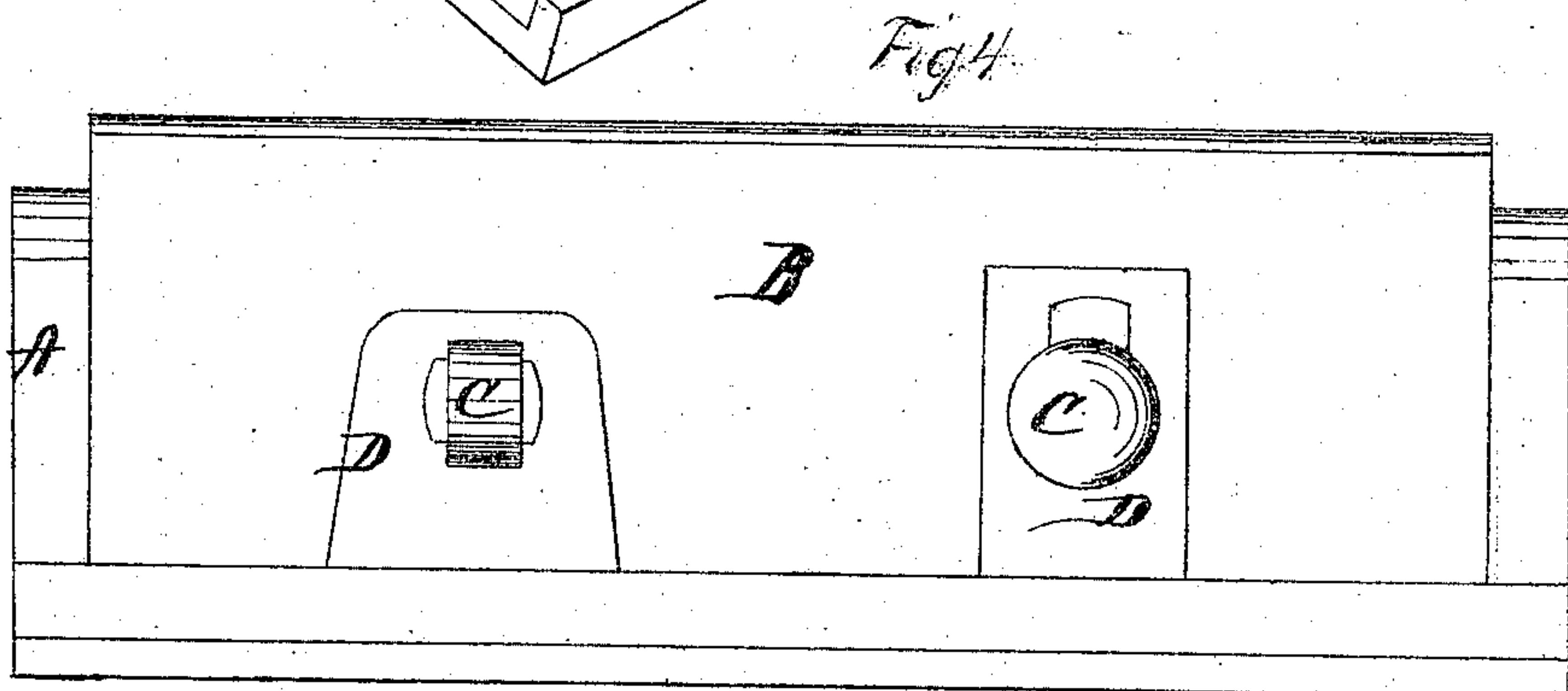
