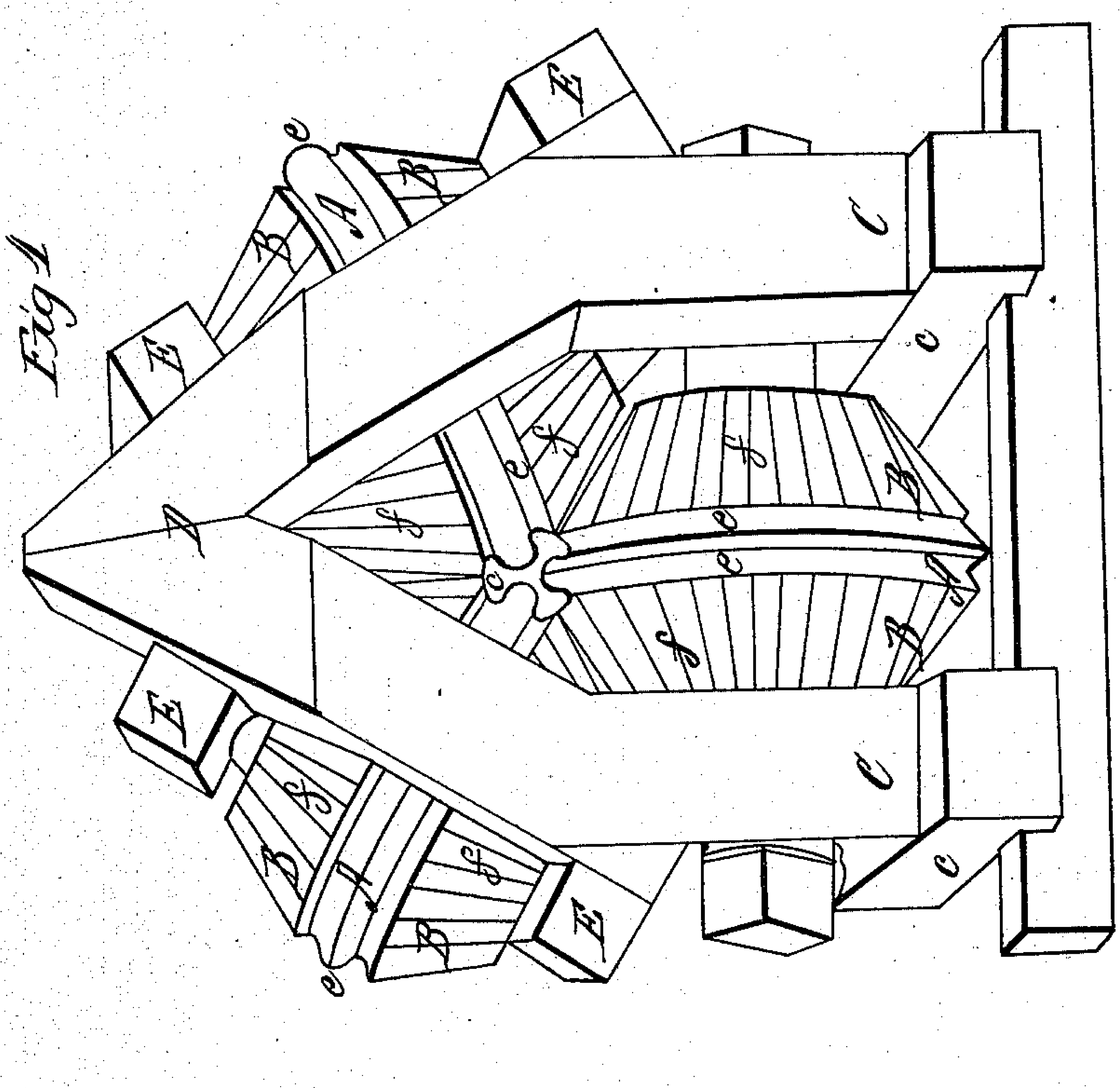
2 Sheets—Sheet 1.

A. J. SUFFERN.

MACHINE FOR ROLLING RAILROAD AND OTHER IRON.

No. 12,837. Patented May 8, 1855.

Fig 1



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2 Sheets—Sheet 2.

