

R. Montgomery.
Iron Pavement.

N^o 22,444.

Patented Dec. 28, 1868.

Fig. 7.

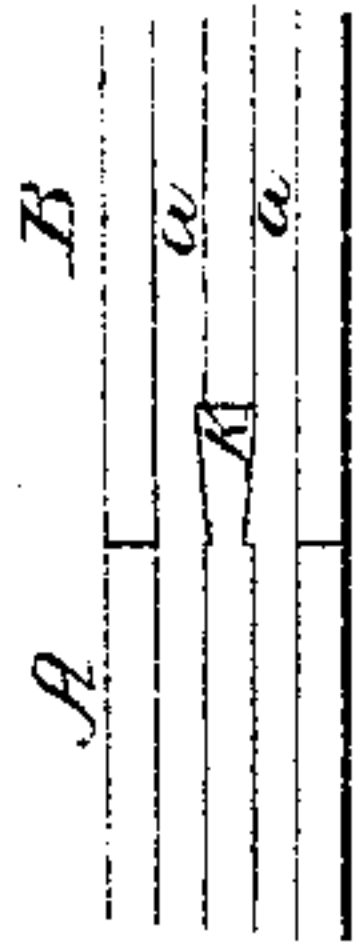


Fig. 5.

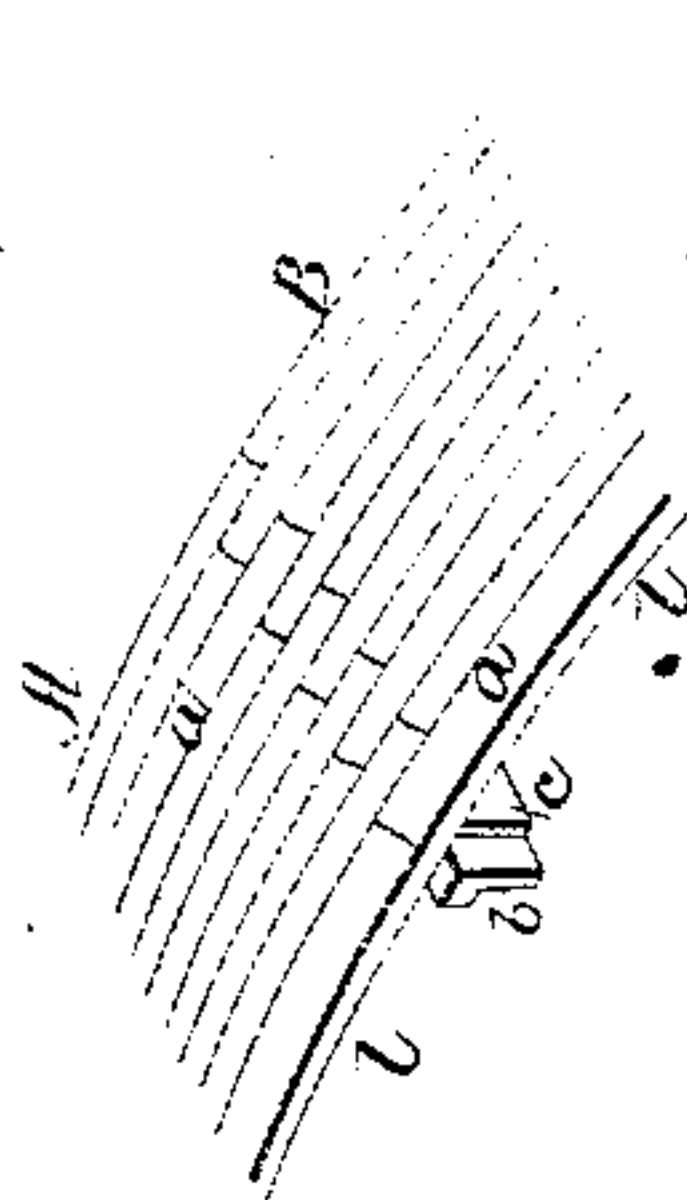


Fig. 4.