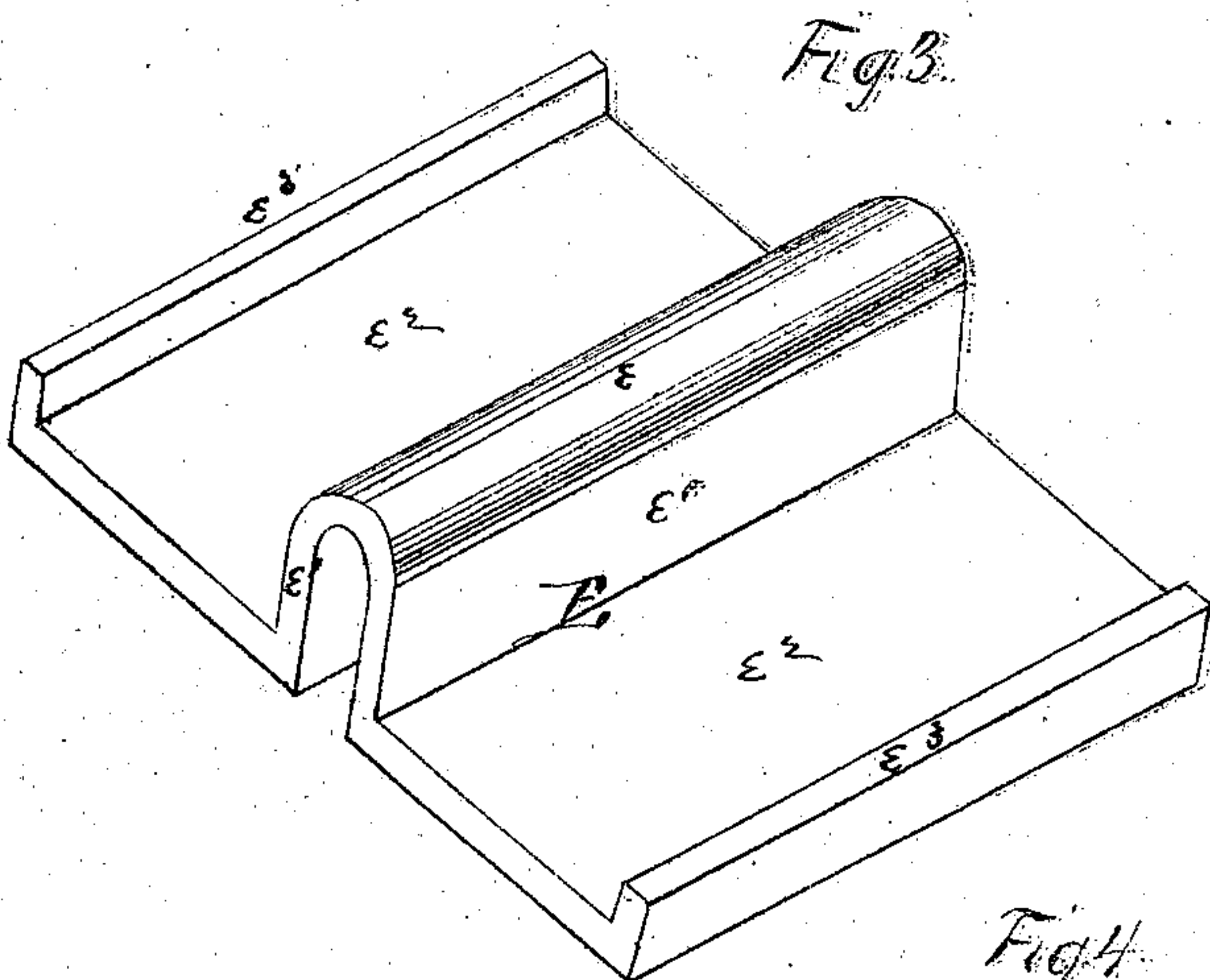
