W. R. HAUGHTON.

CAST IRON SLEEPER.

APPLICATION FILED OCT. 30, 1908.

944,135.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

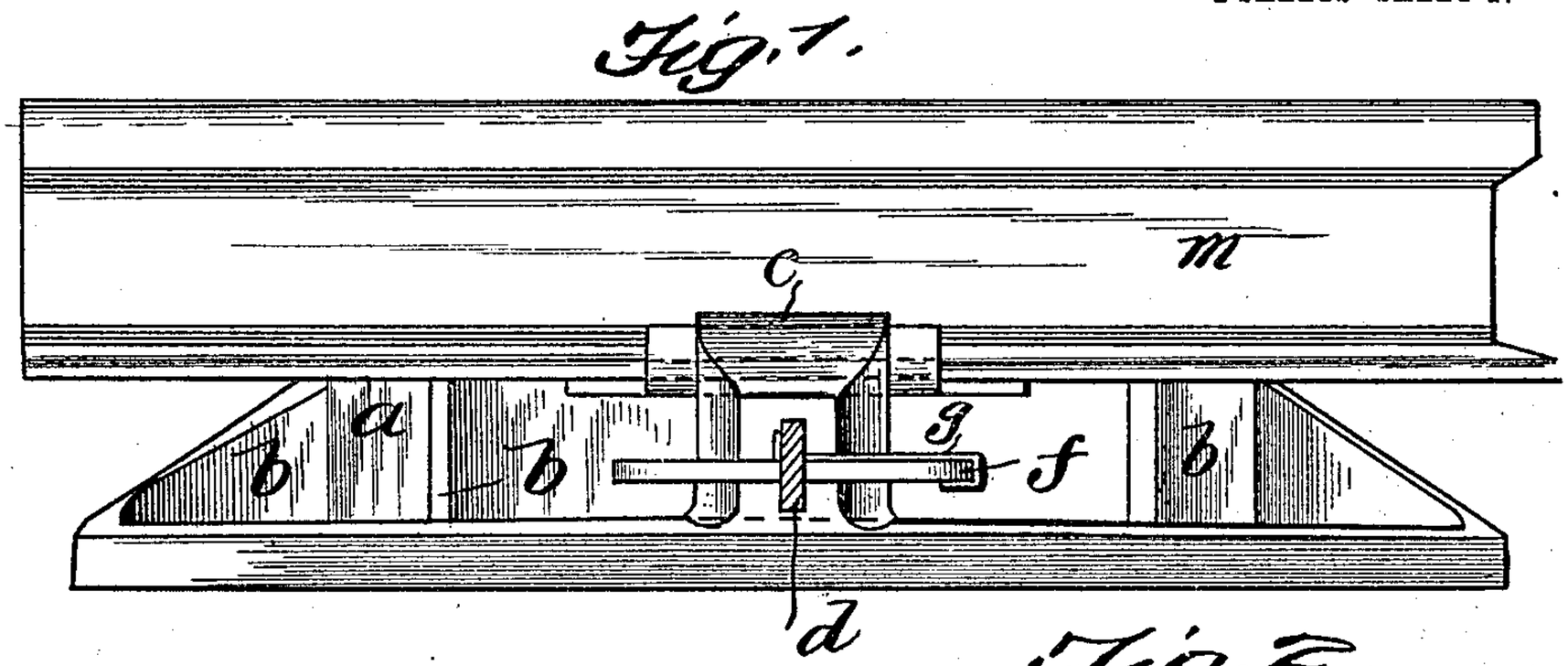


Fig. 2.

