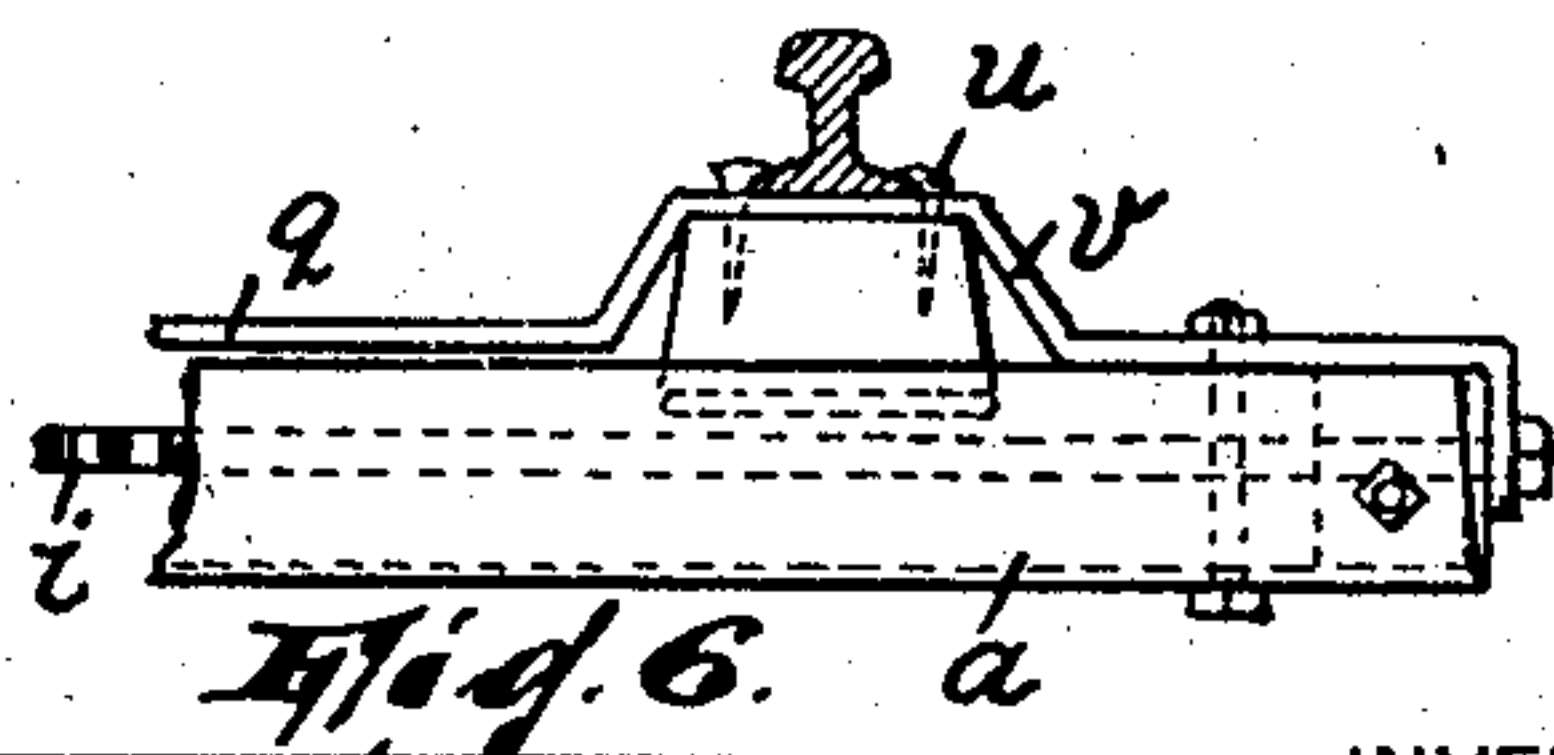
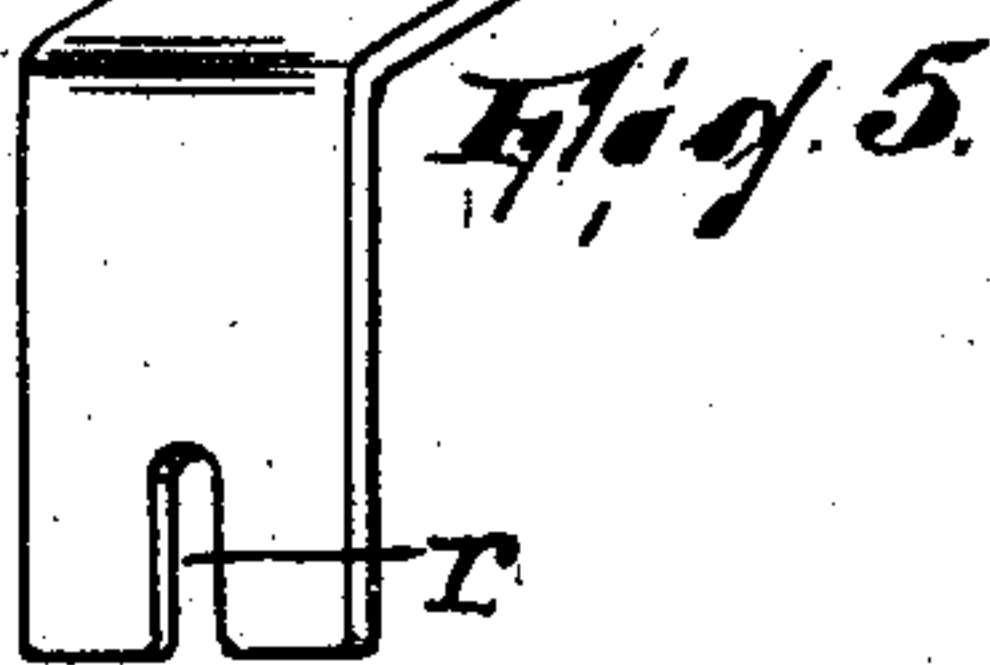
