

S. Marsh.

Railroad Rail.

N^o 61, R.R.I.

Patented Jan. 15, 1867.

Fig. 2.

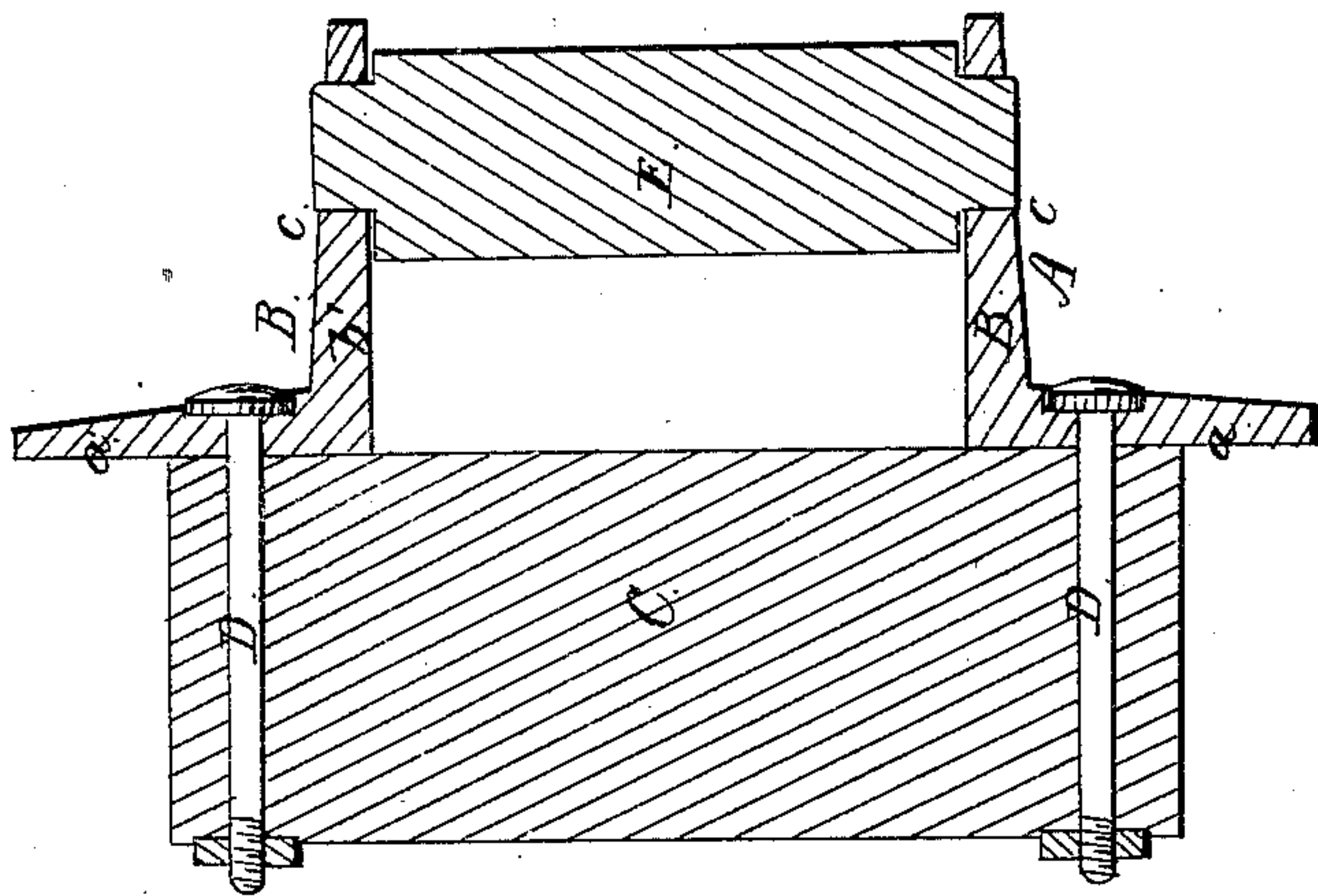
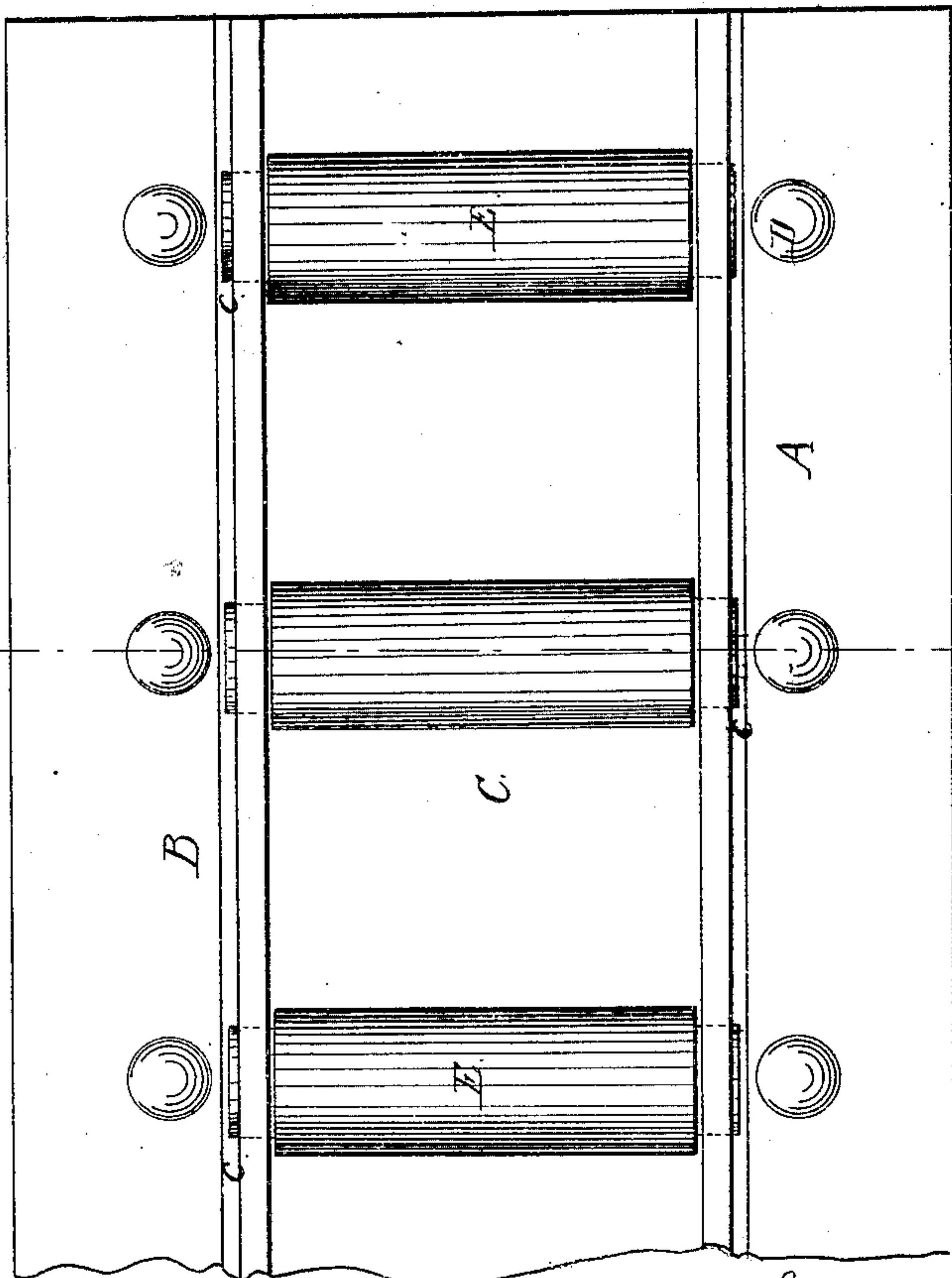