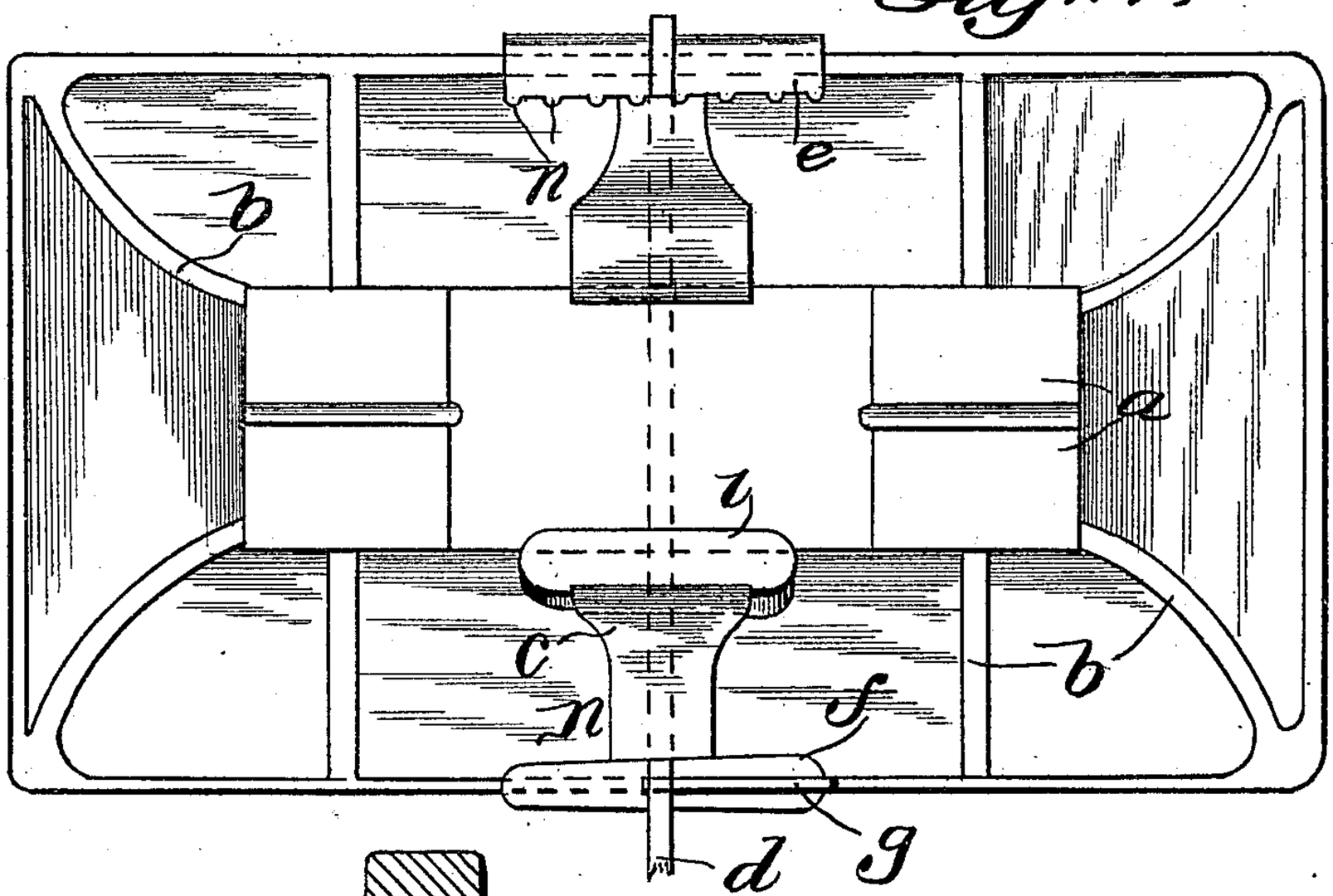
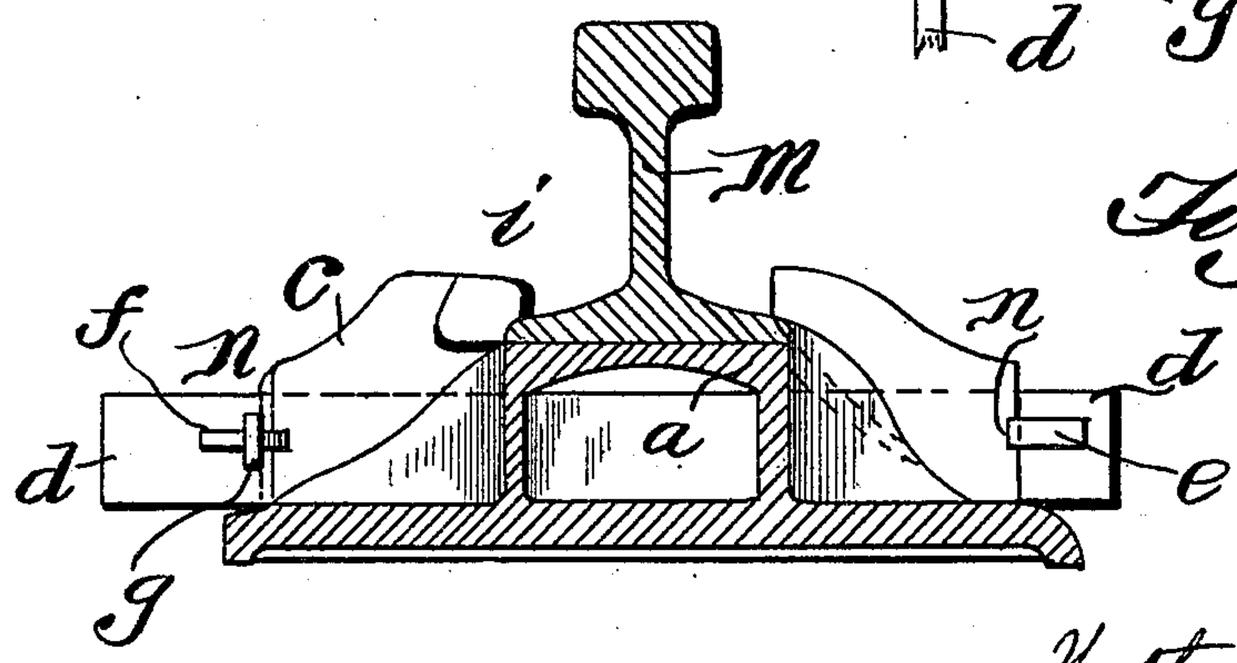


