No. 75,206. PATENTED MAR. 3, 1868.

E. R. SHEPARD.
RAIL FOR RAILWAYS.

FIG. 1.

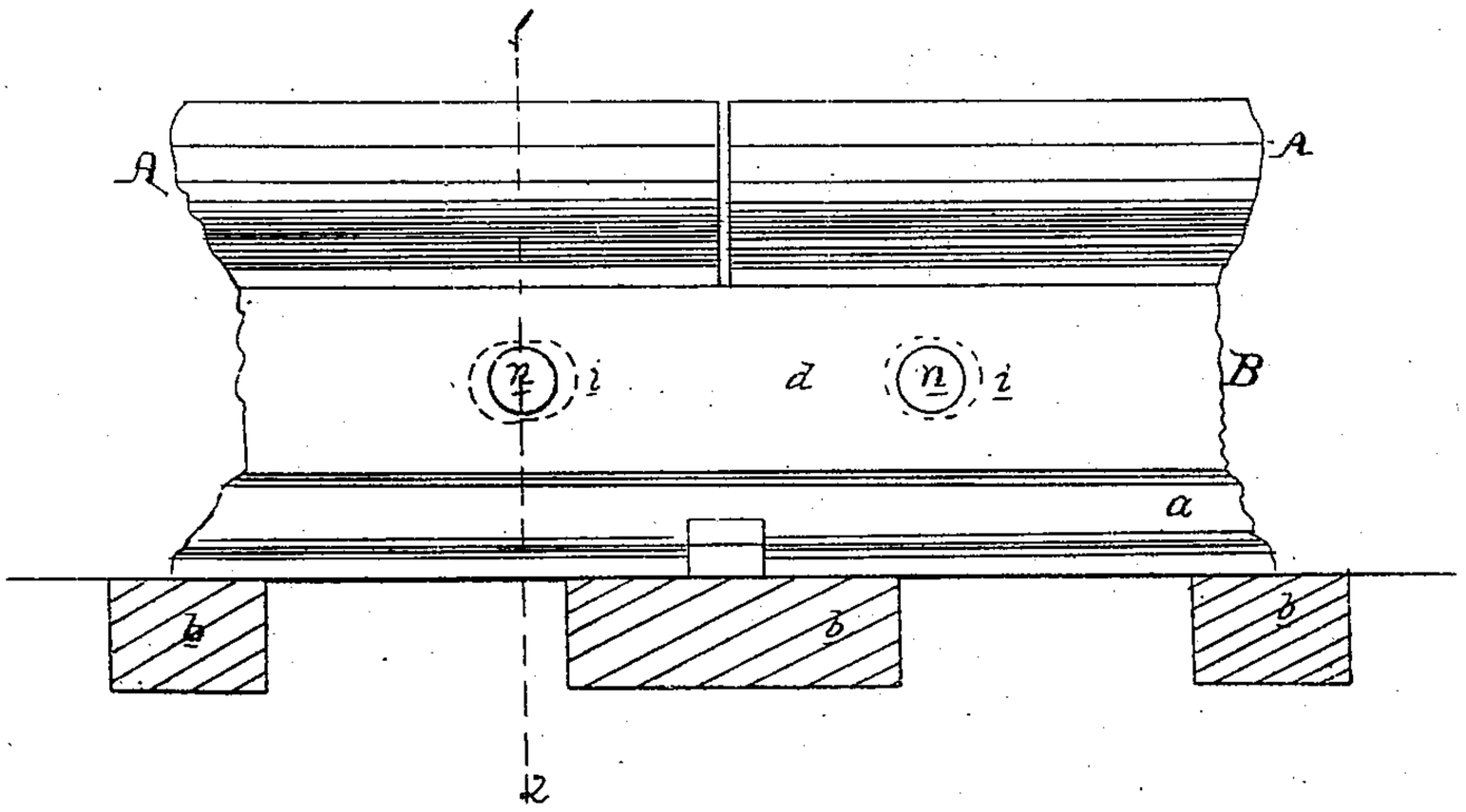


FIG. 3.

