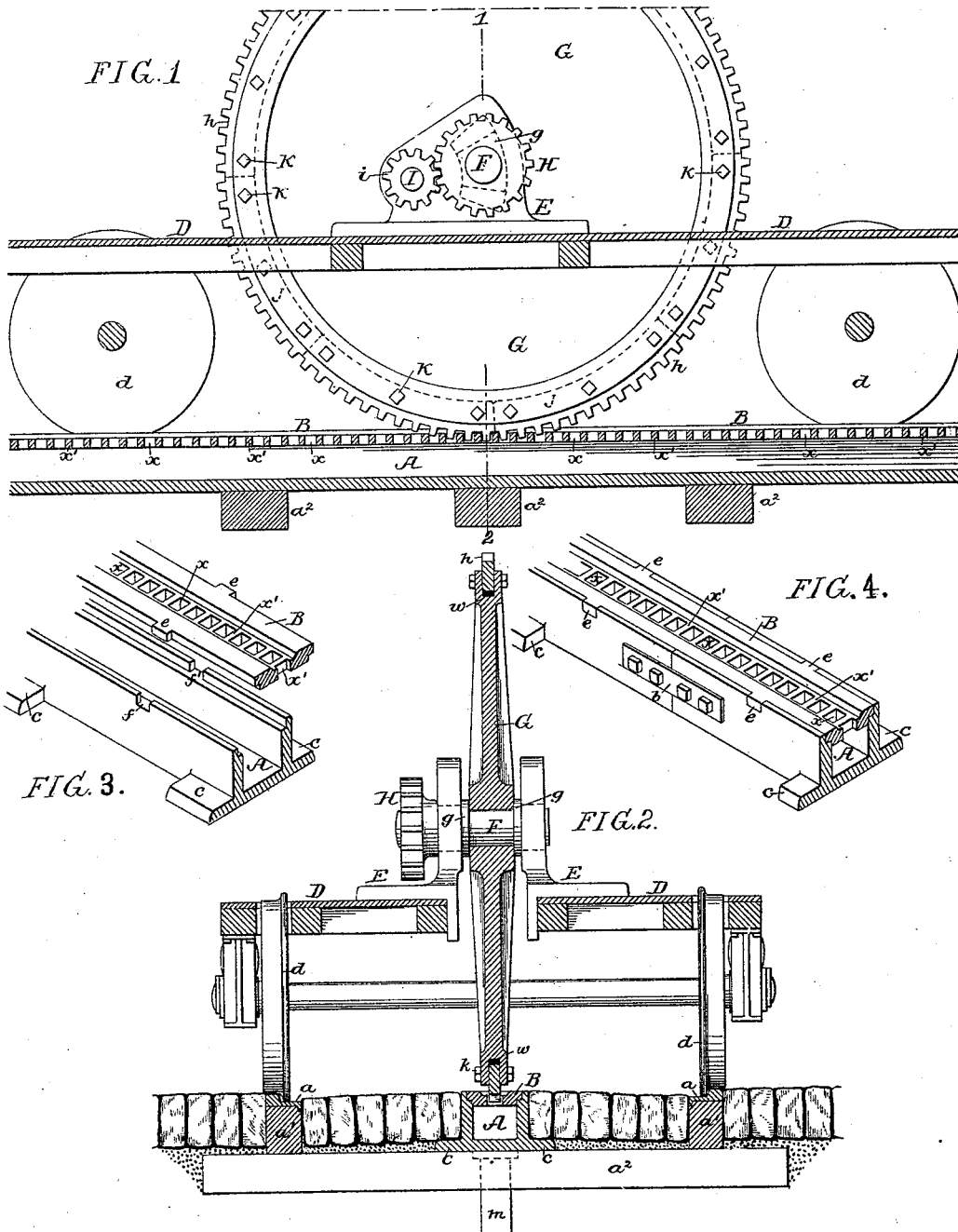


(No Model.)

E. SAMUEL.
TRACTION MECHANISM FOR RAILWAYS.

No. 421,840.

Patented Feb. 18, 1890.



WITNESSES:

Joseph H. Klein
Harry Smith

INVENTOR:

Edward Samuel
by his attorney
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UNITED STATES PATENT OFFICE.

EDWARD SAMUEL, OF PHILADELPHIA, PENNSYLVANIA.

TRACTION MECHANISM FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 421,840, dated February 18, 1890.

Application filed March 16, 1886. Serial No. 195,410. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SAMUEL, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Traction Mechanism for Railways, of which the following is a specification.

My invention relates to that class of traction devices for railways in which a toothed
10 wheel on the car engages with a rack on the roadway.

The object of my invention is to so construct the parts that the racks can be readily removed for repairs or to gain access to the conduit below the rack, as fully described hereinafter.
15

In the accompanying drawings, Figure 1 is a longitudinal section of part of a car and track, showing my improved rack-and-pinion
20 traction device. Fig. 2 is a transverse section on the line 1 2, Fig. 1, and Figs. 3 and 4 sectional perspective views illustrating the construction of the rack.

The rails *a a* of the roadway are supported
25 by the usual longitudinal stringers *a'*, resting on the cross-ties *a*².

A is the box, situated by preference midway between the rails, the cover B of this box having a central longitudinal row of openings X, so that the bridge-pieces X' between
30 the openings form the teeth of a rack for engagement with the teeth *h* of a power-driven

wheel G on the car. The sections of the box A are secured to each other by fish-plates *b* and bolts, as shown in Fig. 4, and said sections have suitable feet *c*, by which they are
35 secured to the cross-ties.

The cover plate or rack B has at intervals lugs *e*, which are adapted to recesses *f* in the sides of the box A, so that the rack is prevented from moving longitudinally, but can
40 be readily moved vertically when it is desired to gain access to the chamber beneath the rack, or when the rack has to be replaced when worn out.

I do not claim, broadly, an open rack, or a rack having a chamber beneath it, the main
45 feature of novelty in my invention being the closed box, which forms a trough or channel with a removable cover, by which access can
50 be had to the conduit, or it can be removed when repairs are necessary.

I claim as my invention—

The combination of the box having notched or recessed sides, with the rack-plate forming
55 the cover of the box and having lugs adapted to said notches or recesses, as set forth.

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

EDWD. SAMUEL.

Witnesses:

JOSEPH H. KLEIN,
HARRY SMITH.