Fig. 3.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

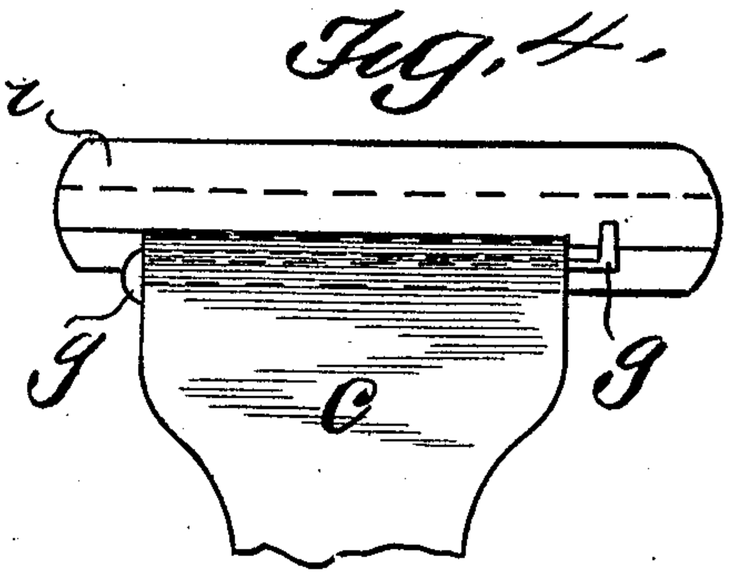


Fig. 4a

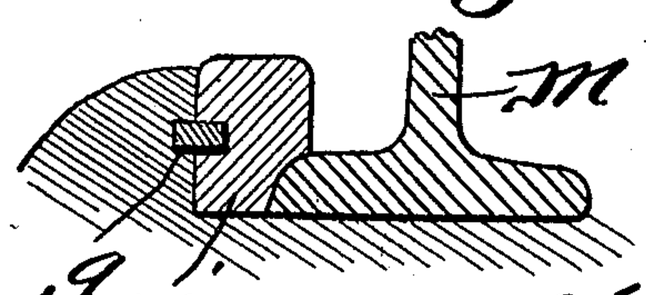


Fig. 5.

