(No Model.)

J. M. HALFPENNY.

RAIL JOINT.

No. 565,895. Patented Aug. 18, 1896.

FIG. 1.

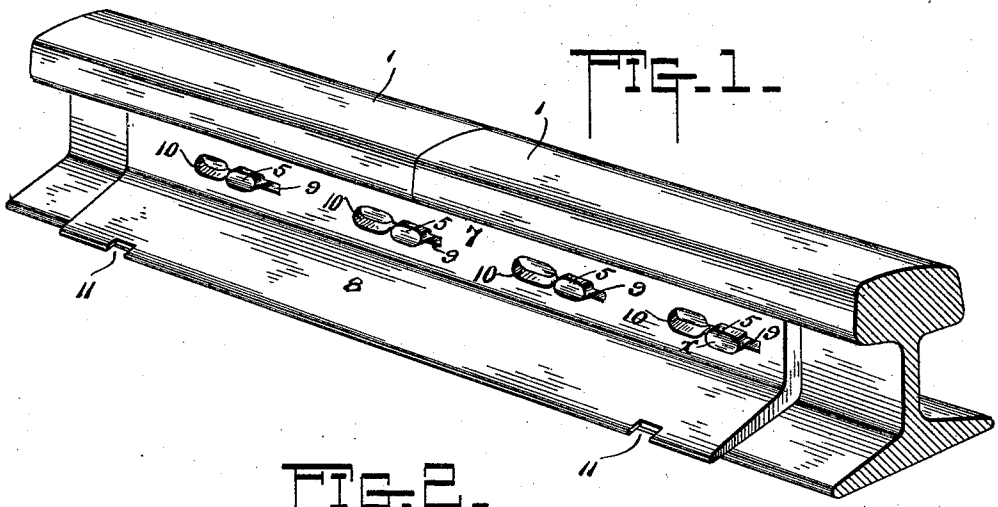

FIG. 2.

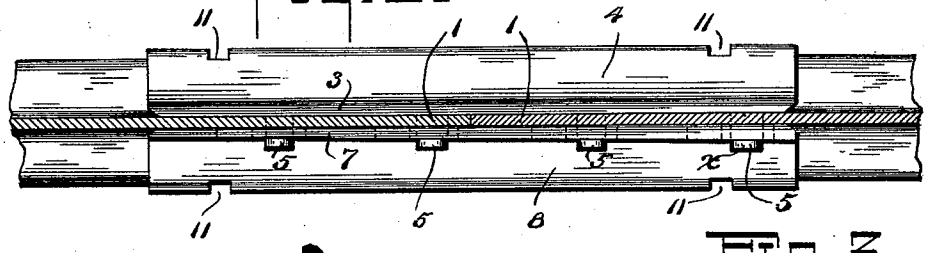

FIG. 3

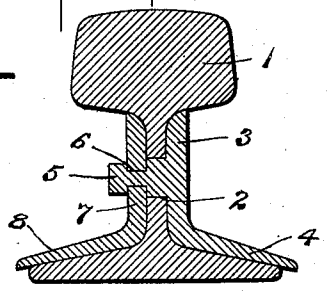

FIG. 5.

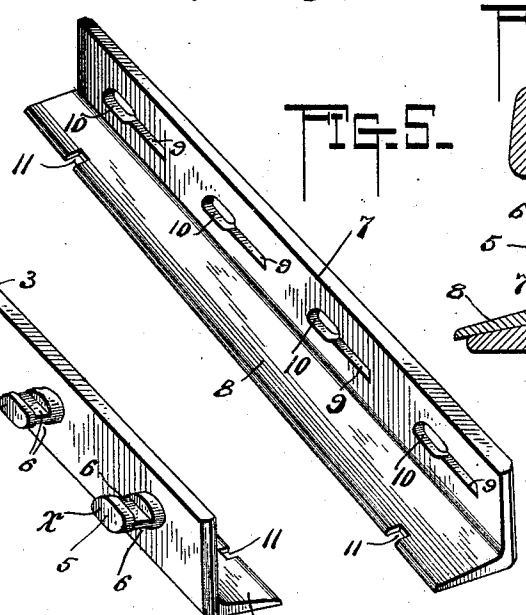

FIG. 4.

Inventor

James M. Halfpenny

Witnesses

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John N. Cromwell

By his Attorneys,

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UNITED STATES PATENT OFFICE.

JAMES MILTON HALFPENNY, OF SWENGEL, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM E. SMITH, OF MILLMONT, PENNSYLVANIA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 565,895, dated August 18, 1896.

Application filed June 18, 1896. Serial No. 596,062. (No model.)

To all whom it may concern:

Be it known that I, JAMES MILTON HALFPENNY, a citizen of the United States, residing at Swengel, in the county of Union and State of Pennsylvania, have invented a new and useful Rail-Joint, of which the following is a specification.

This invention relates to new and useful improvements in splices for the meeting ends of railway-rails; and it has for its object to provide a device of the character mentioned which shall be so constructed as to dispense entirely with the use of bolts and nuts commonly employed for the purpose stated, and thereby prevent weakening of the fish-plates by the formation therein of bolt-holes for the reception of such bolts.