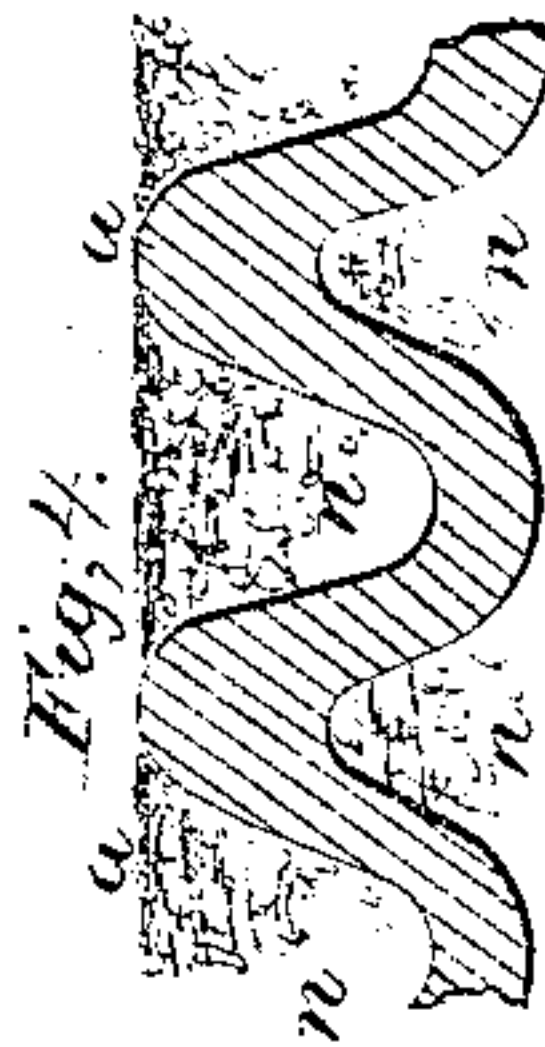


Fig. 1.