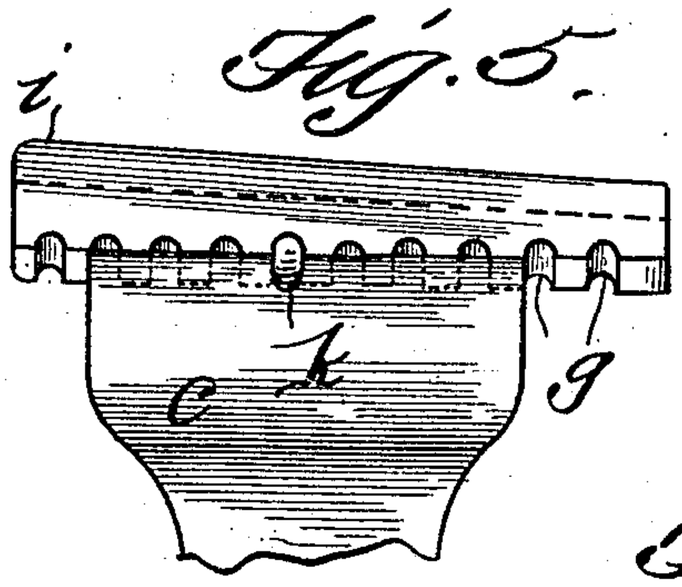


Fig. 5a

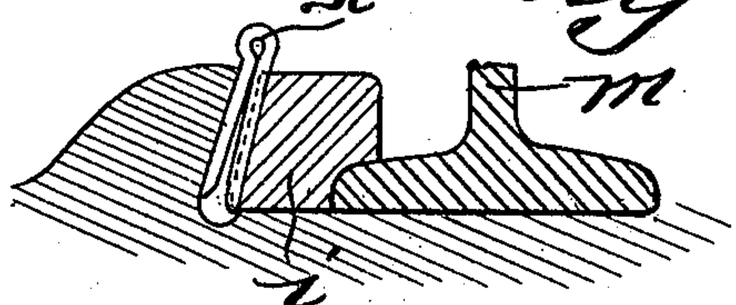


Fig. 6.

Fig. 7.

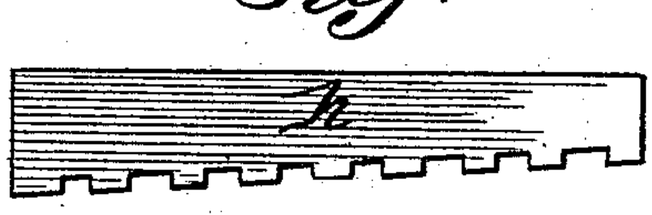


Fig. 8.

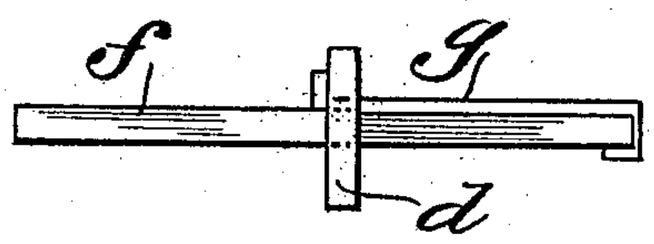
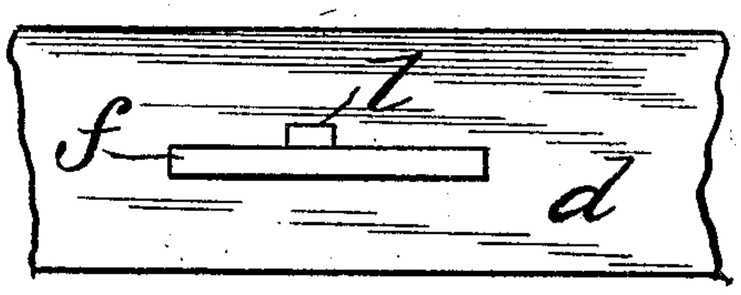


Fig. 9.



