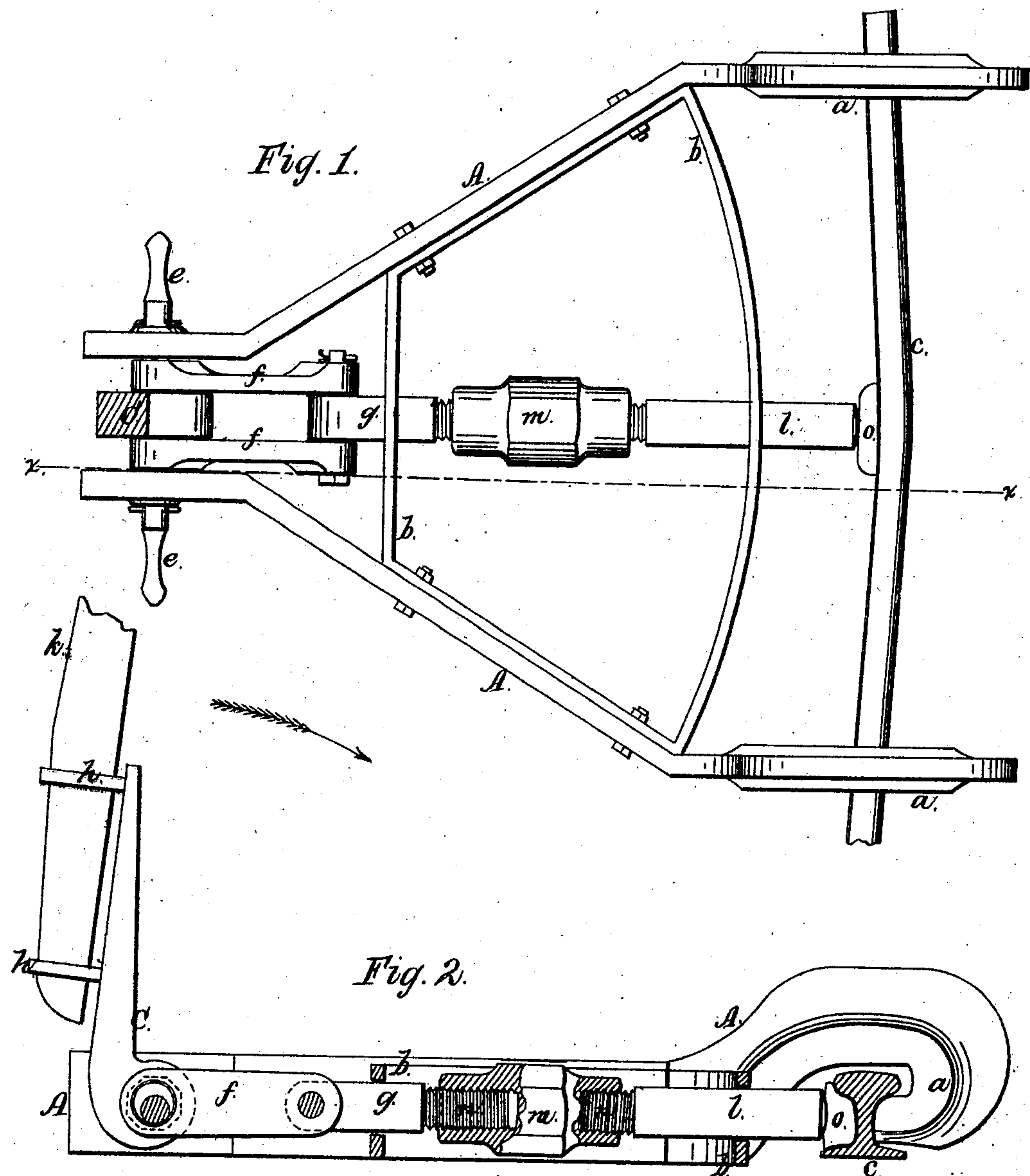


No. 96,684..

PATENTED NOV. 9, 1869.

G. D. EMERSON.  
DEVICE FOR BENDING RAILROAD RAILS.



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*Witnesses.*

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GEORGE D. EMERSON, OF CALUMET, MICHIGAN.

Letters Patent No. 96,684, dated November 9, 1869.