Fig. 1.



Witnesses:

W. Barclay
W. Reynolds

Inventor:

S. Marsh
by J. P. Collop atty.

United States Patent Office.

SYLVESTER MARSH, OF LITTLETON, NEW HAMPSHIRE.

Letters Patent No. 61,221, dated January 15, 1867.

IMPROVED COG-RAIL FOR RAILROADS.

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

TO WHOM IT WILL CONCERN:

Be it known that I, SYLVESTER MARSH, of Littleton, in the county of Grafton, and State of New Hampshire, have invented a certain and improved Ratchet or Cog-Rail, to be used in combination with gear; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings.

The object of my invention is to construct a rail suitable for use on roads of steep grades. It need not, however, be limited to this use, as it may also be put to many uses for which the ordinary rack is employed in combination with gear. To accomplish my object, I take two pieces or bars of angle iron connected by pins or rollers, which, at suitable intervals from one another, have their bearings in the upright sides of the angle iron, thus forming a rack or cog-rail with which the gear of the car truck can engage. The two bars of angle iron, which should be of wrought metal, are bolted or otherwise secured to timber of proper size and dimensions so as to be parallel with each other, being so placed that their flat sides, by which they are bolted to the timber, shall be exterior to the space included between their upright sides. The rollers or cogs, which have their bearings in the upright sides, are placed at suitable distances from one another to correspond with the distances between the teeth of the truck wheel, and are preferably so constructed and arranged as to turn or revolve in their bearings. This, however, is not absolutely essential, for the pins or cogs may be rigidly connected with the uprights. But I prefer the arrangement shown in the drawings, as friction is thereby lessened, and the wear of the metal which the passage of the truck-wheels over the rail would otherwise occasion, is in great measure prevented. An important feature of the cog-rail thus constructed, is, that its open structure will, in most cases, keep the pins or rollers from being clogged by ice or snow or dirt to such a degree as to be unfitted for use, the liability to which constitutes one of the most serious drawbacks to the employment of the ordinary rack for this purpose. The open space between, beneath, and in fact on all sides of the cogs, except at the points where they are hung in the uprights, is entirely open, so that comparatively little obstacle is offered to the passage of the wheels over the rail, even when the latter is overlaid with snow. In the accompanying drawings I have fully illustrated the construction and arrangement of the different parts of which my improved rail is composed.

Figure 1 represents a plan view of the rail; and

Figure 2 a sectional view on the line *x y*, fig. 1.

The two parallel pieces of angle iron A and B are secured to the timber C by bolts D, or other suitable means. They are placed at such distance from each other as is required by the length of the cogs which they support, and their flat sides *a a'* are exterior to the space enclosed between their upright sides *b b'*. The pins or cogs E are supported in bearings, *e*, formed in the uprights *b b'*, and are placed at suitable distances apart, to correspond with the intervals between the teeth of the wheels of the car trucks. These cogs are cylindrical in form, and, as shown in the drawings, are arranged to revolve or turn in their bearings when they become engaged with the truck gear, which arrangement, as above stated, lessens considerably the friction and prevents the excessive wear to which the cogs would otherwise be subjected. The rail thus constructed may be employed to advantage in many cases where the ordinary rail is used; but it is specially adapted for roads of steep grades. It has been practically tested, and having been found to form a rail upon which cars can run with great ease and safety, is now in use on a railroad the grade of which in many places is one foot in every three. In order to guard against the effect of excessive cold, all parts of the rail should be constructed of wrought iron, so that it may be subjected to all variations of temperature without injury. It will be readily seen that the principal feature of my invention consists in constructing the cog-rail of uprights combined with pins or rollers, as hereinbefore described, and that the form and construction of the uprights may be considerably varied without departure therefrom.

I do not, therefore, limit myself to the precise arrangement of parts shown in the drawings; but what I claim, and desire to secure by Letters Patent, is—

1. A ratchet or cog-rail composed of cylindrical cogs, free to revolve upon their axles or trunnions, substantially as herein shown and described.

2. In a ratchet or cog-rail constructed as described, I claim forming the uprights, which support the cogs or rollers, of angle iron, substantially as herein shown, and for the purposes set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

SYLVESTER MARSH.

Witnesses:

EVARTS W. FARR,

JOHN FARR.