F. B. NEAL.

RAIL JOINT.

APPLICATION FILED MAR. 21, 1908.

915,998. Patented Mar. 23, 1909.

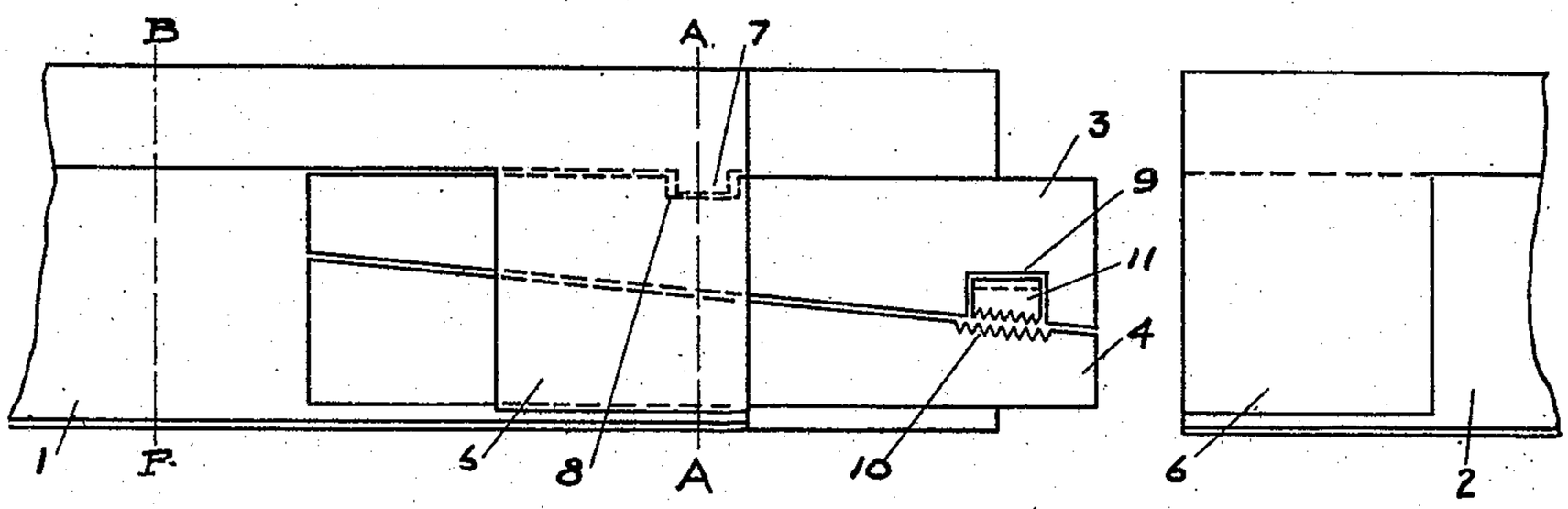

FIG. 1.

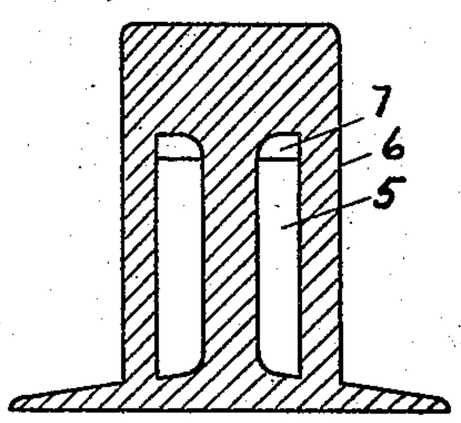

FIG. 2.

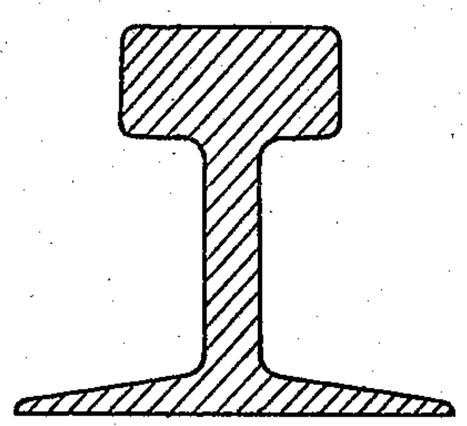

FIG. 3

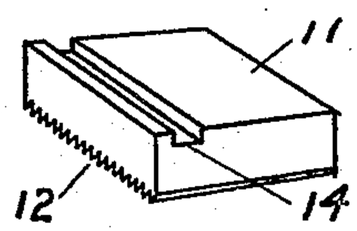

FIG. 4.