## IMPROVED DEVICE FOR BENDING RAILROAD-RAILS.

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

To all whom it may concern:

Be it known that I, GEORGE D. EMERSON, of Calumet, in the county of Houghton, and State of Michigan, have invented a certain new and improved Device for Bending Railroad-Rails; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a plan view of my improved device.

Figure 2, a section of the same in the plane of line  $x x$ , fig. 1.

Figure 3, a view of the eccentric bearings removed.

Like letters of reference indicate corresponding parts in all of the figures.

The purpose for which my invention is designed is for bending or curving railroad-rails, for adapting them to the required curve of the track; and it is also applicable for straightening rails where they have been sprung into irregular form by undue strain and wear.

My invention consists in the employment of the eccentric lever-device for producing the pressure, and the adjusting-device for gauging and extending the punch or press-bar against the rail at each alternate stroke of the lever, the said parts being mounted in the main triangular frame, having an intermediate or secondary stiffening-frame, and the hooked bearings or jaws for holding the rail, substantially as hereinafter described.

In the accompanying drawings—

A A indicate the main frame, which is preferably made of the triangular form shown, and is provided with an internal or secondary frame,  $b$ , bolted or otherwise secured thereto.

Hooked bearings or jaws,  $a a$ , are formed in the frame, on opposite sides, for the rails  $c c$  to rest against, while the pressure for bending the rail is applied midway between these bearings, by the means presently to be described.

I employ an eccentric roller, B, fig. 3, the same having bearings  $e e$ , that extend through the main frame on opposite sides, and serve as handles.

Upon the eccentric portions  $d d$ , of the said roller, rest the ends of connecting-links or arms,  $f f$ , while the opposite ends of the links are pivoted to the sliding bar  $g$ , that rests loosely through the cross-bar of the secondary frame  $b$ .

On the central portion  $i$ , of the roller B, is rigidly secured a lever-shank, C. This shank is formed with loops or bearings,  $h h$ , in which rests a removable lever-bar,  $k$ , of any desired length to procure the necessary purchase.

The sliding bar  $g$  is connected with the sliding punch or press-bar  $l$ , through which the pressure is

transmitted for bending the rail, by means of an intermediate right and left-hand adjusting-nut,  $m$ , which receives the screws  $n n$  of the bars  $g l$ .

I prefer to insert a metallic block,  $o$ , between the end of the bar  $l$  and the rail, which renders the bending of the rail more uniform, and prevents abrasion.

It may be preferred to employ, instead of the adjusting-nut  $m$ , one or more wedges, to be inserted between the ends of the press-bar  $l$  and block  $o$ , at each alternate stroke of the lever, at the time the press-bar is drawn back to repeat the operation, in which case the bars  $g l$  would be made in a single piece.

When the rail is placed in position, the block  $o$  is inserted, and the press-bar  $l$  is moved up against it, by means of the adjusting-nut  $m$ . By then forcing the lever down in the direction shown by the arrow, fig. 2, the motion imparted by the eccentric roller to the press-bar gives the rail the desired bend at the point acted on. It is then moved along a suitable distance, and the operation repeated.

The degree of bend or curve thus imparted to the rail may be increased by adjusting the bar  $l$ , by means of the nut  $m$ , to a greater length, and repeating the operation as often as may be required.

It is obvious that the curve produced may be increased or diminished by varying the stroke of the lever.

The important advantages derived from this device are obvious. Heretofore, the process of bending railroad-rails has been principally by the use of sledges, an operation both laborious and slow.

My improved device is of very simple construction, and, besides possessing great power, which is required for the purpose, it operates rapidly, and produces a more even and uniform curve than when sledges are employed.

What I claim as my invention, is—

1. The employment of the eccentric roller B and lever C, in combination with the connecting-links or arms  $f f$ , press-bars  $g l$ , and screw-sleeve  $m$ , or equivalents, substantially as herein set forth.

2. The main triangular frame A, the same having the hooked bearings or jaws  $a a$ , and the internal or secondary stiffening-frame  $b$ , in combination with the press-bar and devices for operating the same, substantially as described.

In witness whereof, I have hereunto signed my name, in the presence of two subscribing witnesses.

GEO. D. EMERSON.

Witnesses:

J. A. DAVIS,

KATE N. JONES.