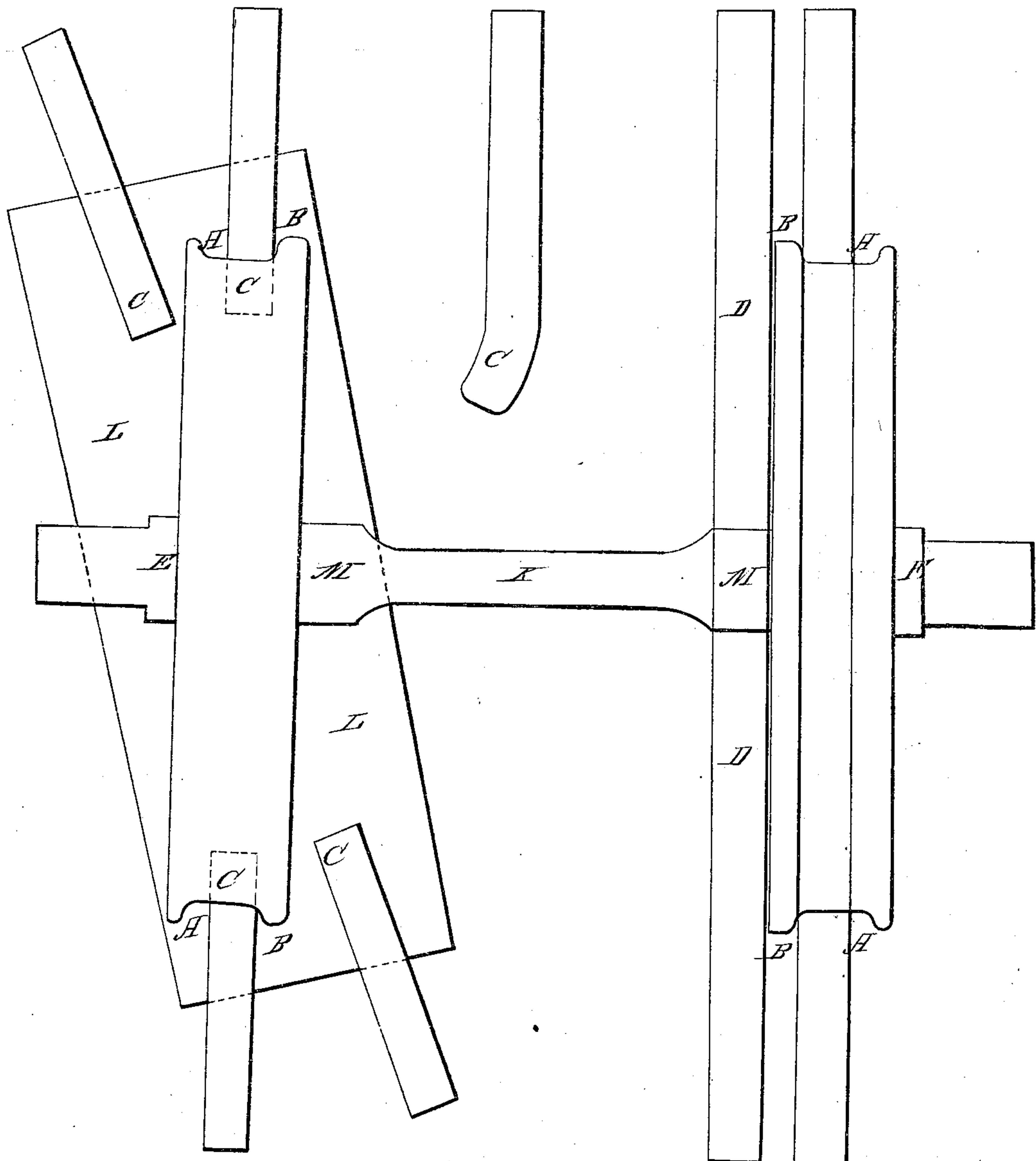


Sheet 1, 2 Sheets.

L. Ball.

Preventing Cars from Jumping Tracks.
N^o 20,614. Patented Jun. 22, 1858.