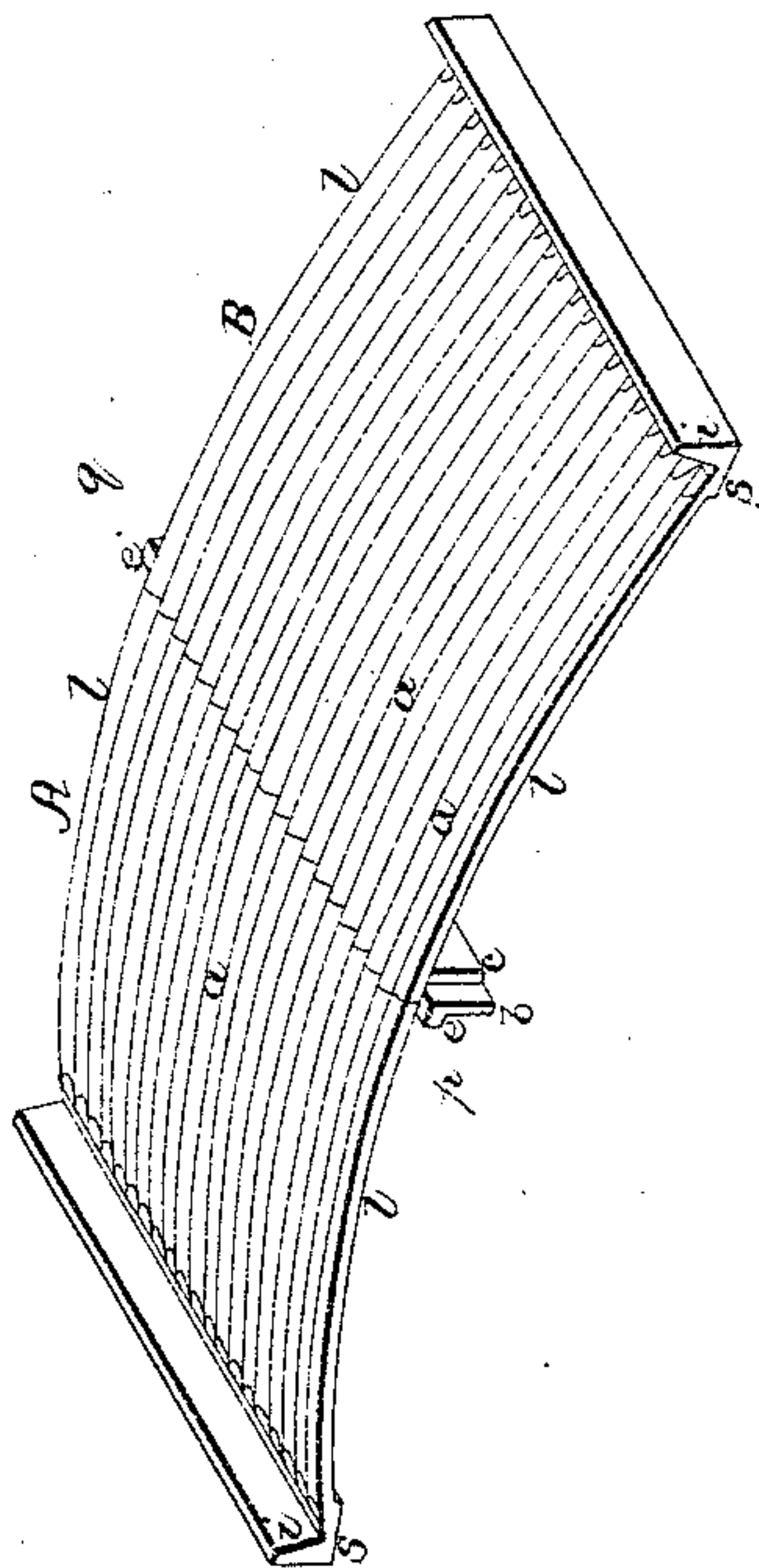


Fig. 2.

