E. C. Smith,

Iron Pavement.

No. 110,597. Patented Dec. 27, 1870.

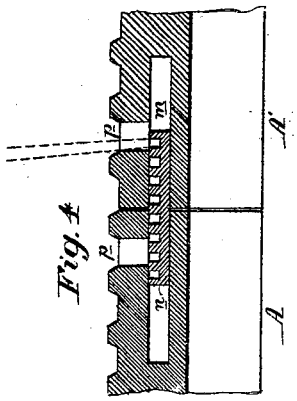

Fig. 4.

Fig. 1.

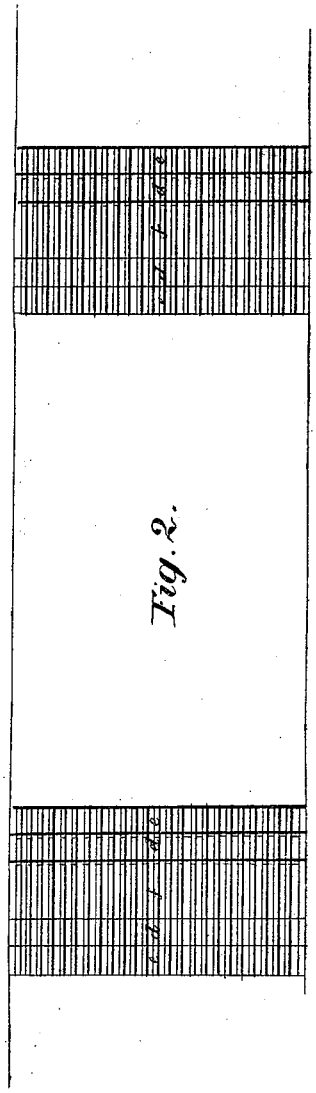

Fig. 2.

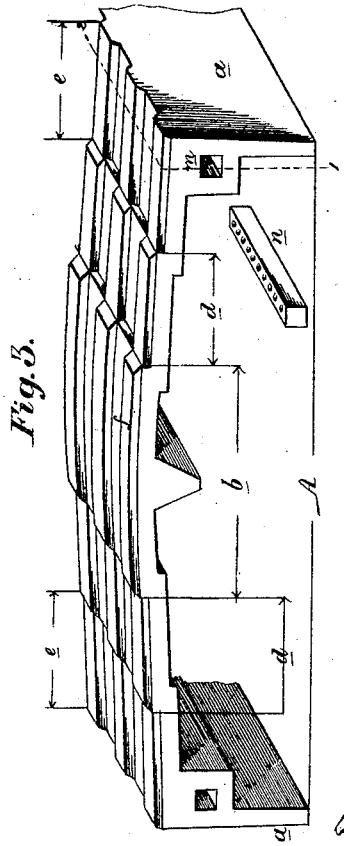

Fig. 3.

Witnesses
Jno. B. Harding, Jr.
John Paike.

B. C. Smith
by his Attys
Howson and Sons

United States Patent Office.

BARZILLAI C. SMITH, OF BURLINGTON, NEW JERSEY.

Letters Patent No. 110,597, dated December 27, 1870.

IMPROVEMENT IN COMBINED TRAMWAYS AND PAVEMENTS.

The Schedule referred to in these Letters Patent and making part of the same.

I, BARZILLAI C. SMITH, of Burlington, county of Burlington, State of New Jersey, have invented a Combined Tramway and Pavement, of which the following is a specification.

Nature and Object of the Invention.

My invention consists in the combination, with an ordinary street pavement, of longitudinal girders of cast-iron, constructed in the manner fully described hereafter, the whole forming a tramway, which, while it affords facilities for omnibusses and other like public vehicles having the right of way to be drawn over the tramway with as much ease as a street-car, ordinary vehicles can turn out from the same with much greater ease than from a street-railway.

Description of the Accompanying Drawing.