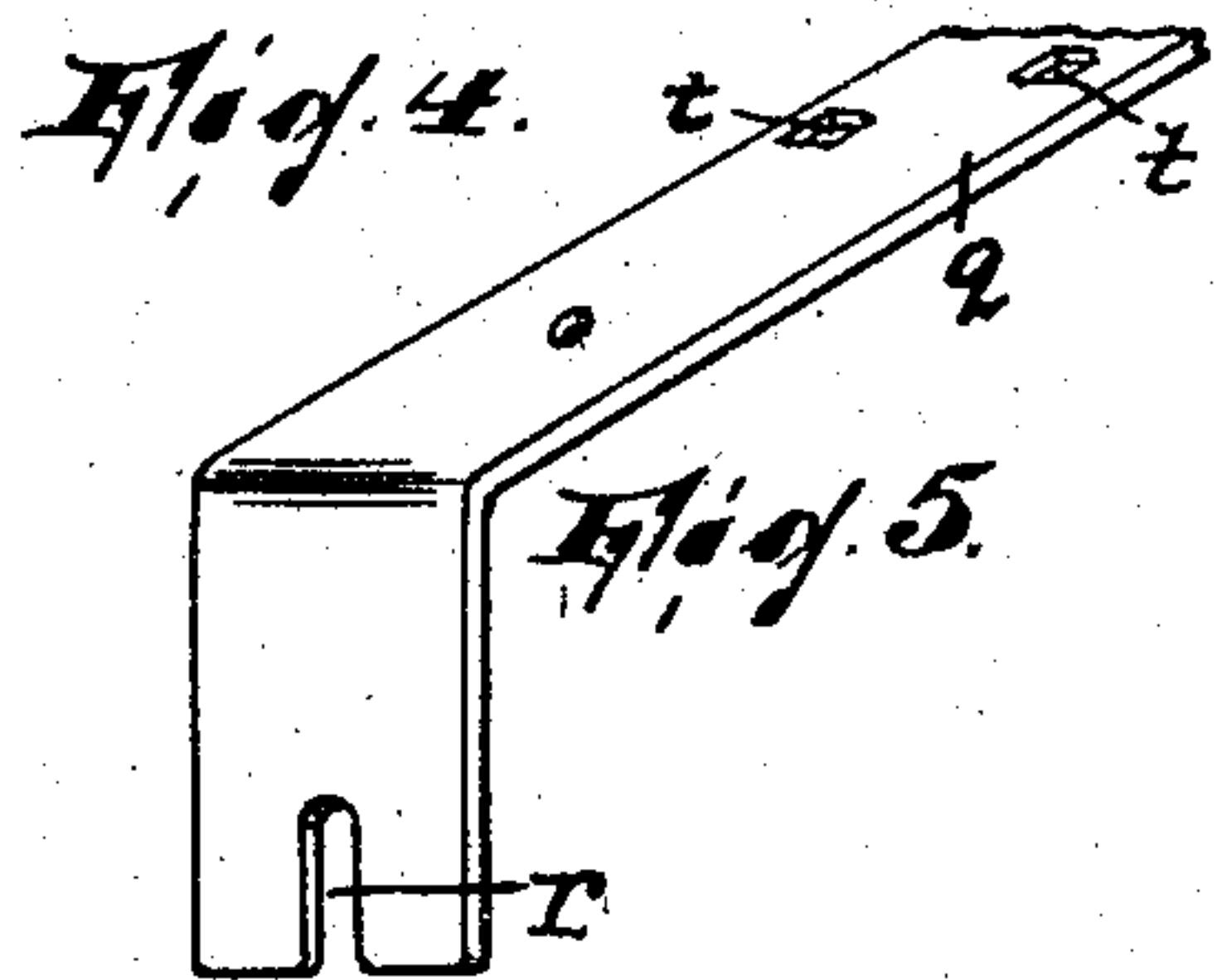