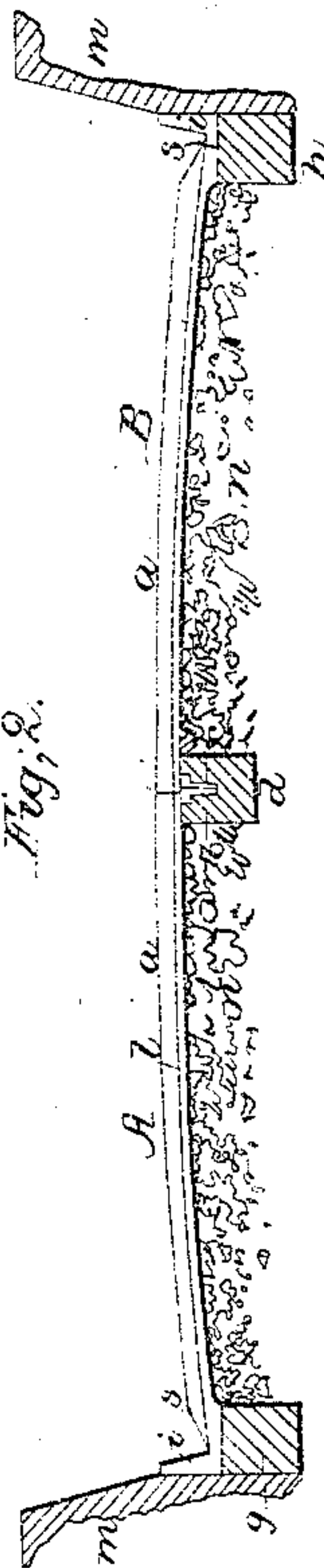
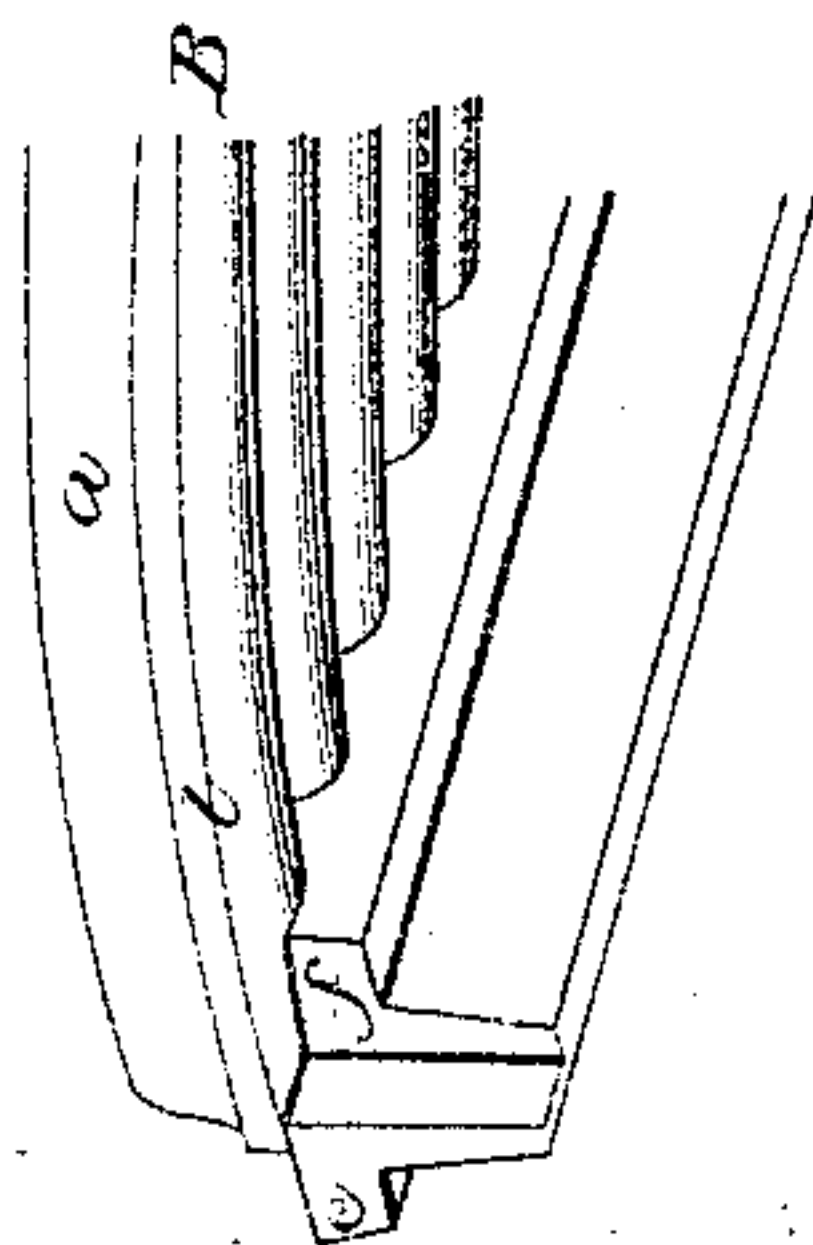


Fig. 3.



Fig. 6.



Witnesses;
J. P. Fritzen
A. H. Hiddlecombe

Inventor;
R. Montgomery

UNITED STATES PATENT OFFICE.

R. MONTGOMERY, OF NEW YORK, N. Y.

IRON PAVEMENT.

Specification of Letters Patent No. 22,444, dated December 28, 1858.

To all whom it may concern:

Be it known that I, RICHARD MONTGOMERY, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Iron Pavements for Streets; and I do hereby declare that the following is a full description thereof.

To enable those skilled in the art to which my improvement belongs to construct and use my improvement I will now proceed to describe the same, reference being had to the annexed drawings and to the letters of reference marked thereon, forming a part of this specification.

In these drawings Figure 1 represents a perspective view of the arch which this pavement forms across the street; Fig. 2, represents a longitudinal and Fig. 3, a cross section of one of these arches; Fig. 4, exhibits a portion of the ribbed surface of this pavement on a large scale; Fig. 5, represents a modification of the plan of joining the arch plates as shown in Fig. 1; Fig. 6, is a perspective view of one of the inner corners of one of the arch plates; Fig. 7, is a top view of part of two arch plates when interlocked by means of dovetails.

It will be seen from Fig. 1, that my pavement, when in place, resembles a continuous iron bridge, the curbstones *m, m*, answering as abutments to support the same. In this way but little weight is allowed to rest or bear at any one point upon the ground or earthen roadway.

