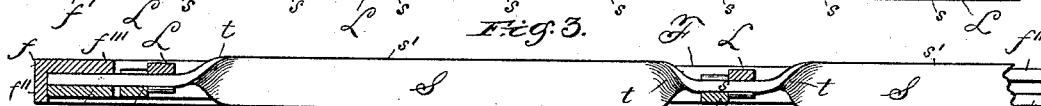
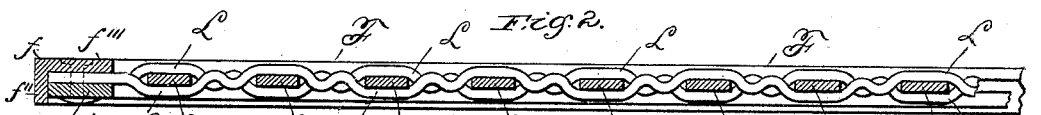
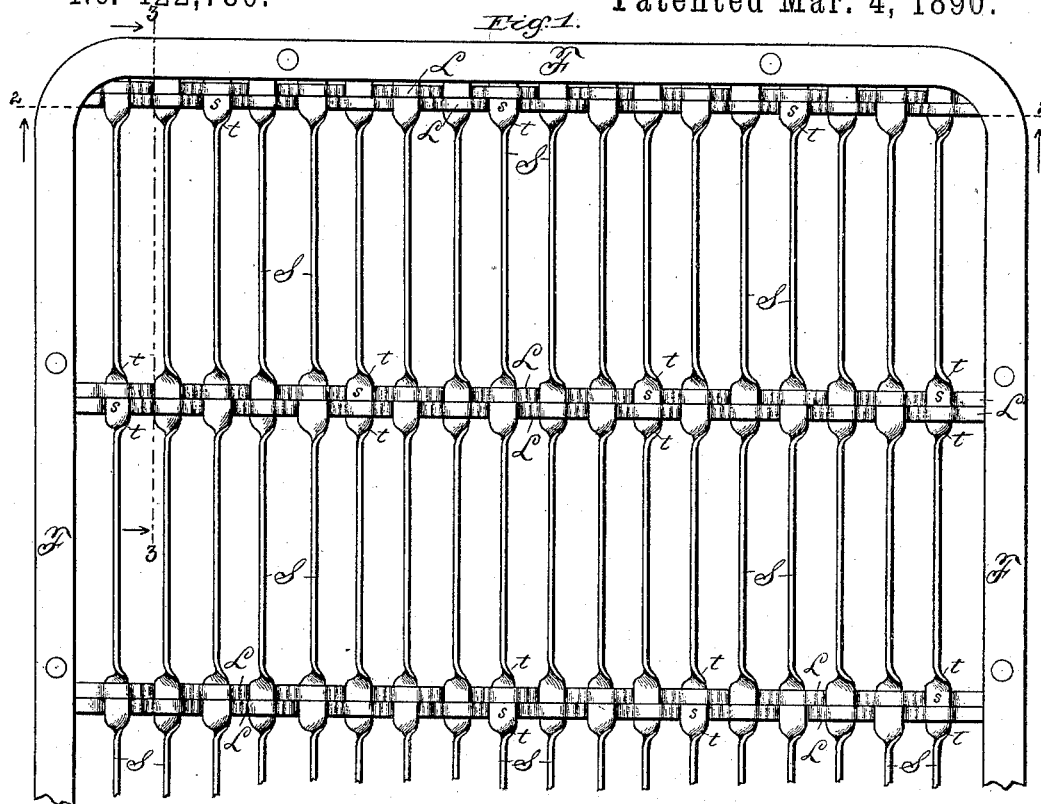


(No Model.)

M. H. HICKEY & W. R. REMME.
METALLIC DOOR MAT.

No. 422,780.

Patented Mar. 4, 1890.



Witnesses.
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UNITED STATES PATENT OFFICE.

MICHAEL H. HICKEY AND WILLIAM R. REMME, OF CHICAGO, ILLINOIS.

METALLIC DOOR-MAT.

SPECIFICATION forming part of Letters Patent No. 422,780, dated March 4, 1890.