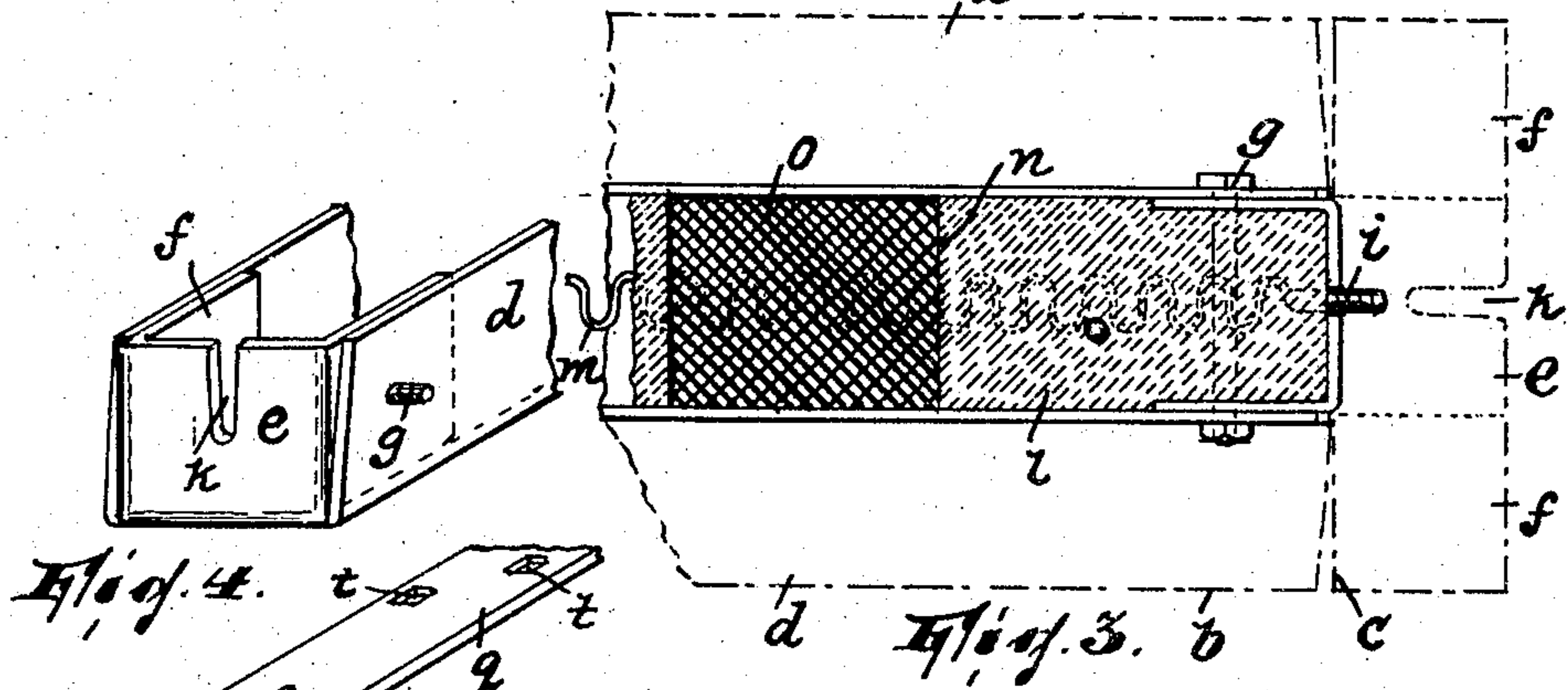
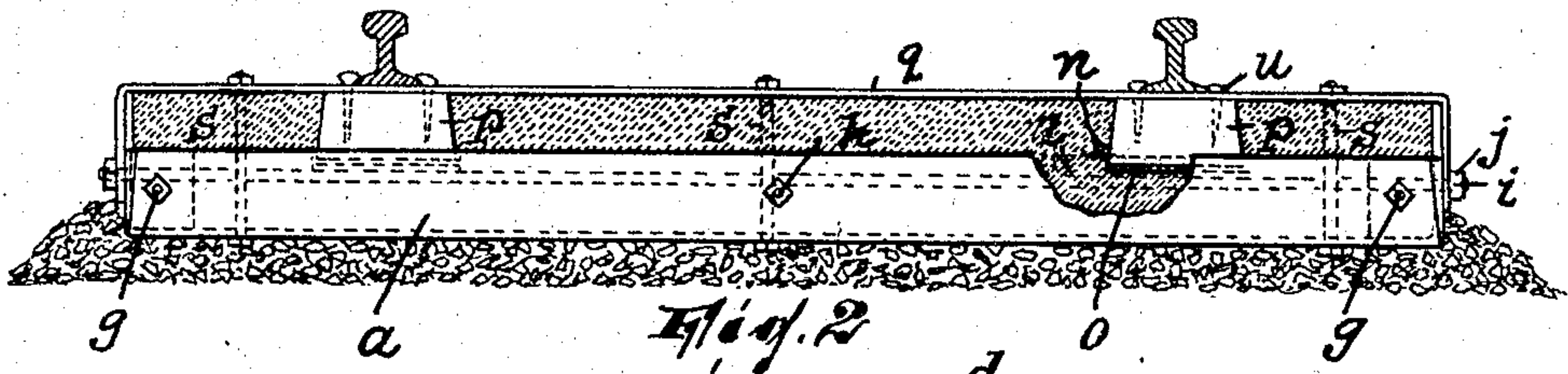