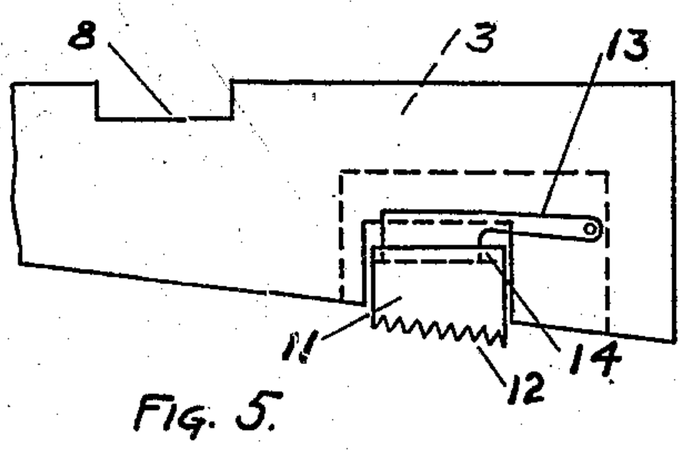

FIG. 5.

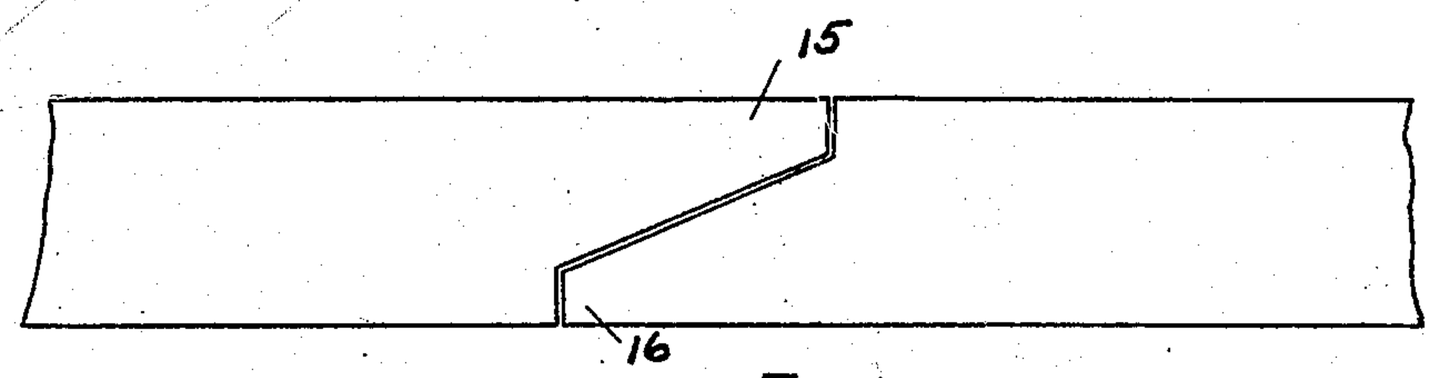

FIG. 6.

WITNESSES:

F. C. Spear

H. Lyman Ford.

INVENTOR

Frank B. Neal

BY

George W. Upton

ATTORNEY

UNITED STATES PATENT OFFICE.

FRANK B. NEAL, OF WARREN, OHIO.

RAIL-JOINT.

No. 915,998. Specification of Letters Patent. Patented March 23, 1909.

Application filed March 21, 1908. Serial No. 422,571.