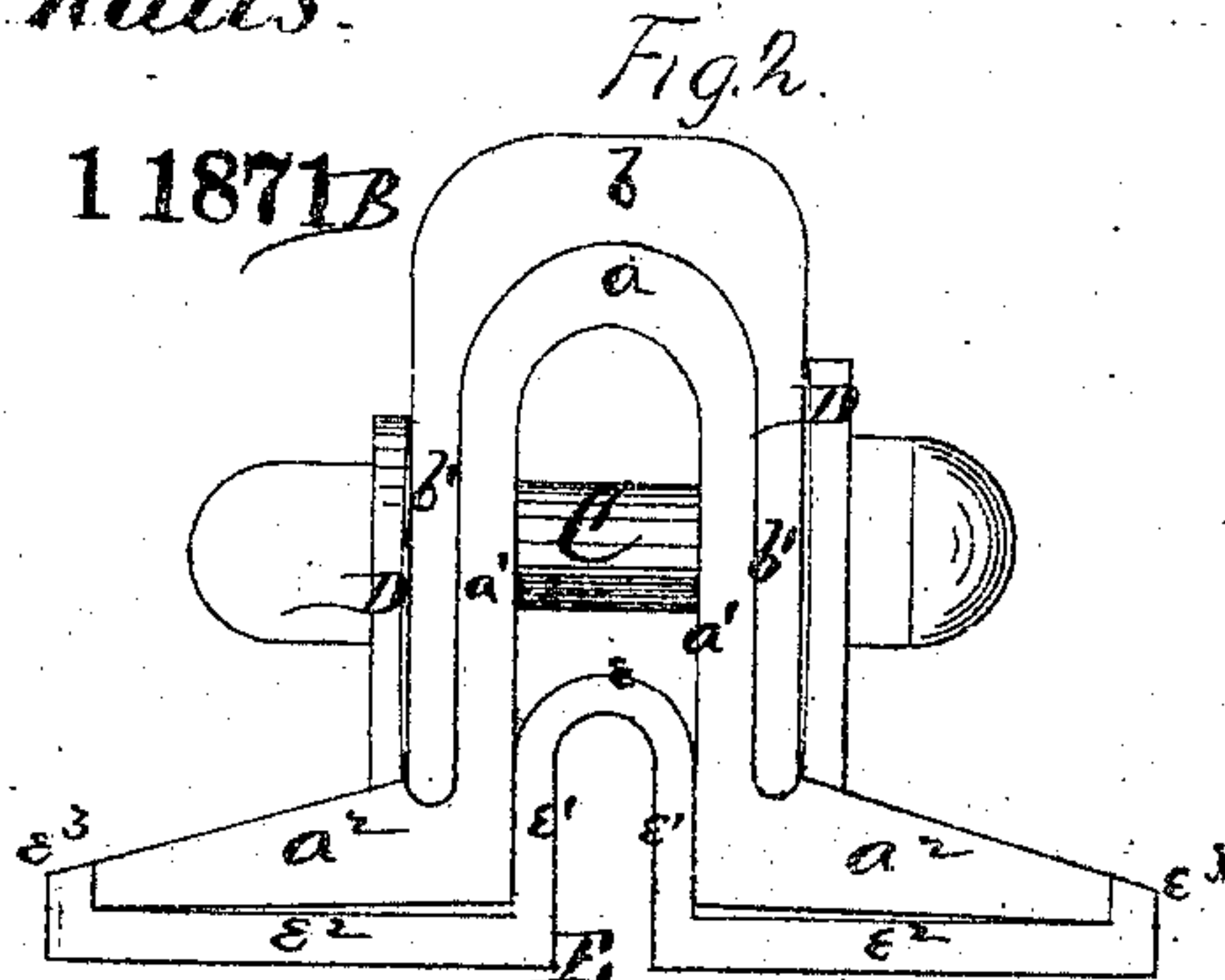