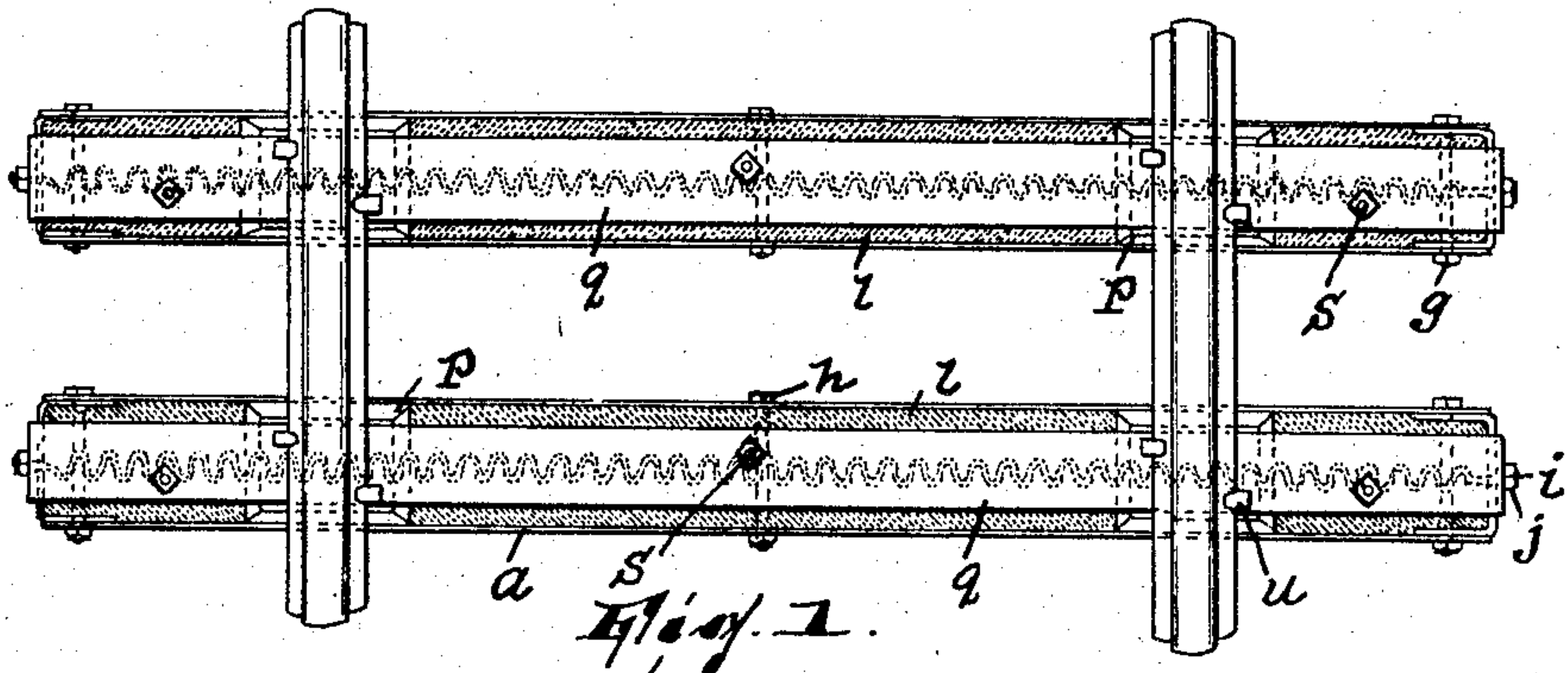