The invention further aims to overcome the necessity of tightening and loosening the nuts on the bolts occasioned by contraction and expansion, and provide simple and efficient means for the ready application and removal of the splice to the rails.

To this end the invention consists, substantially, in the construction, combination, and arrangement of parts, as will be hereinafter fully illustrated, described, and claimed.

In the accompanying drawings, Figure 1 is a perspective view illustrating the herein-described splice in applied position. Fig. 2 is a top plan view with a portion of the rails in section. Fig. 3 is a transverse sectional view through one of the locking-keys. Fig. 4 is a detail perspective view of the key-plate. Fig. 5 is a similar view of the locking-plate.

Similar numerals of reference indicate corresponding parts throughout the figures.

Referring to the drawings, 1 1 designate the meeting ends of railway-rails, which ends are provided with the usual openings 2 for the reception of the locking-keys to be presently described.

At one side of the rails 1 1 is disposed a key-plate 3, having a flange 4, adapted to rest upon one of the flanges of the rails, and formed integral with the side of the plate 3, opposite to the flange 4 thereof, is a series of regularly-spaced locking-keys 5, said locking-keys passing into and extending through the openings 2, formed in the rails 1 1, when the plate 3 is placed against the side of said rails. Each of the keys 5 is provided at its upper and lower sides with alined grooves 6, adapted to receive a locking-plate 7, for the purpose of retaining said plate upon the keys when the latter have been passed through the openings 2.

The locking-plate 7 is placed at the side of the rails 1 1 opposite to the key-plate 3, and said plate 7 has a flange 8 formed thereon, which flange is adapted to rest upon the flanges of the rails similar to the flange 4. The plate 7 is provided with a series of elongated slots 9, spaced at regular intervals, and each of said slots has one of its ends enlarged to form an eye 10, through which eyes pass the keys 5 when said plate 7 is placed against the side of the rails. It is to be noted at this point that the keys 5 are of different lengths, each of the same successively diminishing in length from one end of the series to the other end thereof, and it is further to be noted that the thickness of the plate 7 gradually diminishes from one of its ends to the other to form a wedge, the thickest end of said plate lying adjacent to the longest key 5 and the body thereof extending throughout the entire series of such keys. From this construction it will therefore be seen that when the keys 5 pass through the eyes 10 of the slots 9, and the plate 7 is moved so as to cause the contracted portion of said keys, formed by the grooves 6 and the diameter of which is slightly less than the width of the slots 9, entering the slots 9, said plate 7 forms a complete wedge. By further movement of the plate 7 the same is wedged tighter, by reason of the gradually-diminishing length of the keys 5 and the corresponding diminishing in the thickness of the plate 3, thereby securely locking the splice and holding the rails. After the plate 7 has been forced into its wedged position, spikes or their equivalents may be driven into the ties through notches 11, formed at the edges of the flanges 4 and 8, and by means of the spikes the splice will be effectually prevented from becoming loosened.

The operation and advantages of the herein-described splice will be readily understood by those skilled in the art.

When the rails have been placed so that

their ends meet, the key-plate 3 is arranged along one side thereof, and the keys 5 passed through the openings 2. The plate 7 is then placed at the opposite side of the rails, so that the keys 5 enter the eyes 10, the thickest end of said plate lying adjacent to the longest key *x*. By sliding the plate 7, as described, said keys pass into the slots 9, and said plate becomes firmly wedged to the rails, thus locking the splice and holding such rails in a secure manner. To remove the plate 7 and unlock the splice, it is simply necessary to force said plate in a direction so that the keys 5 may be withdrawn from the eyes 10, when both the key-plate and the locking-plate may be easily removed from the rails.

From the foregoing it will be apparent that I have provided a rail-splice which is simple and effective and by which the ordinary bolts and nuts used for securing together the meeting ends of rails are entirely dispensed with, thereby preventing weakening of the fish-plates by the formation of bolt-holes therein, and also overcoming the necessity of constantly tightening and loosening the nuts on the ordinary bolts due to contraction and expansion.

The invention, furthermore, may be readily applied and removed from the rails in a rapid and easy manner.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

In a splice for railway-rails, the combination, with the rails provided at their meeting ends with openings, of a key-plate disposed at one side of said rails, a series of regularly-spaced locking-keys formed at one side of said key-plate and adapted to pass into and extend through the openings in the meeting ends of the rails, each of said keys successively diminishing in length throughout the entire series and provided at its upper and lower sides with alined grooves, a locking-plate arranged at the side of the rails opposite to the key-plate and provided with a series of elongated slots each of which has one of its ends enlarged to form an eye, said locking-plate gradually diminishing in thickness throughout its entire length to form a wedge, the thickest end thereof lying adjacent to the longest locking-key, said elongated slots of the locking-plate being adapted to receive the locking-keys when the latter are passed through the eyes thereby wedging the locking-plate upon the keys, and means for holding the locking-plate in its wedged position, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES MILTON HALFPENNY.

Witnesses:
J. G. ROYER,
AGNES ALBRIGHT.