

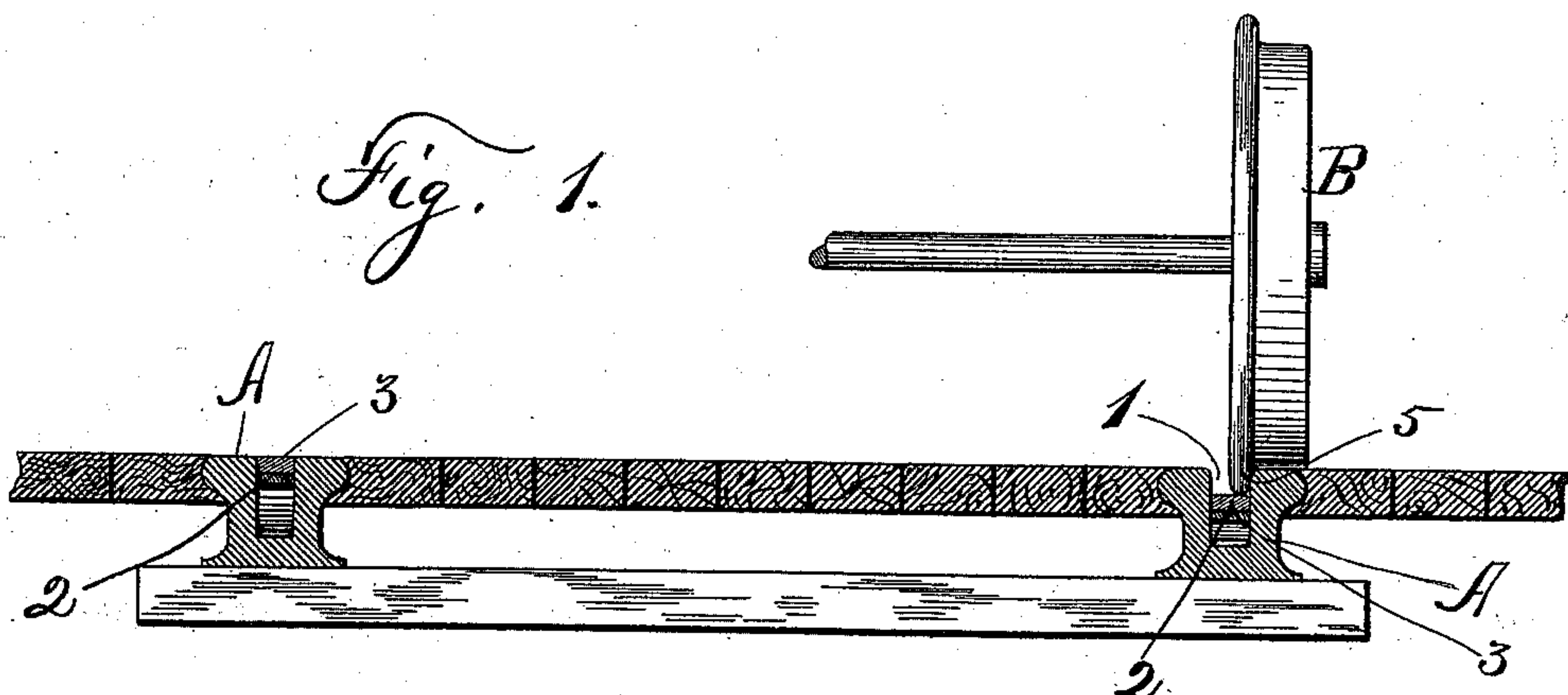
(No Model.)