To all whom it may concern:

Be it known that I, FRANK B. NEAL, a citizen of the United States, residing at Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

My invention relates to improvements in locks for structural and rail joints in which a continuous length is made by uniting a plurality of pieces at their respective ends; and the objects of my improvements are: first, to so connect abutting ends of structural beams, railroad rails and the like as to strengthen the length at the junction: second, to decrease the labor and cost of time and material by providing simple and cheap connecting means: and third, to provide for locking said connecting parts easily and quickly in such manner that they can be readily unlocked without possible destruction of the connecting and locking parts. I attain these objects by the mechanism illustrated in the accompanying drawing, in which,

Figure 1, is a side elevation; Fig. 2, a transverse section at the line A—A of Fig. 1; Fig. 3, a transverse section at the line B—B; Fig. 4, a perspective view of the lock block; Fig. 5; a sectional view of the same in position and locked by a key, and Fig. 6, a top view of the connected lengths without the connecting element.

Referring to the drawings, 1 designates a rail or stringer; 2 the cut away and beveled meeting end of an adjoining rail or stringer; and 3 and 4 two wedge-like binding plates having correspondingly inclined or beveled meeting faces. I may employ but one pair of binding plates, or two pair may be used if desired by arranging one pair on each side of the central web of the rail or stringer. To accommodate these binding plates, and to add to the strength of the rail or stringer, I form in the latter, on either side of the web, chambers or cavities 5 which are closed at the outside by reinforcing walls 6. Each rail or stringer, within each cavity, has a lug 7 depending from its top to fit in depression 8 of the binding plate 3, such depression being of sufficient size to permit of expansion and contraction. The reinforcing walls 6 are welded with and form part of the rail or stringer.

The binding plate 3 is formed with a cut-out 9, and opposite thereto the binding plate 4 has a series of teeth or serrations 10. These two binding plates are locked together by a lock block 11 having teeth or serrations 12 for engaging those of the binding plate 4. This locking block is inserted after the binding plates have been caused to fill the respective cavities 5, when the cut-out 9 will be above teeth 10. A spring arm 13, mounted in the binding plate 3, is designed to engage with a groove 14 in block 11 to prevent lateral displacement of the latter and thereby key the block in position.

It will be seen by those skilled in the art, that by the above described mechanism, I provide rails or stringers that are not weakened by holes through them: that by cutting their ends as shown at 15 and 16, I provide a continuous supporting surface: that by forming the reinforcements 6 with the rails or stringers, I make them stronger at the joining parts than elsewhere: that the insertion of the binding plates 3 and 4 which fill the entire space 5, I add to the supporting strength: that the lock block 11 absolutely prevents displacement of the binding plates 3 and 4, and that the spring 13 or its equivalent, absolutely prevents the displacement of the lock block 11, and also permits of its easy removal when change or repair is desired.

I am aware that the reinforcements 6, are old, and that the wedges have been used, and I do not claim either of said elements *per se;* but

I claim:

1. In combination with rails or stringers having their adjacent ends formed to overlap and also having corresponding cavities, binding plates for fitting in said cavities and locking the rails or stringers together, means integral with one rail or stringer for securing one binding plate thereof, and means for securely locking the two binding plates to each other.

2. In combination with rails or stringers having their adjacent ends formed to overlap and also having corresponding cavities, one of said rails or stringers having a depending lug, binding plates for locking said rails or stringers together, one of said binding plates having a depression to take in said lug, and means for locking the two binding plates together.

3. In combination with a rail or stringer having a central web and an outer reinforcing wall, a chamber or cavity being formed between said wall and web, and a lug depending from the top of said cavity, two

binding plates designed to fit in said cavity, one binding plate having a depression to take in said lug, and means for locking the two binding plates together.

4. In combination with rails or stringers having a depending lug, two binding plates, one having a depression to take in said lug and also having a cut-out, the other binding plate having a series of teeth or serrations in line with said cut-out, and a lock block fitted in said cut-out and designed to engage said teeth or serrations.

5. In combination with rails or stringers having a depending lug, two binding plates, one having a depression to take in said lug and also having a cut-out, the other binding plate having a series of teeth or serrations in line with said cut-out, a lock block fitted in said cut-out and designed to engage said teeth or serrations, and a key for locking said lock block.

6. In combination with rails or stringers having a depending lug, two binding plates, one having a depression to take in said lug and also having a cut-out, the other binding plate having a series of teeth or serrations in line with said cut-out, a lock block fitted in said cut-out and designed to engage said teeth or serrations, said lock block having a groove therein, and a spring arm for fitting in said groove.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK B. NEAL.

Witnesses:
GEO. M. SMITH,
DORA A. KALE.