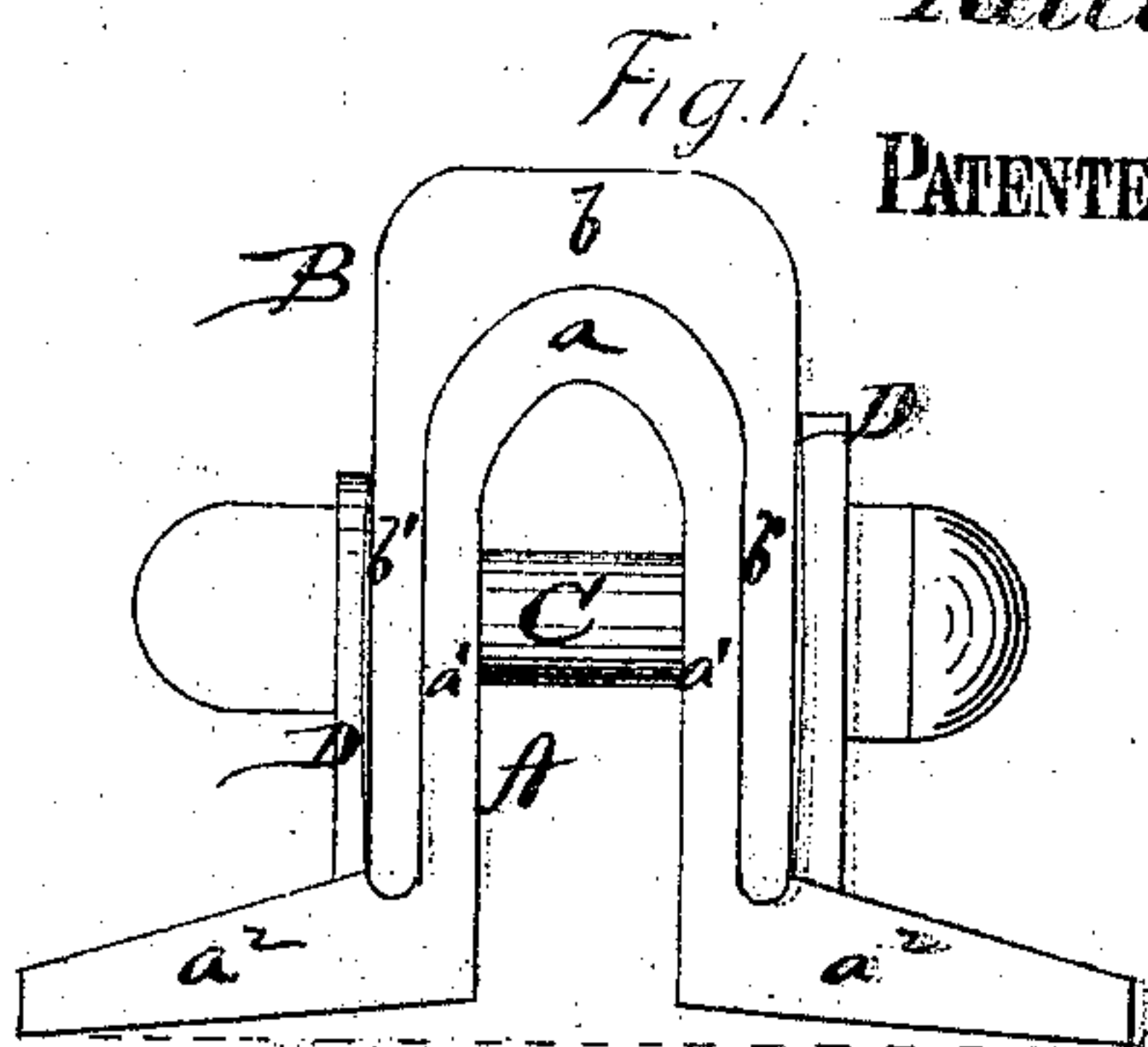