The accompanying drawings represent the arches as being formed of two plates (A, B,) each, meeting in the center of the street on the line *p, q*. Each arch however might be formed of one plate only reaching from curbstone to curbstone, without the central joint. The plate B, is provided with a vertical flange *b, c*, along its inner edge. This flange has a horizontal rib *e*, which projects beyond the edge of the plate B, and serves to support the inner edge of the other plate A. The flange has another horizontal rib *f*, extending backward for the purpose of strengthening the flange. The portions *b, e*, of the flange projects beyond both edges *l, l*, of the arch, while the portion *c, f*, of the flange does not reach quite to the edges *l, l*, of the arch, thus forming a recess *b r c*, at each end of the flange. The next arch which is intended to join the arch represented in Fig. 1, would be similarly con-

structed, with the only exception that in that arch the ends of the portion *c, f*, of the flange would project beyond the edge of that arch and the ends of the portion *b, e*, of the flange will stop short of the edge of the arch. Thus the ends of the flange of each arch are made to interlock with the ends of the flanges of the adjoining arches.

The curbstone edge of each plate is provided with a flat horizontal face *s*, and a vertical flange *i*, the vertical flange to abut against the curbstone *m*, and the face *s*, to rest upon wooden sleepers *h, g*, which are laid along the curbstone the whole length of the street. The curbstone ends of the plates may be spiked to these sleepers if desirable, and may also be provided with suitable holes to permit the water to run off into the sewers. Similar sleepers *d*, run along the center of the street and are properly grooved to receive the flanges *b, c*, of the plates B.

The plates are covered with arched corrugations *a, a*, which are all parallel and run across the street. The body of the corrugation is thicker on top as represented at *a, a*, Fig. 4. The ends of the corrugations instead of meeting in one line may be made to interlock as represented in Figs. 5, and 7. If arranged on the plan last mentioned two or more of the corrugations of each plate may be dovetailed as represented at *k*, Fig. 7, for the purpose of uniting each two plates in the most substantial way.

On streets which are not very wide or over which only light vehicles are driven, the vertical flange *i*, may be dispensed with and the plates be constructed without it.

The space between the sleepers below the arches as well as the spaces between the top portion of the corrugations may be filled up with concrete as represented at *n, n*, in Figs. 2, 3, and 4, if desired. Thus a smooth and even surface will be produced, and the corrugated iron surface is to a great extent protected from wear and tear.

In the modified arrangement represented in Figs. 5, and 7 the interlocking ends of the corrugations lie across the flange *b, c*, so as to be properly supported. The advantages of this arrangement are many, especially when streets are to be laid out over made ground or light and yielding soil. Another great advantage of my pavement consists in its great durability. By forming the corrugations thicker on the upper face

(see *a, a*, in Fig. 4), and giving them a gentle curved or arched form, they resist great strain and at the same time will endure great wear. This arched pavement
5 presents an even surface for carriages, omnibuses and drays, to pass over with the ease of a rail road, without the present enormous wear and tear and the unnecessary consumption of so much horse power. Again,
10 by constructing pavements after my plan, a firm foothold is always afforded for horses, since even if the top of the corrugations becomes much worn, there will still be sufficient space between the corrugations to re-
15 ceive the calks of the horse's shoe.

There will be less liability of expansion and contraction in my pavement, than in any other iron pavement with which I am acquainted, inasmuch as the corrugations on
20 the under side are always filled with moist earth, and as the surface thus exposed is very great, the heat of the sun upon the small part exposed to its direct rays, is counteracted to a great degree.

5 Having described my improved pavement,

what I claim as new in this application and desire to secure by Letters Patent, is:

1. A metallic pavement consisting of a series of parallel arched corrugations reaching or extending from the curbstone on one
30 side of the street to the curbstone on the other side, substantially as shown and described.

2. I also claim casting or making the upper parts of the corrugations thicker than
35 the lower parts, in the manner and for the purpose set forth.

3. I also claim supporting or anchoring the pavement, when it is cast in sections, by a grooved central support as shown and de-
40 scribed.

4. I also claim the dovetailed recesses and projections *b, c*, in combination with the projection *b, c*, for the purpose of holding the pavement in place.

R. MONTGOMERY.

Witnesses:

EDW. F. BROWN,
THOS. H. DODGE.