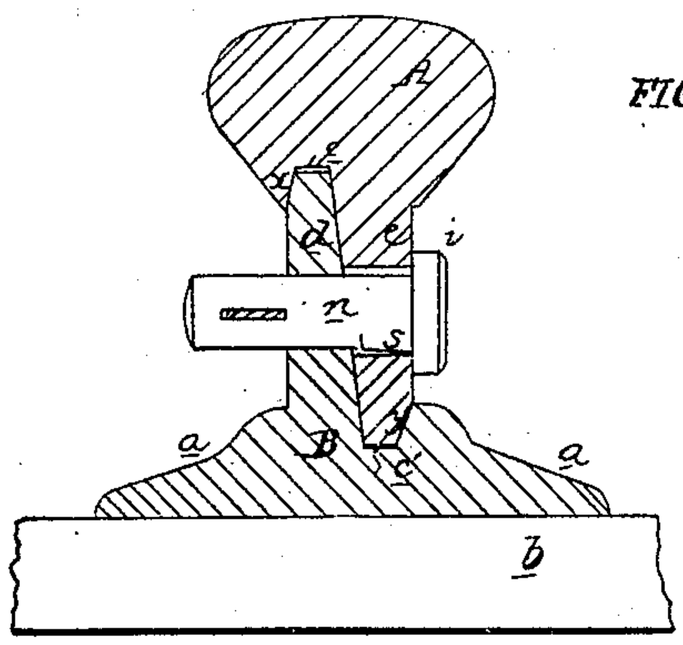
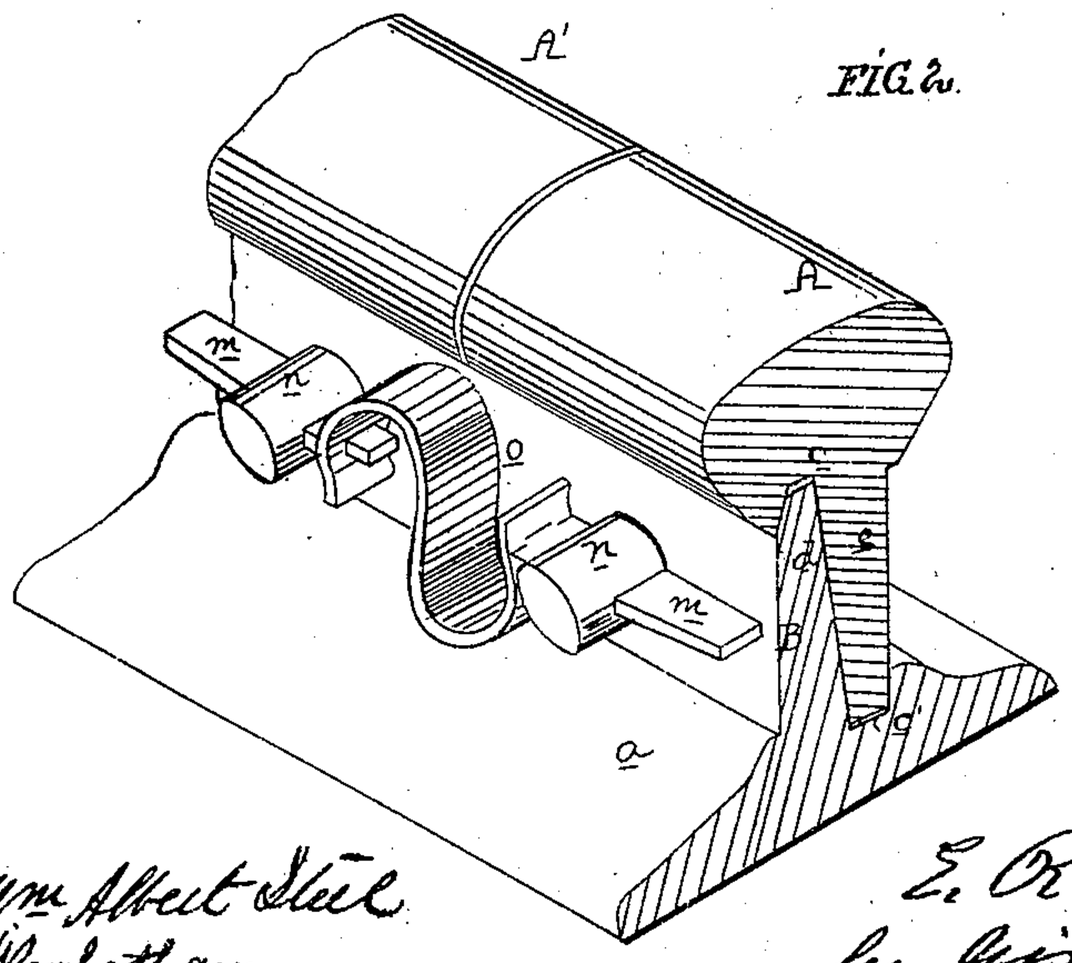


FIG. 2.