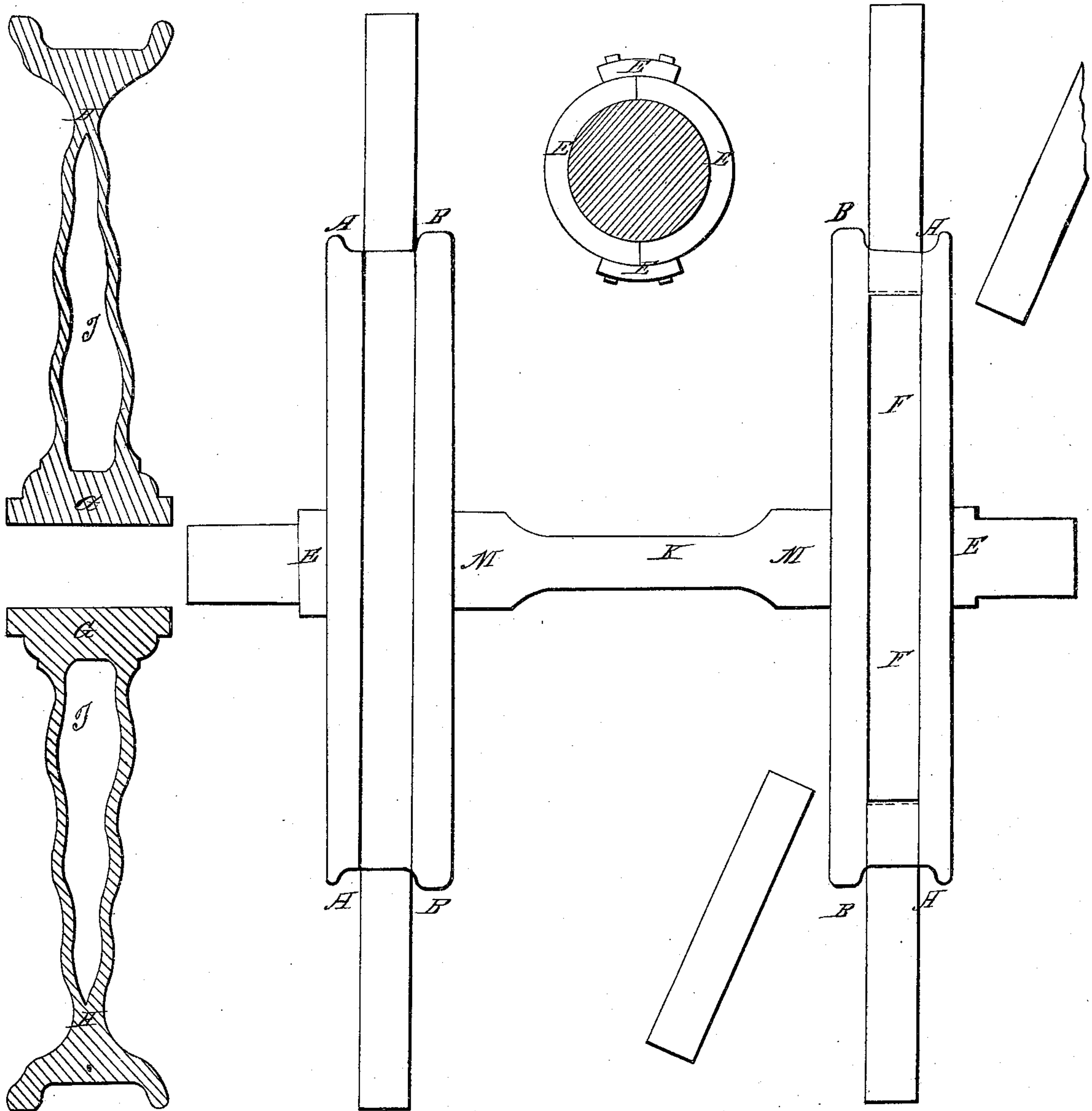
Witnesses:

G. F. H. Linn
J. B. B. B. B.

Inventor.

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L. Ball.
Preventing Cars from Jumping Tracks.
Nº 20,614. *Patented Jun. 23, 1858.*



Witnesses:

R. F. H. Chace
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Inventor:

Leverett Ball

UNITED STATES PATENT OFFICE.

L. BALL, OF AUBURN, NEW YORK.

PREVENTING CARS FROM RUNNING OFF THE TRACK.

Specification of Letters Patent No. 20,614, dated June 22, 1858.