Application filed November 8, 1889. Serial No. 329,612. (No model.)

To all whom it may concern:

Be it known that we, MICHAEL H. HICKEY and WILLIAM R. REMME, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Metallic Door-Mats, of which the following is a specification.

The invention consists in certain features of novelty that are particularly pointed out in the claims hereinafter, a mat embodying said invention being first fully described with reference to the accompanying drawings, in which—

Figure 1 is a plan view of one end of said mat. Fig. 2 is a transverse section thereof on the line 2 2, Fig. 1. Fig. 3 is a longitudinal section thereof on the line 3 3, Fig. 1. Fig. 4 is an edge view of one of the lock-strips. Fig. 5 is a plan view of a fragment of a mat embodying the invention under a slight modification.

In Figs. 1 and 5 the scale is one-half, while in the remaining figures the parts are drawn full size.

The improved mat consists of a number of parallel scraping-strips S, a number of parallel locking-strips L, running at right angles to the scraping-strips, and a binding-frame F, each having certain features of novelty, presently described. The scraping-strips S are of steel, about three thirty-seconds of an inch thick and three-eighths of an inch wide. The number of such strips employed and their length depend upon the width and length, respectively, of the mat to be made. At intervals of, say, from four to five inches portions *s* of each of the strips S are made to lie in a plane that crosses the main portions *s'* of said strip centrally and at right angles. This is done by twisting the portions *s* upon the axis of the blank ninety degrees from the plane of said blank, leaving the portions *s* and *s'* united by quarter-twists. Any desired number of scraping-strips thus formed are by means presently described secured together side by side with their main or scraping portions *s'* vertical, parallel, and about three-fourths of an inch apart, the corresponding portions *s'* of all the strips falling in lines running athwart their length. This of course brings corresponding portions *s* of all the strips similarly in line and

all in the same horizontal plane. The portions *s* and *s'* will hereinafter be distinguished by "horizontal" and "vertical," respectively, as they occupy these positions in the mat when completed.

To secure the scraping-strips S in the above-described relations to each other is the office of the lock-strips L, which may be either of stout wire or of narrow flat strips of iron or steel, the latter being preferred. Each of these strips has as many depressions *l* as there are strips S. The depressions correspond (approximately) in shape with the cross-section of the strips S and are situated at the same distances apart as are the corresponding portions *s* of adjacent strips S. The depressions receive the horizontal portions of the scraping-strips and effectually secure them against lateral movement. The depressions are formed alternately in opposite sides of the strips L, so that said strips may be interwoven with the strips S, (over one and under the next, and so on,) and still interlock with them, as shown. The strips L are also so placed with respect to each other that the depressions *l* falling in the line of any one strip S will be presented alternately in opposite directions, so that the strips S may be interwoven with said strips L, over one, under the next, and so on. In other words, the first strip L may pass over the first and under the second strip S, over the third and under the fourth, and so on, while the second strip L under the first and over the second strip S, under the third and over the fourth, and so on, the third strip L being arranged like the first, the fourth like the second, and so on. The term "interwoven" is hereinafter employed to designate this arrangement or its equivalent. The depressions *l* should be of such depth that their ends will constitute shoulders of sufficient height to insure the proper fulfillment of their office. Each of these depressions is formed by four bends in the blank.

To form the first depression, near its end the blank is bent abruptly at 1 and again at 2, the second bend being in a direction opposite the first at such distance therefrom as will form a shoulder of the height desired for the end of the depression. The third bend 3 is in the same direction as the second and the distance between them is that of the de-

sired length of the depression. The fourth bend is in a direction opposite to the third, the distance between them being such as will form a shoulder of the height desired for the end of the depression. From this bend the blank passes to the required position for the first bend 1 of the next series of four, which produce the next depression. The bends 2 and 3 form the depression proper, while the bends 4 and 1 determine the depth of such depressions, and enable the successive depressions to be offset to any desired extent with relation to each other by giving to the metal between them the desired angle in passing from one to another.