Witnesses { Wm Albert Steele
Howbotham

E. R. Shepard
by his Atty
H. Howbotham

United States Patent Office.

EDWIN R. SHEPARD, OF SCRANTON, PENNSYLVANIA.

Letters Patent No. 75,206, *dated March* 3, 1868.

IMPROVEMENT IN RAILS FOR RAILWAYS.

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, EDWIN R. SHEPARD, of Scranton, Luzerne county, Pennsylvania, have invented an Improved Rail for Railroads; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention consists of a rail composed of an upper and lower portion fitted and secured together in the manner described hereafter, so as to be self-tightening under pressure, and thereby so firmly bound together as to be equivalent to a solid rail, while the upper portion may be made of steel, and the lower portion of inferior iron, the rail thus possessing all the durable properties of but being much less expensive than a steel rail.

In order to enable others skilled in the art to make and apply my invention, I will now proceed to describe its construction, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a side view of a portion of my improved rail.

Figure 2, a sectional perspective view; and

Figure 3, a transverse section on the line 1–2, fig. 1.

The rail consists of the upper portion A of steel, and the lower portion B of iron, the flanges *a* of the latter, which are similar to those of ordinary rails, being spiked in the usual manner to the sleepers *b b*. Forming part of the portion B of the rail is a longitudinal rib, *d*, which is bevelled at the outside, near the upper edge, as shown at *x* in the drawing, and is adapted to a groove, *c*, in the upper portion A of the rail, a longitudinal rib, *e*, on the latter being bevelled near its lower edge, *y*, and fitting into a groove, *c'*, in the lower portion B of the rail. When the rails are laid, the ends of the bars which compose the upper portion meet or nearly meet at points midway or thereabouts between the opposite ends of the bars which compose the lower portions of the rail, and near each end of each upper bar A is an elongated opening or slot, *i*, through which and through a circular opening in the lower portion B passes a bolt, *n*. Through a slot in the shank of each bolt passes a key, *m*, a projection on the widest end of which fits an opening in one end of an S-shaped spring, *o*, and near the head of each bolt is formed a flat projection, *s*, (fig. 3,) which is inclined on the under side, as seen in fig. 3, and bears against the lower edge of the elongated opening in the ribe *e* of the portion A of the rail, so that when under pressure the parts are forced together, or are brought together, by wear, or any other cause, and the bolt is loosened, the action of the spring upon the wedge or key will immediately cause the bolt to be drawn on, and the face of the projection or incline *s* is maintained in contact with the lower side of the elongated hole in the upper portion of the rail, thereby preventing the ends of the said upper portion of the rail, where they meet, from working up and down, and thus rendering the track uneven, as well as preventing noise, wear, and splitting or upsetting of the ends of the rails. Owing to the wedge-like form of the ribs *d e*, where they fit the grooves *c c'*, the tendency of the pressure upon the upper portion of the rails is to force the ribs together and render the two bars as solid as a single rail, and prevent the entrance between the ribs of dust and moisture.

It will be observed that the edge of the rib of neither portion of the rail extends to the end of the recess, there being a space between the bottom of the recess and end of the rib, so that the two portions of the rail are always self-tightening under pressure. The openings *i* are of such a length that the two portions A B of the rails may expand and contract freely independently of each other, while the spring *o*, acting on the keys, tends to tighten the bolts. While the two portions of the rail have a continuous tendency to be wedged together under the pressure of the car-wheels, they may be readily detached from each other after the withdrawal of the bolts when it becomes necessary. The upper portion A of the rail may be made of superior wrought iron instead of steel, and the lower portion of inferior iron.

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

An inclined and wedge-keyed bolt, constructed substantially as described, in combination with a compound rail, as and for the purpose set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN R. SHEPARD.

Witnesses:

CHARLES E. FOSTER,

JOHN WHITE.