To all whom it may concern:

Be it known that I, LEVERETT BALL, of Auburn, in the county of Cayuga and State of New York, have invented a new and Improved Mode of Preventing Car-Wheels from Running off the Track; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in providing one strong flange upon rail road car wheels with a flat surface on the edge, and a wide space at the bearing of the double flanged rail road car wheels between the flange added and the rail, a plate of iron placed into the line of the rail road where one rail crosses another, a rail in addition placed alongside of the track opposite the crossing, and a band or clasp of wrought iron placed into a groove around the axletree. The strong or working flange can work on the outside of the rails by reversing the wheel on the axletree.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

The double flanged rail road car wheels are of sufficient space between the flange added and the rail that will prevent friction and when the flange added is brought to work against the rails the opposite stout flange strikes and works upon the top of the opposite rail, and it being higher than the other, the tendency is that one or two revolutions of the wheels will be to bring them back to their proper place at letter A. One inch flat surface more or less on the outer edge of the inside or working flange, the corners rounded over, and a hollow thence around opposite the curve of the flange at the bearing, creating a strong and safe flange, for the wheels to work upon—letter B.

Each way from where one rail in the line of the rail road crosses another rail the rails are taken off sufficient distance apart to admit the outside or added flange, to pass through between them, and plates of iron about one foot wide extending through lengthwise past the ends of the rails, letter L, and each end of the rails is placed into grooves made into the ends of the plates of iron and the ends of the rails are bolted firmly to the ends of the plates of iron, the distance from the top of the rail that the flanges project from the

bearing part of the wheels, so that when the bearing part of the wheels leaves the ends of the rails the inside or strong working flange bears and passes over upon the plates of iron and effects the crossing of the rails of the road by the wheels, until the bearing part of the wheels comes upon and works upon the opposite ends of the rails. The ends of the rails are bent down C, C, C, C. A common rail is placed firmly at the inside of the opposite rail from the crossing or a sufficient distance from it for a free passage of the working or stout flanges to pass through between the two rails, which is to guide the bearing part of the opposite wheels over the plates of iron from off one end of the rails correctly onto the other end of the rail—letter D. A band or clasp of wrought iron placed into a groove around in the axletree at the outside of the wheel, the ends bolted together by a plate of iron lapping the ends and projecting from the axletree to prevent the wheels from pressing off the axletree when the extra flange that is added to the wheels works against the rail—letter E.

The swivel rail with a pivot in the center can be used at some of the crossings of the rails in the road between the stations or where the cars generally pass over with full speed—letter F—thereby securing from all danger the practicable use of the double flanged rail road car wheels upon rail roads. The double flanged wheels heretofore used were not designed like mine to meet the emergencies of the case as above described and they were entirely different from those of my invention, having no practicable effect, whatever. My form of double flanged rail road wheels is about $3\frac{1}{2}$ feet in diameter more or less. The opening for the axletree is 5 inches in diameter, $1\frac{3}{8}$ inches around at the opening. The wheels are eight inches thick by a quarter around molding with two $3\frac{3}{8}$ inch squares extending one on each side around at the corners of said thickness, thence on a straight line intersecting each other making the hub part around the opening $2\frac{3}{8}$ inches thick. The inside or working flanges each project $1\frac{3}{4}$ inches with one inch flat surface on the outer edge. The outside, or flanges added, has $1\frac{1}{4}$ inches projection, and of the ordinary form. The thick working flange is rounded over at the corner on the outside hollows, and is rounded directly opposite the curve of the flange on the inside at the bearing part, thus making a strong

flange sufficiently safe to work upon. Near the center of the wheels three inches from the bearing part—letter H—the wheels are 1½ inches thick. Four inches from the bearing is the junction of two plates of iron, extending one on each side of the wheels to the said round moldings around each side of the hub part. Each of the plates of iron is formed into three nearly equal rounds and four nearly equal hollows each hollow about ⅝ of an inch curve from a straight line and are curved onto the hub part from the inside, forming the wheels hollow—letter I—plates ⅝ inch thick. My form of axletree to be used with my invention is to fit any gage of road in length. Around the axletree at the outside of the wheels is a groove, into which is fitted a clasp with two sections projecting from the axletree, and are fastened together by a plate lapping the joints and is riveted to the sections—letter E. About three inches from the inside of the place for

the wheels the axletree is curved down to a suitable size for strength, to about four inches—letter K. On the ends of the axletrees outside of the clasp is the journal part of the axletree, five inches in diameter. Three inches back of the place for the wheels the axletree is 5½ inches in diameter—letter M.

What I claim and desire to secure by Letters Patent of the United States, is,

The double flange rail road car wheels, with the broad space A between the flanges, and the strong flat edge flanges on car wheels B, in combination with the iron plate L, the guide rail D, the clasp E, swivel rail F, and the ends of the rails C, C, C, C, the whole being constructed and arranged substantially as set forth.

LEVERETT BALL.

Witnesses:

G. F. H. LAWRENCE,
F. I. MURPHY.