Figure 1 is a vertical section of my improved tramway and pavement combined;

Figure 2, a plan view;

Figure 3, a perspective view of a portion of one of the cast-iron girders which compose the tramway; and

Figure 4, a section on the line 1 2, showing the mode of connecting two adjoining girders together.

General Description.

The tramway consists of cast-iron girders A, between which is laid an ordinary pavement of wood, stone, or other material. Each girder consists of an upper plate and two vertical flanges, *a a*, and is simply bedded on the prepared surface of the ground, into which the flanges *a a* penetrate. Of the upper surface of the girder, the central portion *b* is the highest, and is slightly arched, as shown in fig. 3, and on each side of this central portion, and slightly lower than the same, a tread, *d*, is formed, these treads being slightly inclined downward in opposite directions from the central portion. These treads *d d* terminate abruptly at the outer treads *e e*, which extend to the edge of the girder, and which are also slightly inclined downward in opposite directions.

Transverse ribs *f* extend across the central portion of the girder, are depressed at the edges of the same, and continued across the tread *d*, at the edges of which they are again depressed and continued across the outer treads *e* to the edges of the girder.

The upper surface of the pavement D coincides with the surface of the outer treads of the girder, above which the ribs *f* project.

The girders are fitted together at the ends in the following manner:

At the ends of each girder, near each upper corner, is formed a square recess or socket for the reception of the square pin *n*, one-half or thereabouts of which projects into the socket of one girder, A, and the other half into the socket of the adjoining girder A′, as best observed in fig. 4, the pins thus serving as dowels for maintaining the girders in line. Near the end of each girder is a vertical opening, *p*, communicating with the recess or socket *m*, and a bar, shown by dotted lines in fig. 4, can be introduced through either of these openings, its end inserted in one of the orifices in the top of the pin, and used as a lever to push the pin in either direction. By means of this lever the pin can be removed entirely from the socket of one girder into that of the other, and any one of the girders can consequently be moved when access has to be had to water or gas-pipes beneath.

Instead of forming a number of orifices in the pin *n*, and adapting a lever to the same, as above described, the said pin might in some instances be provided with a projection or operating-arm, extending upward into one of the openings *p*, the latter, in such case, taking the form of an elongated slot, so as to permit the required movement of the pin and its arm.

In streets of ordinary width three girders, forming two tramways, or two forming one, may be used. In wider streets four girders may be laid, so as to make three tramways, and in still wider streets five girders may be arranged for four tramways. I prefer, however, that the distance between the curb and the tramway nearest to it should be such that vehicles can occupy that space without being disturbed by those traversing the said tramway.

In very narrow streets two tramways might be arranged by placing one girder in the center of the street, and so casting the gutters as to form bearings for the wheels of vehicles.

The girders should be arranged at such a distance apart that vehicles of the narrowest gauge may traverse the treads *e e* of two girders, while vehicles having a wider gauge may traverse the treads *d*.

The central portion *f* of each girder should be of such a width that the hubs of the wheels of a vehicle traversing one tramway shall in no case interfere with the hubs of the wheels traversing the adjoining tramway.

While there is a tendency of the wheels of vehicles to remain on the tramway selected, owing to the downward inclination of the treads, which they traverse to the ends of the ribs of the adjacent treads, it is an easy matter for the vehicles to be turned out from the track, the ribs facilitating such turn out. Hence the tramway, while it affords facilities for omnibuses and other like public vehicles which may have the right of way to be drawn over the tramway

with as much ease as a street-car, ordinary vehicles can turn out from the same with much greater ease than from a street-railway.

Although I prefer to employ the ribs *f*, they might in some cases be dispensed with, providing the inclined treads were retained, without departing from my invention.

Claims.

1. The combination with ordinary street-pavements of longitudinal girders of cast-iron, constructed substantially as set forth.

2. The recesses *m* in the ends of the girders, communicating with vertical holes *p* in the the same, and adapted to the pins *n*, all substantially as set forth.

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

B. C. SMITH.

Witnesses:
WM. A. STEEL,
JNO. B. HARDING.