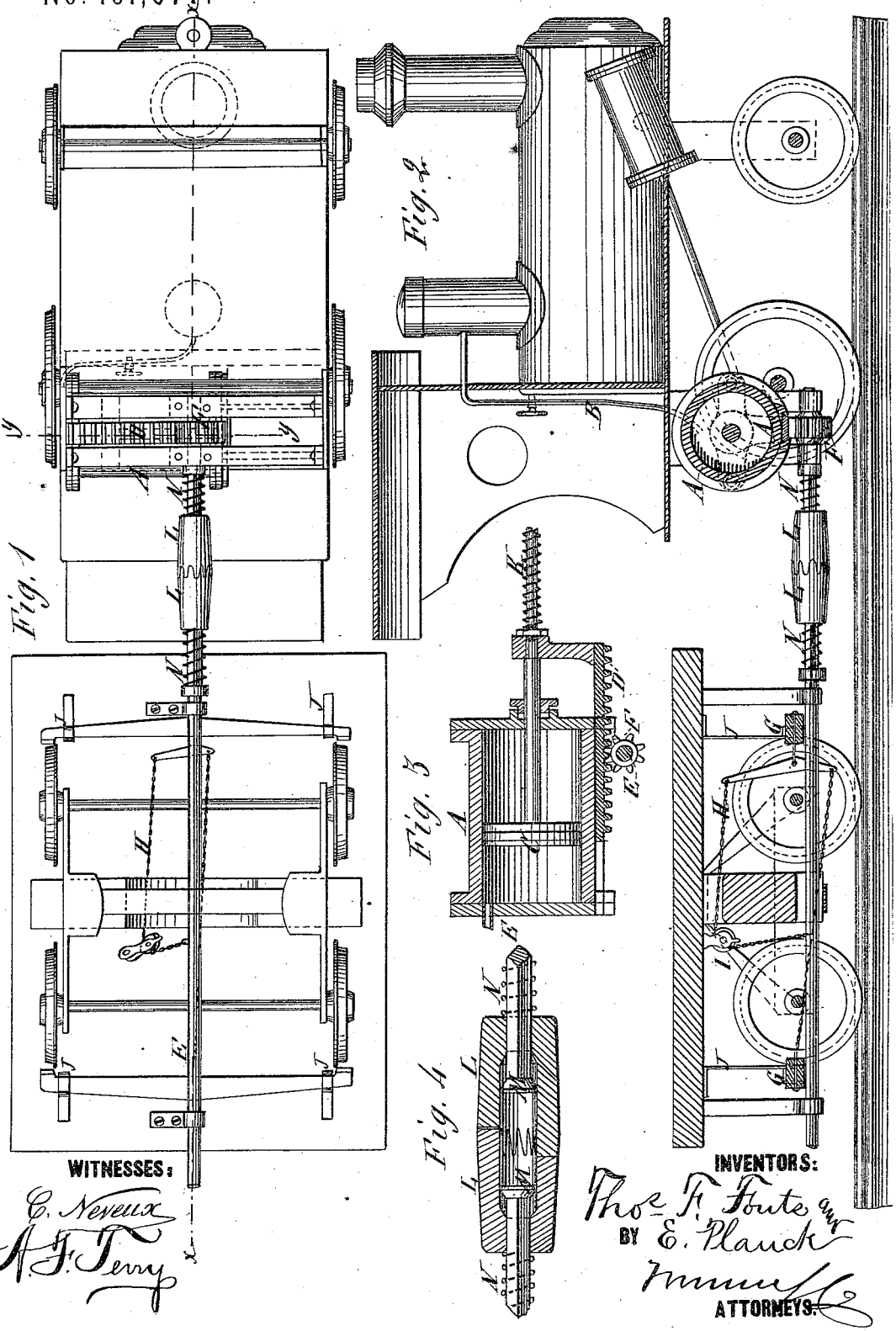
T. F. FOUTS & E. PLANCK.

Steam-Brake.

No. 161,677. Patented April 6, 1875.



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UNITED STATES PATENT OFFICE.

THOMAS F. FOUTS AND ELIJAH PLANCK, OF BURLINGTON, IOWA.

IMPROVEMENT IN STEAM-BRAKES.

Specification forming part of Letters Patent No. **161,677**, dated April 6, 1875; application filed February 13, 1875.

To all whom it may concern:

Be it known that we, THOMAS F. FOUTS and ELIJAH PLANCK, of Burlington, in the county of Des Moines and State of Iowa, have invented a new and Improved Steam-Brake, of which the following is a specification:

The invention consists of a steam cylinder and piston, arranged transversely of the locomotive, and gearing by a toothed rack attached to the piston-rod with a revolving line-shaft, which extends along the train from car to car, and winds up the chains which work the brakes. The steam is supplied from the locomotive-boiler, with which the engine is connected by a pipe, to admit steam at one end for applying the brake. Springs are used to force the piston back. The line-shaft is in sections, one for each car, which are coupled by socket-couplings, which slide forward and backward as the train slacks and extends.

Figure 1 is a plan of a locomotive and car inverted, showing our improved steam-brake. Fig. 2 is a longitudinal sectional elevation. Fig. 3 is a longitudinal section of the steam-cylinder, and Fig. 4 is a section of the coupling used on the line-shaft.

Similar letters of reference indicate corresponding parts.

A is the cylinder, which is arranged under the locomotive transversely thereto, and connected with the boiler by steam-pipe B. C is the piston, to the rod of which is attached the toothed rack D, which gears with the line-shaft E by a pinion, F. The shaft is coupled to another on the tender, and that couples with another on the next car, and so on throughout the train. The shaft of each car is connected with the brakes G by a chain, H, passing over a guide-pulley, I, so as to wind up and draw the brakes against the wheels when the shaft is turned by the engine. The springs J draw the brakes back and hold them in position. The springs K push the piston back, when the steam is allowed to escape from the cylinder, for which a cock with suitable means for working it will be provided. The couplings L have a deep socket for the head M of the end of the shaft, and they slide on the shaft, and have a spring, N, to keep them together when the cars extend, and to allow them to slide back when the tension slacks, and the cars run together.

This arrangement makes a very simple and efficient steam-brake, which can be constructed cheaper than others.

Having thus described our invention, we claim as new, and desire to secure by Letters Patent—

1. The combination of the cylinder A, piston C, sliding rack-bar D, and spring K, all arranged and operating transversely in respect to the locomotive, with the line or brake-operating shaft E and pinion F, as and for the purpose set forth.

2. The sliding socket-couplings L and springs N, combined with the sections of the line-shaft, substantially as specified.

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Witnesses:
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