E. J. KNAPP.  
RAILWAY RAIL.

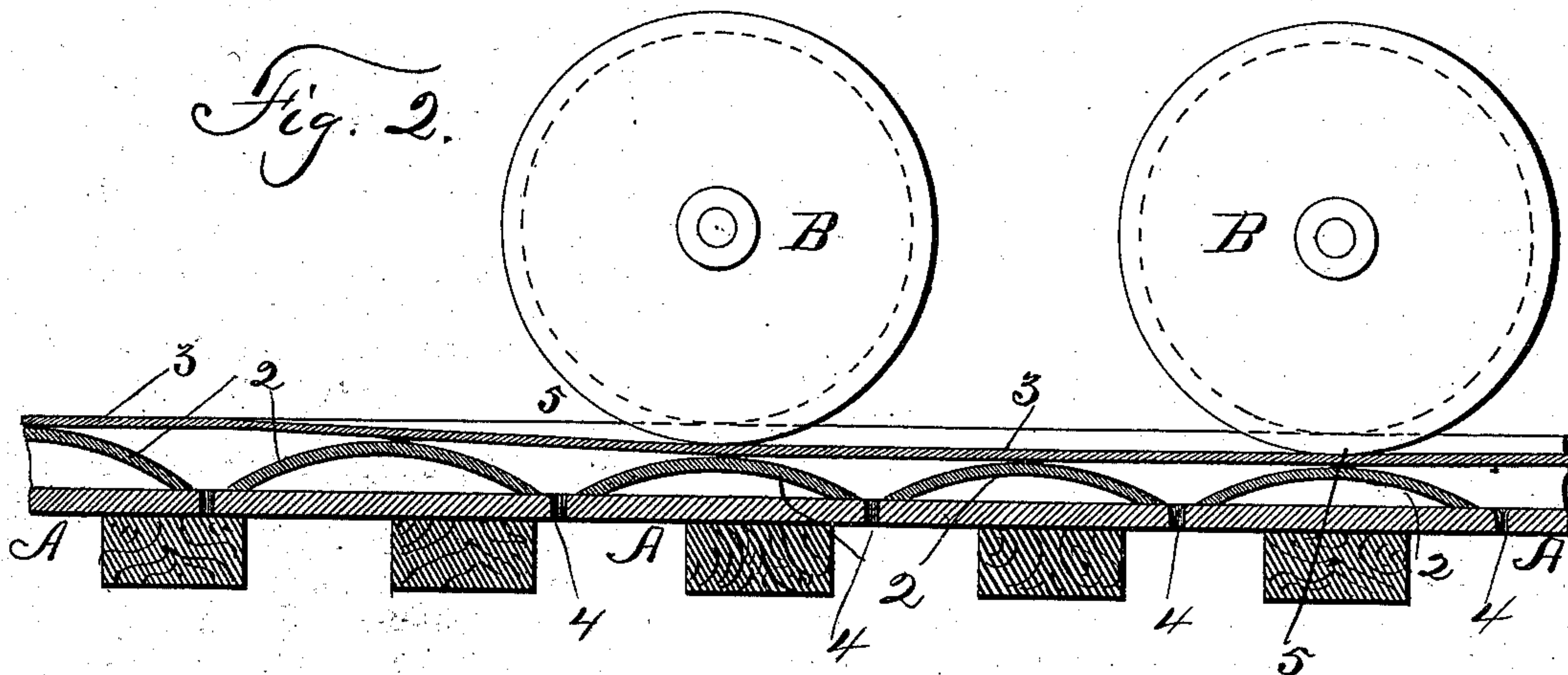
No. 402,022.

Patented Apr. 23, 1889.

*Fig. 1.*



*Fig. 2.*



Witnesses,

H. R. Denisow  
Frank Featherly

Edward J. Knapp Inventor,

By his Attorneys  
Smith & Denisow

# UNITED STATES PATENT OFFICE,

EDWARD J. KNAPP, OF SYRACUSE, NEW YORK.

## RAILWAY-RAIL.

SPECIFICATION forming part of Letters Patent No. 402,022, dated April 23, 1889.

Application filed October 13, 1888. Serial No. 287,989. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD J. KNAPP, of Syracuse, county of Onondaga, in the State of New York, a citizen of the United States, have invented certain new and useful Improvements in Railway-Rails, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical transverse section of the railway, showing a wheel in position. Fig. 2 is a vertical longitudinal section of the rail, showing two wheels in elevation.

My invention relates to the construction of rails for railways.

The object of my invention is to produce a rail provided with a recess for the flanges of the wheels, which is closed in its normal position and opened to receive the flange when the weight of the car is applied through the flange to the filling in the flangeway.

My invention consists in the several novel features of construction and operation herein-after described, and which are specifically set forth in the claim hereto annexed.

It is constructed as follows:

A is the rail, provided with the longitudinal central groove or flangeway, 1, the sides of the top adjacent to the groove being flattened or otherwise adapted to be the tread of the rail, and, also, these tread and rail sections are so constructed that the rail can be used either way, or when one side is worn the rail can be turned around and the other side used.

In the slotway I place first the springs 2, and upon those I place the longitudinal filling-

bar 3, which is of the same width as the groove of the rail, fitting closely therein, so that when a car comes along the weight will force the filler down, compressing the springs, substantially as shown in Fig. 2, and then the flange 5 of the wheel B fits into the groove and secures a perfect support therein, and as the car advances the springs, as soon as the weight is removed, throw the filler back to its normal position flush with the tread of the rail.

In the bottom of the groove I make the perforations 4, through which any water entering the grooves can escape.

It will be observed that by this construction of rail I am enabled to lay the rails so that the tread is flush with the pavements on either side, thus forming no obstruction whatever to the wheels of vehicles. The springs, which yield to the weight of the car, are too stiff to give any under the weight of a buggy, and heavy wagons are provided with wheels the tires of which are wider than the grooves.

What I claim as my invention, and desire to secure by Letters Patent, is—

A railway-rail grooved longitudinally and provided with a yielding filler, and drainage-perforations through the bottom of the groove, substantially as described.

In witness whereof I have hereunto set my hand this 11th day of October, 1888.

EDWARD J. KNAPP.

In presence of—

H. P. DENISON,  
FRANK FEATHERLY.