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MACHINE FOR ROLLING RAILROAD AND OTHER IRON.

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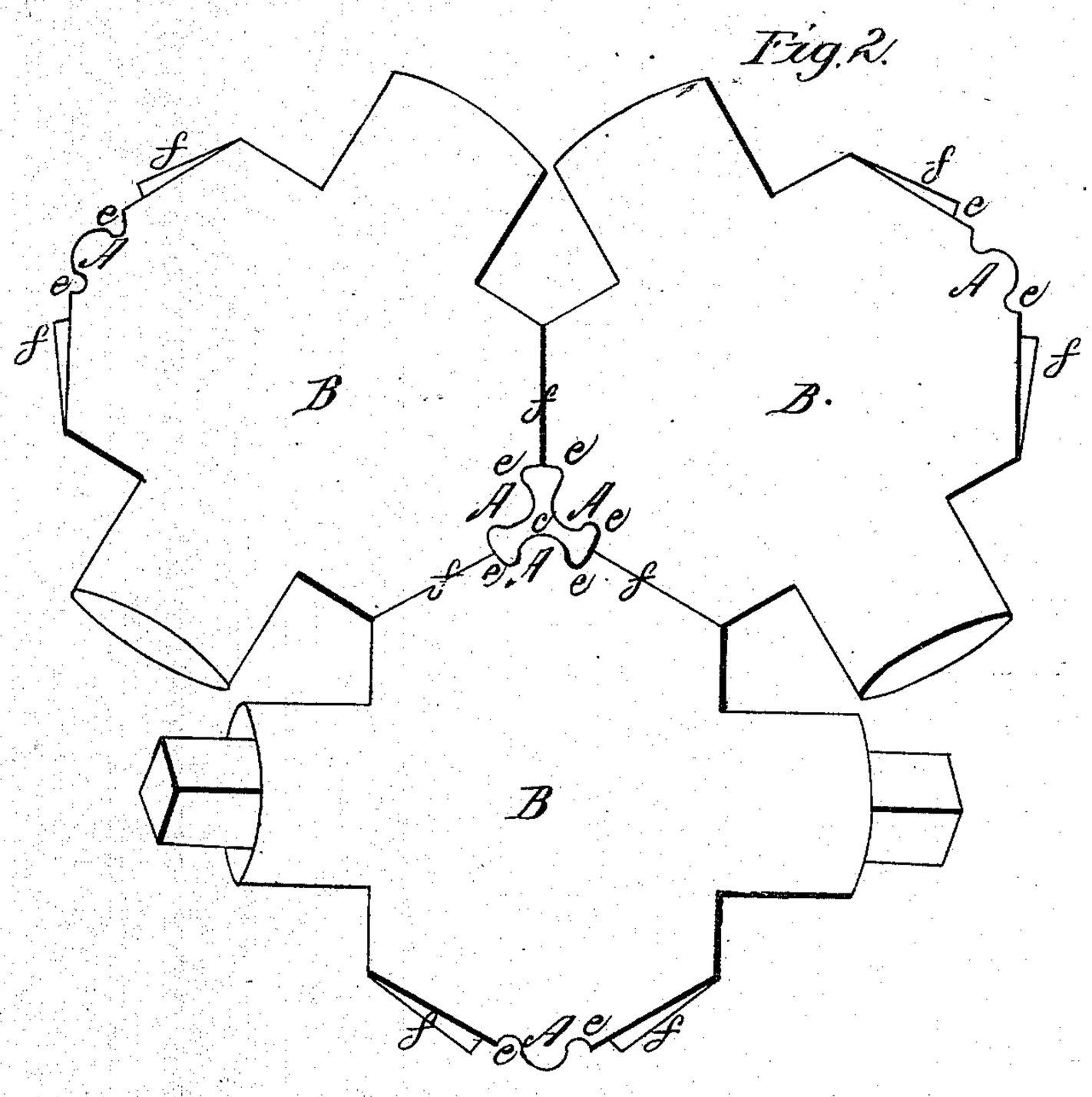
Fig. 2.



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UNITED STATES PATENT OFFICE.

ANDREW J. SUFFERN, OF SUFFERN, NEW YORK.