The frame F consists of a strip of angle-iron *f*, bent to the desired rectangular shape and having its extremities united by welding, and a correspondingly bent and united strip *f'* of rectangular cross-section. The part *f'* is sufficiently smaller in external dimensions than the vertical flange *f''* of the part *f* to fit within it, as shown. The outer vertical flange *f''* of the angle-iron *f* is but three-eighths of an inch wide, while the top horizontal flange *f'''* is five-eighths of an inch wide. The flange *f''* is made narrow (just the width of the scraping-strips) in order that the mat shall not be so high as to prevent a door from swinging over it. The ends of all the strips (both L and S) are straight and occupy the same horizontal plane. They are all received between the parts *f* and *f'* of the frame, and said parts are firmly secured together by countersunk rivets. In Fig. 5 but one broad locking-strip L crosses each strip S at each of its horizontal portions *s*, while in the preceding figures two narrow strips (or wires) cross it on opposite sides, said strips L being themselves crossed between the adjacent strips S. The mat thus completed is galvanized. The galvanizing metal enters the spaces between the strips where they cross and effectually secures them together.

Having thus described our invention, the following is what we claim as new and desire to secure by Letters Patent:

1. As a new article of manufacture, a metallic door-mat having in combination the scraping-strips S, having the alternate horizontal and vertical portions *s* and *s'* and arranged side by side with corresponding portions in lines athwart the mat, the lock-strips L, crossing the strips S at the horizontal portions *s* and having the depressions *l* into which said horizontal portions fit, and the frame F, substantially as set forth.

2. As a new article of manufacture, a door-mat having in combination the scraping-strips S, having alternate horizontal and vertical portions *s* and *s'* and arranged side by side with corresponding portions in lines athwart the mat, the lock-strips L, interwoven with the scraping-strips S, crossing them at the horizontal portions *s* and having the depressions *l* formed alternately in opposite sides and receiving the portions *s* of the scraping-

strips, and the frame F, substantially as set forth.

3. As a new article of manufacture, a door-mat having in combination the scraping-strips S, having alternate horizontal and vertical portions *s* and *s'* and arranged side by side with corresponding portions in lines athwart the mat, the locking-strips L interwoven with the scraping-strips, two of said locking-strips crossing each scraping-strip at each of its horizontal portions *s*, said locking-strips being themselves crossed between the adjacent scraping-strips and the frame F, substantially as set forth.

4. As a new article of manufacture, a door-mat having in combination the scraping-strips S, having alternate horizontal and vertical portions *s* and *s'* and arranged side by side with corresponding parts in lines athwart the mat, the lock-strips L, interwoven with the scraping-strips, two of said lock-strips crossing each scraping-strip at each of its horizontal portions *s*, said lock-strips being themselves crossed between adjacent scraping-strips and having the depressions *l* formed alternately in their opposite sides and receiving the horizontal portions *s*, and the frame F, substantially as set forth.

5. As a new article of manufacture, a door-mat having in combination the scraping-strips S, having alternate horizontal and vertical portions *s* and *s'* and arranged side by side with corresponding portions in lines athwart the mat, the lock-strips L, crossing the scraping-strips and having the bends 1 2 3 4, forming depressions *l*, in which the horizontal portions *s* of the scraping-strips fit, and the frame F, substantially as set forth.

6. As a new article of manufacture, a mat having in combination the scraping-strips S, having alternate horizontal and vertical portions *s* and *s'*, the lock-strips L, crossing and interwoven with the scraping-strips S and having the bends 1 2 3 4, the first and second being in opposite directions, the second and third in the same direction, the third and fourth in opposite directions, and the fourth and first of the next series in opposite directions, forming depressions *l* alternately in opposite sides of the strip, in which the horizontal portions *s* of the scraping-strips fit, and the frame F, substantially as set forth.

7. As a new article of manufacture, a door-mat having in combination the interwoven scraping-strips S and the lock-strips L, having straight flat ends, and a frame formed of the angle-iron *f* and the strip *f'*, between which the ends of said strips L and S project, said angle-iron having the narrow vertical flange *f''* and the broad horizontal flange *f'''*, substantially as set forth.

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