Witnesses

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UNITED STATES PATENT OFFICE.

WALTER RALEIGH HAUGHTON, OF SEALDAH, CALCUTTA, INDIA.

CAST-IRON SLEEPER.

944,135. Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed October 30, 1908. Serial No. 460,372.

To all whom it may concern:

Be it known that I, WALTER RALEIGH HAUGHTON, a citizen of the Indian Empire, and resident of Eastern Bengal State Railway, Sealdah, Calcutta, India, have invented certain new and useful Improvements in and Relating to Cast-Iron Sleepers, of which the following is a specification, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in and connected with cast iron sleepers for rails and keys and cotters for same.

My invention will be most easily understood with reference to the accompanying drawings which give various views of the invention and details connected therewith.

Figure 1 is a side elevation with the tie bar in vertical section. Fig. 2 is a top plan. Fig. 3 is a vertical transverse section. Fig. 4 is an enlarged detail in elevation showing the key and clip. Fig. 4ª is a detail in vertical section. Fig. 5 is a detail of modified form. Fig. 5ª is a vertical sectional detail of the form shown in Fig. 5. Fig. 6 is a view of the cotter. Fig. 7 is a view of a modified form of key. Fig. 8 is a detail of a cotter and an adjustable clip applied to a tie bar. Fig. 9 is a side elevation thereof.

Like letters of reference indicate like parts in the several views.

The body of the sleeper is formed in the shape of a box girder whose longitudinal axis is parallel to the track and on which the rail rests on two seats as shown in Figs. 1 and 2 in the drawing. This box girder form, with its two seats *a*, *a*, increases the moment of resistance of the sleeper and serves to distribute the load equally all over the base and makes the sleeper extremely strong. The box portion of the sleeper is also strengthened by adding gussets *b*, *b*, to the sides and ends to help the distribution of the loads over the base and to prevent the corners and edges of the base being broken off when being handled.

The inner jaw *c* for holding the rail may be plain or notched as hereinafter noted.

The tie-bar bearings *n n* are placed as far apart as possible across the sleeper so that in packing the sleeper, the tie-bar *d* by its long bearings keeps the sleeper level and prevents the rail *m* canting inward or outward which canting would alter the gage.

One cotter *e*, Figs. 2 and 6, which may be placed inside or outside the track is formed with one edge indented or notched. The indentations or notches fit into projections on the sides of the openings or bearings *n n* through which the tie-bar *d* passes. The object of the indentations is to prevent the cotters *e* (of which two forms are shown in Figs. 6 and 7) shifting after the tie-bar is tightened up to the sleeper, and at the same time to permit of adjustment to be made in the gage of the track. On slackening the plain cotter *f* the indented cotter *e* on the opposite side of the sleeper can be moved endwise and thus the gage of the track can be altered and adjusted, and on the plain cotter *f* being driven home the indented cotter *e* is again thereby secured in a fresh position.

One cotter *f* has plain edges, as shown in Figs. 8 and 9, and may be of the split type or may be provided with an adjustable clip *g* to prevent its slacking back or slipping out of the tie-bar *d*. This clip has one end bent at a right angle for a short distance. It may be made of mild steel or other soft metal capable of being easily bent. When the plain cotter *f* is driven home the adjustable clip *g* is inserted between the tie-bar *d* and the cotter *f* through a suitable notch *l* in the tie-bar *d*, the right angled end of the clip *g* being against the tie-bar *d*, the outer end is then clenched over the wide end of the cotter. The clip *g* is made long enough to clench over the wide end of the cotter *f* and lock the cotter in place, however far the end may be from the tie-bar *d*. Or the clips may be made of different lengths so as to suit different positions of the cotter.

The indentation on the cotter *e* may be made to fit on the tie-bar *d* and the plain edge against the sleeper at *n*. The indentations may be made as shown or rectangular or of other suitable shape.

