A. THOMPSON.

Improvement in Street-Railways.

No. 131,913. Patented Oct. 1, 1872.

Fig. 1.

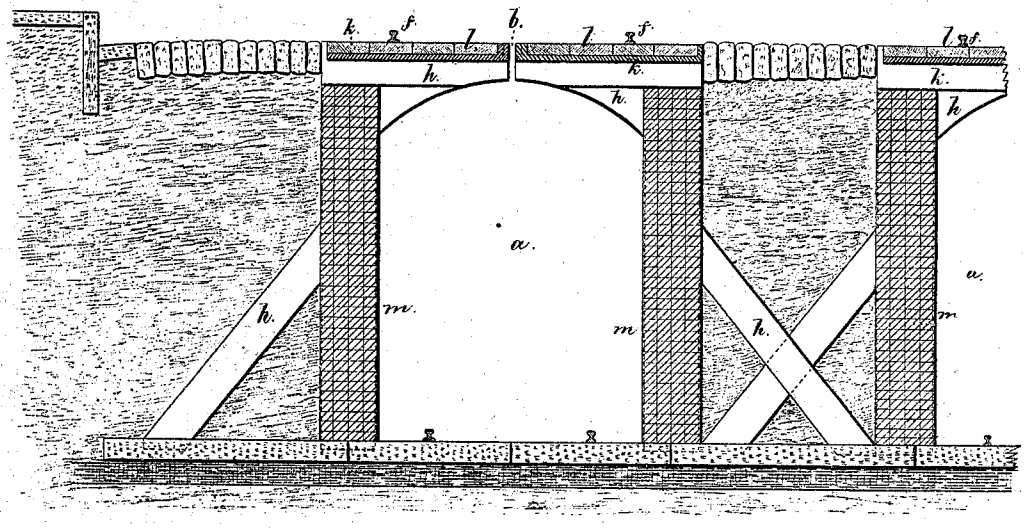


Fig. 2.

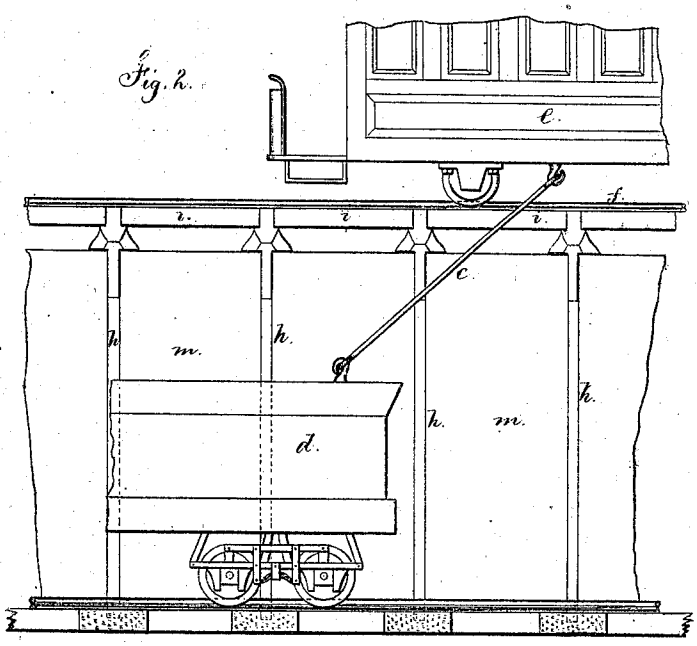
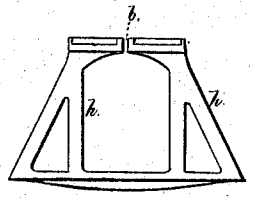


Fig. 3.



Witnesses

Chas. A. Smith

G. E. Pinckney

Abel Thompson

Samuel W. Serrell, Atty.

AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

ABEL THOMPSON, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN STREET-RAILWAYS.

Specification forming part of Letters Patent No. **131,913**, dated October 1, 1872.

To all whom it may concern:

Be it known that I, ABEL THOMPSON, of Newark, in the county of Essex and State of New Jersey, have invented and made an Improvement in Railways for Cities; and the following is declared to be a correct description of the same.

In city railroads the items of expense arise in connection with the horses, their purchase, feed, shoeing, harness, loss from injury and sickness, and from the difficulty experienced in keeping the track in proper condition for travel. My present invention has reference to dispensing with horses, and employing steam-power under circumstances where the same will not frighten horses in the streets, and will not interfere with the ordinary travel. I make use of a tunnel below the surface of the street, with a track for a locomotive; and said tunnel is divided at the top, so as to allow of a connection between the locomotive-engine and the car, which latter runs upon a surface-track; thereby the locomotive-engine is out of sight, and does not frighten animals in the street. It can be made very compact, so that the tunnel only requires to be small, and the engineer can operate the engine in stopping and starting even while sitting. There is no risk of loss by animals being injured; there is no expense of feed, harness, shoes, or pavement; and the car is more reliably under control in stopping and starting than by the present means and the use of horses.

In the drawing, Figure 1 is a cross-section of the tunnel and roadway; Fig. 2 is a longitudinal section, showing the connection from the engine to the car; and Fig. 3 is an elevation, in smaller size, of the metal truss supporting the roof of the tunnel.

The tunnel *a* is to be of any suitable size or shape, and is provided with a longitudinal opening, *b*, through the roof for the plate, rod, bar, or other connection *c* that passes from the engine *d* to the car *e*. The car *e* is to be of any suitable or desired character, and runs upon the tracks *f* that, by preference, are grooved so as to be flush with the surface of the street. The tunnel *a* is to be constructed in any suitable manner, so long as it is provided with a longitudinal opening for the connection that passes from the car to the locomotive, and with tracks for the locomotive to run upon; and the locomotive-engine is to be of any desired character adapted to the circumstances under which it is to be employed. In constructing this tunnel it is necessary that the longitudinal opening shall be so narrow as not to interfere with vehicles that may be traveling along the streets. It should not be over three-quarters of an inch wide, and the parts must be made sufficiently strong to support passing weight. It is preferable that metallic trusses *h* be employed at short distances apart, placed transversely to the tunnel, as shown, and these are to be proportioned and braced to obtain the required strength, and the longitudinal bars *i*, passing from one truss to the next, connect the same, and form the sides of the longitudinal opening. Metal plates *k*, and a pavement of wood, *l*, resting upon the same, will furnish the required strength, and the parts will be light.

The walls *m* of the tunnel may be of brick or other suitable material.

I am aware that a tube or tunnel has been placed beneath the surface, with a connection between a motor contained in that tunnel and the car that runs above the surface, such as in atmospheric railways; but there has not heretofore been a tunnel with a track for an independent locomotive to run upon within the tunnel, and a connection from the same to the car above.

I claim as my invention—

1. The tunnel below the railway track and street, provided with rails for an independent locomotive-engine, and a longitudinal opening through the top of the tunnel for the connection that passes from the locomotive to the car, as set forth.

2. A tunnel, made of transverse trusses *h*, open at the upper portion, and connected by longitudinal bars *i*, substantially as and for the purposes set forth.

Signed by me this 29th day of February, A. D. 1872.

A. THOMPSON.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.