No. 791,195.

PATENTED MAY 30, 1905.

D. V. HOWELL.  
RAILROAD TIE.

APPLICATION FILED SEPT. 8, 1904.



WITNESSES:

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ATTORNEYS.



# UNITED STATES PATENT OFFICE.

DAVID V. HOWELL, OF MONROE, NEW YORK.

## RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 791,195, dated May 30, 1905.

Application filed September 8, 1904. Serial No. 223,673.

*To all whom it may concern:*

Be it known that I, DAVID V. HOWELL, a citizen of the United States, residing in Monroe, Orange county, New York, have invented certain new and useful Improvements in Railroad-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention contemplates an improved form of railroad tie or sleeper designed to be used in the place of the common wooden tie or sleeper.

It has for its object to provide a relatively inexpensive railroad-tie which while it has greater lasting power and strength than the ordinary wooden tie retains a certain resiliency which is regarded as essential in railroad construction and which heretofore could only be had by the ordinary wooden tie.

My invention will be found fully illustrated in the accompanying drawings, wherein—

Figure 1 is a plan view showing two of the improved ties supporting the rails. Fig. 2 is a view in side elevation, partly in section, of one of the improved ties. Fig. 3 is a fragmentary plan view of the improved tie with a certain wooden block and bridge-piece removed and showing in dot-and-dash outline the form of the blank from which a certain metallic shell is produced. Fig. 4 is a perspective view of one end of the shell. Fig. 5 is a perspective view of one end of a certain metallic bridge-piece; and Fig. 6 is a view like Fig. 2, except that it illustrates a modified form of the invention.

*a* in said drawings designates a rectangular shell having substantially the dimensions of the ordinary wooden tie. This may be formed of boiler-iron or other suitable material and has originally or in the blank the shape designated in dot-and-dash outline in Fig. 3, where the blank *b* is shown as formed with slits *c*, entering into the same from its side edges, at right angles thereto, and as far as lines which will be coincident with the sides of the finished shell.

Thus formed the side wings *d d* and end wings *e* of the blank are bent up at right angles to the body thereof—*i. e.*, the portion which will form the bottom of the finished shell—the end portions *f* of the wings *e* being afterward bent in at right angles inside the end portions of the wings *d*, whereupon the shell is permanently retained in this form by bolts *g*, traversing the same transversely in its end portions and securing the wings *d* and *e* together, as best shown in Fig. 3. If desired, an additional bolt *h* may be used to tie the wings *d d* (now forming the side walls of the shell) together. Moreover, the wings *e*, forming the end walls of the shell, are tied together by a bar *i*, having nuts *j* screwed thereon and taking against the outside faces of the end walls *e*. This bar is received by slots *k*, formed vertically in the end walls *e* of the shell.