117658

*A. Mc Kenney,*  
*Railway Rails.*

PATENTED AUG 1 1871



Witnesses

*Jas. Q. Hutchinson*  
*C. L. Everts*

Inventor

*Almeron McKenney*  
*per*  
*Alexander Murray*  
*Attys.*



# UNITED STATES PATENT OFFICE.

ALMERON McKENNEY, OF MAUMEE CITY, OHIO.

## IMPROVEMENT IN RAILWAY RAILS.

Specification forming part of Letters Patent No. 117,658, dated August 1, 1871.

*To all whom it may concern:*

Be it known that I, ALMERON McKENNEY, of Maumee, in the county of Lucas and in the State of Ohio, have invented certain new and useful Improvements in Railroad Rails; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a compound railroad rail in two parts, each in the form of an arch, and put together so that one part shall overlap the ends of the other so as to effectually support the joint and form a continuous rail. It also consists in the construction of a railroad chair, to be used in connection with my railroad rail, all of which will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is an end view of my rail without the chair. Fig. 2 is an end view of the same with the chair. Fig. 3 is an enlarged perspective view of the chair, and Fig. 4 is a side view of the rail.

A and B represent the two parts of which my railroad rail is composed. The inner part A is constructed, as shown, with arch *a*, perpendicular sides *a*<sup>1</sup> *a*<sup>1</sup>, and side extensions *a*<sup>2</sup> *a*<sup>2</sup>, forming the base of the rail. The under side of the base *a*<sup>2</sup> is inclined, as shown, so that the rail rests on the outer edges and yields for any pressure upon it. The outer part or cap E is also formed in the shape of an arch, *b*, with perpendicular sides *b*<sup>1</sup> *b*<sup>1</sup> fitting over the arch and sides of the part A. The lower edge of the sides *b*<sup>1</sup> *b*<sup>1</sup> are rounded and inserted into grooves formed at the joint of sides *a*<sup>1</sup> *a*<sup>1</sup> and base *a*<sup>2</sup> of the inner part A of the rail. This part A thus supports the cap B, and they are so placed as to break joints, or, in other words, one part will overlap the ends of the other, forming a continuous rail. The two parts are joined together by double-headed clamp-bolts C with spring-washers D D. These washers, as well as the parts of the rail, have elongated slots for the passage of the flattened head of the bolt, and after the bolt has been inserted it is turned so as to stand across the slot of the washer, which

effectually holds the parts of the rail together without any screws or nuts, thus avoiding or obviating the liability of coming apart. E represents the railroad chair with a central arch, *e*, short perpendicular sides *e*<sup>1</sup> *e*<sup>1</sup>, horizontal base *e*<sup>2</sup>, and upward-projecting flanges *e*<sup>3</sup> at the outer edges of the base *e*<sup>2</sup>. It will be noticed in Fig. 2 that the base of the rail proper does not rest solidly upon the base of the chair, but only at the outer edges bearing against the flanges *e*<sup>3</sup>; thus when the rail yields to any pressure upon it the chair spreads slightly.

In the manufacture of railroad rails the leading objects kept in view have been to support the joints and secure vertical stiffness. To effect the former the joints have been encumbered with chairs, brackets, and fish-plates; and as to the latter, the practice is to make them broader and heavier, or to make a heavy steel rail. But all these plans are more or less defective and fail to secure the desired result.

My plan is to make the rail in two parts, so as to make it light and the metal worked in small bulk. By this means it can be more thoroughly worked and refined in the process of rolling. I also avoid extreme expansion and contraction, secure a more perfect joint longitudinally, and close the parts firmly together laterally. The parts are constructed in the form of an arch to enable me to lap the parts so as to effectually support the joints and to renew the upper part, when desired, and also to put the metal in the form which shall afford the greatest strength, and to secure an air-passage in the hollow of the rail whereby extreme expansion and contraction are avoided. This form also affords stiffness in the parts between the head and the base of the rail, and further makes the whole rail elastic, and provides especially for the elasticity in the base and chair. Stiffness of the rail is not secured by making it heavy and in one piece. On the contrary, some of the heaviest have proved to be weak and have gone to pieces sooner than some very light ones; and too much iron, and that necessarily of poor quality, has been put into the head. The head of my rail is light and elastic, and is reversible, so as to be turned if it becomes too much worn on one side. The weight is supported by four perpendicular pieces. The effect from cold and heat will necessarily be less upon a light than upon a heavy body, and my rail being in two parts, thin, and

with an air-passage in the interior, the effect longitudinally must be very trifling, and laterally no inconvenience can result from it on account of the parts yielding and the cooling feature inside of the rail.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A railroad rail made in two parts, A and B, each in arch form, with perpendicular sides, forming an interior air-passage, and the inner part A having a base inclined on its under side, all sub-

stantially in the manner and for the purposes herein set forth.

2. The chair E, constructed as described, with arch  $e$ , perpendicular sides  $e^1$ , horizontal base  $e^2$ , and flanges  $e^3$ , all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of July, 1871.

A. McKENNEY.

Witnesses:

C. L. EVERT,

A. N. MARR.