MACHINE FOR ROLLING RAILROAD-RAILS.

Specification of Letters Patent No. 12,837, dated May 8, 1855.

To all whom it may concern:

Be it known that I, ANDREW JACKSON SUFFERN, of Suffern, in the county Rockland and State of New York, have invented a new and Improved Machine for Rolling Railroad-Rails with Three Treads or Wearing-Surfaces; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a perspective view of the said machine; and Fig. 2, a vertical section.

The same letters indicate like parts in all the figures.

The object of my invention is to roll railroad rails with three treads or wearing surfaces so that as the surfaces become worn, by simply turning the rail one third around a second new surface will be presented, and when that is worn a third surface will be presented, the two surfaces which are not employed as a tread at any time forming a broad base for the support of the third tread, such rails with three treads, both for economy of iron and to facilitate the securing of them to the cross ties, should be formed with each part like the ordinary T rail, as it is technically termed, the union of the three presenting three grooves or channels which cannot be rolled by any form of projections on either two or four rollers, nor by three rollers unless their axes be arranged in a peculiar manner.

To accomplish the result specified, my invention consists in the employment of three rollers with their axes arranged in the lines of an equilateral triangle, so geared as to rotate with equal velocities, and each having a projecting fillet to produce one of the grooves between two of the rails or treads, and the periphery each side of the fillet being so shaped as to produce the form of one half of two of the rails.

In the accompanying drawings, C, represents a suitable frame which may be varied at the judgment of the constructor, and in which are mounted three rollers B, B, B, with their axes arranged in the lines of an equilateral triangle. The form of the three tread rail, in its cross section is represented by the open space *c*, at the junction of the three rollers, and the form of this open space is produced by the form of the peripheries of the three rollers, each having a fillet A, extending around its entire circumference and a groove *e*, on each side.

The form of the fillet and the two grooves represented in a section taken in the plane of the axis of either of the rollers, will correspond with one third of the cross section of the three tread rail extending from the middle of the breadth of one of the treads to the middle of the breadth of the next, and therefore each groove will be the reverse of one half of a tread while the fillet will be semi-circular, the semi-circular fillet gradually running into the grooves which form the edges and wearing surface or treads of the rails.

The three rollers are formed in the same manner, and so beveled beyond the grooves *e*, *e*, as to roll in contact to prevent the forming of a fin on the middle of each tread of the rail. And beyond this the rollers are cogged as at *f*, *f*, that the three may rotate in unison. The shaft of one of them should project sufficiently to receive motion from some suitable motor.

The boxes in which the journals of the rollers are mounted are to be adjustable in manner well known to mechanicians acquainted with machinery for rolling iron and which therefore does not require to be described. The rollers may be differently geared as this makes no part of my invention.

The two tread rail has long been used, particularly in England, on account of economy compared with the single tread rail, the original cost being but little more than the cost of the single tread rail, but the use of the double tread rail is attended with serious difficulties, on account of the want of a supporting base. This objection is entirely avoided by the three tread rail, as two of the treads form a broad base for the support of the third which is used as the tread. But the want of a suitable machine for rolling such rails of the required form has prevented their introduction into practical use, as it will be obvious that the T cannot be given by either two or four rollers nor even by three except under the arrangement herein specified. A three tread rail could be rolled with a different arrangement of rollers, but then the shank of the rail could not be made of less thickness than the head or tread, and such form would not only be objectionable on account of the great weight

and wasteful expenditure of iron, but the form would not present projecting flanch like surfaces at the sides for the heads of the spikes.

By my invention three tread rails can be rolled with the treads wider than the thickness of the shanks to economize iron in proportion to the durability, with a broad base to rest on the cross ties and with flanch like projections on each side to receive the heads of the spikes.

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

The employment of three rollers in combination, arranged with their axes in the lines of an equilateral triangle each roller having a projecting fillet and a groove each side, and the three working in unison, substantially as herein specified, for rolling three tread rails, each roller forming the surface from the middle of one tread to the middle of the next, and the groove between of such form that each head or tread may be wider than the thickness of the shank, as set forth.

ANDREW JACKSON SUFFERN.

Witnesses:
WM. H. BISHOP,
ANDREW DE LACY.