*l* is a body of cement which fills the shell and extends approximately as high as is illustrated in Fig. 2. In order to have the bar *i* reinforce the cement, said bar can be of sinuous or corrugated shape, as best illustrated at *m* in Fig. 3. The top of the cement is left formed with dovetailed recesses or pockets *n*, extending down beneath the top edges of the shell and lined with asphalt *o*. In these recesses seat, not too snugly, wooden blocks *p*. Resting on the asphalt these wooden blocks are afforded a cushioned bearing on the cement and protected from the effects of moisture, that would otherwise rot them if they rested directly on the cement. They may be further dipped in creosote to preserve them from the weather and moisture and effects. The blocks are held firmly in place by a metallic bridge-piece *q*, consisting of a strip of metal having its ends bent down and slotted, as at *r*, to receive the bars *i*, the nuts *j* of which are designed to secure said bridge-pieces in place. To further reinforce the bridge-pieces, bolts *s* may be employed, extending vertically through them, the cement and the bottom of the shell being preferably mounted in the shell before the cement is filled in. Said bridge-pieces are formed with holes *t*, one on each side of each rail *u*, to permit the spikes whereby the rails are secured in



place to be driven down into the wooden blocks *p*.

In the modified form of my invention shown in Fig. 6 the bridge-pieces *q* do not extend straight across parallel with the top face of the cement body *l*, but are bent up over the blocks *p*, as at *v*, lying for the most part close against the top face of said body of cement.

Thus constructed the tie is stronger, more durable, and cheaper in the long run than the ordinary wooden tie. At the same time by virtue of the wooden blocks *p* it retains the one valuable quality of the wooden tie—elasticity. When the blocks wear or weaken through the effects of weather or moisture, they can be easily replaced upon loosening up or removing the bridge-pieces.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a railroad tie or sleeper, the combination of a permanent base, blocks mounted thereon and forming the rail-supports proper, and a bridge-piece extending over and bearing against said blocks and extending from end to end of said base, said bridge-piece being secured at its ends to said base, substantially as described.

2. In a railroad-tie, the combination of a permanent base, blocks mounted thereon and forming the rail-supports proper, a bar extending longitudinally through said base, and a bridge-piece extending over and bearing against said blocks and extending from end to end of the base and secured at its ends to the ends of said bar, substantially as described.

3. In a railroad tie or sleeper, the combination of a permanent base, blocks mounted thereon and having their top surfaces flush with the top surface of said base, said blocks forming the rail-supports proper, and a bridge-piece bearing against the tops of said blocks and the base and secured at its ends to said base, substantially as described.

4. In a railroad tie or sleeper, the combination of an artificial-stone base, removable wooden blocks mounted thereon and forming

the rail-supports proper, a bar extending longitudinally through said base, and a bridge-piece extending over said blocks and secured at its ends to the ends of said bar, substantially as described.

5. In a railroad-tie, the combination of a base comprising a shell and a filling of artificial stone, a wooden rail-supporting means resting on said base, a bar extending longitudinally through the base and protruding therefrom at its ends, and means, secured to said bar, for holding said rail-supporting means in place, substantially as described.

6. A base for a railroad-tie comprising a metallic shell, a filling of artificial stone, and a bar extending through said filling longitudinally and through the ends of said shell, substantially as described.

7. A base for a railroad-tie comprising a metallic shell, a filling of artificial stone, and a sinuous or corrugated bar extending through said filling longitudinally and through the ends of said shell, substantially as described.

8. The combination of a permanent base, removable wooden rail-supporting means mounted thereon, a bridge-piece extending longitudinally over said base and said rail-supporting means and secured at its ends to said base, the rails resting on said bridge-piece over said supporting means, and spikes penetrating said bridge-piece and driven into said supporting means and holding said rails in place, substantially as described.

9. In a railroad-tie, the combination of a base comprising a shell and a filling of artificial stone projecting above the top edge of said shell and formed with recesses near each end extending down to approximately said top edge of the shell, and removable blocks arranged in said recesses, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of September, 1904.

DAVID V. HOWELL.

Witnesses:

JOHN W. STEWARD,  
ROBERT J. POLLITT.