In cast iron sleepers the cotters are usually made split. It is found whenever it is necessary to remove split cotters, once they have been driven and the split ends opened, that it is extremely troublesome and causes great delay to close the opened ends and to remove the cotters. The plain cotter with adjustable clip obviates this difficulty as the clip can be easily removed and replaced. The sleeper may also be used with both cotters with plain edges instead of using the forms of cotters noted in this specification.

The key *i* which secures the rail in the jaw

c may be made with plain sides or it may be made to be fixed in the jaw after being driven tight by forming the bearing faces of the jaw and the key with semi-circular or other shaped notches *j j* on the Vernier system as shown in Fig. 5, the number of notches in the jaw or the key being one more than will be made in the same length or face of the key or the jaw respectively. For example there may be say four notches in the jaw and five in the same length of the key or vice versa. When the key is driven home a split pin *k*, nail or other suitable object may be inserted in the two notches, one in the jaw and one in the key, which come nearest opposite each other. This will prevent the key *i* from slipping out of the jaw *c*. The split pin or nail or other object can be removed when it is required to drive out the key.

The key *i*, Figs. 4 and 4ª, which may be made of any suitable material, may also be secured by setting an adjustable clip *g* similar to that used with the plain cotter *f*, Fig. 8, in suitable grooves or recesses in the key *i* or the jaw *c*. The ends of the key *i* when made of cast metal are rounded. It is found that when square, or almost square, ended cast metal keys are used the keying hammers chip the ends of the keys. The fixing of the key *i* in the above ways will secure the rail *m m* firmly at each sleeper and thus stop creeping.

The drawings show the sleeper as being made for the use of flat footed rails but the sleeper may be modified so as to admit of the use of double headed or bull headed rails or other rails of convenient section or shape.

What I claim and desire to secure by Letters Patent is:—

1. An improved cast iron sleeper for railways comprising a body portion in the form of a box-like girder with its longitudinal axis parallel to the track and formed with a rail seat near each end and strengthening gussets at the sides of said seats.

2. An improved cast iron sleeper for railways comprising a body portion in the form of a box-like girder with its longitudinal axis parallel to the track and formed with a rail seat near each end and strengthening gussets at the sides and ends of said seats.

3. An improved cast iron sleeper for railways comprising a body portion in the form of a box-like girder with its longitudinal axis parallel to the track and formed with a rail seat near each end and strengthening gussets at the sides and ends of said seats, the end gussets extending angularly and from the outer ends of said seats.

4. The combination with a cast iron sleeper for railways having its body portion formed with a rail seat at each end, of jaws for engaging the base of a rail, and tie bar bearings disposed at opposite sides of the sleeper.

5. The combination with a cast iron sleeper for railways having its body portion formed with a rail seat at each end, of jaws for engaging the base of a rail, tie bar bearings disposed at opposite sides of the sleeper, and a tie bar connecting said bearings for keeping the sleeper level and preventing canting of the rail.

6. The combination with a cast iron sleeper for railways having its body portion formed with a rail seat at each end, of jaws for engaging the base of a rail, tie bar bearings disposed at opposite sides of the sleeper, a tie bar connecting said bearings for keeping the sleeper level and preventing canting of the rail, and a key for securing the rail in the inner jaw.

7. The combination with a cast iron sleeper for railways having its body portion formed with a rail seat at each end, of jaws for engaging the base of a rail, tie bar bearings disposed at opposite sides of the sleeper, a tie bar connecting said bearings for keeping the sleeper level and preventing canting of the rail, a key for securing the rail in the inner jaw, said key being notched, and means coöperating with said notches for preventing displacement of the key.

8. The combination with a cast iron sleeper for railways having its body portion formed with a rail seat at each end, of jaws for engaging the base of a rail, tie bar bearings disposed at opposite sides of the sleeper, a tie bar connecting said bearings for keeping the sleeper level and preventing canting of the rail, a key for securing the rail in the inner jaw, said key being notched, means for coöperating with said notches for preventing displacement of the key, and an adjustable clip coöperating with said key.

In witness whereof I have hereunto set my hand in presence of two witnesses.

WALTER RALEIGH HAUGHTON.

Witnesses:
WM. H. MICHAEL,
JOGESH CHUNDER BOSE.