July 22, 1930. A. C. FISCHER 1,771,079

RAIL EXPANSION SOUND DEADENER

Filed March 24, 1928

Fig. 1.

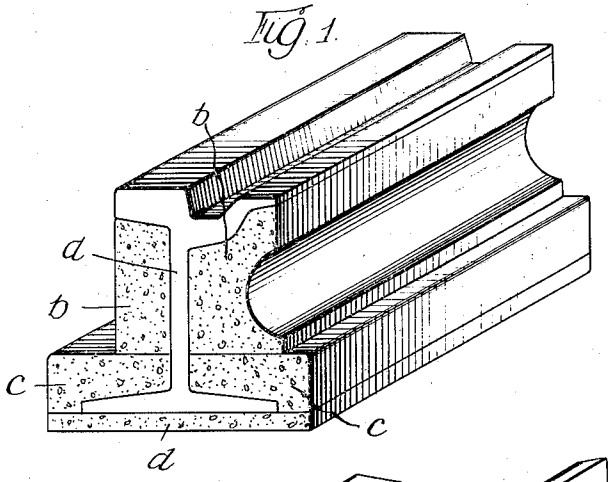


Fig. 2.

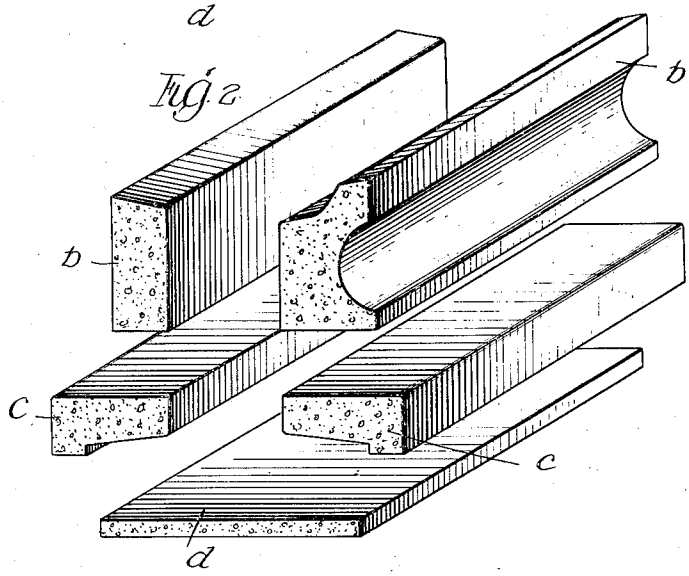
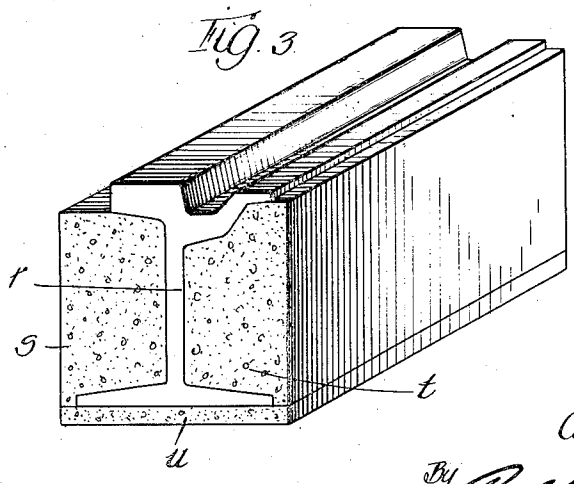


Fig. 3.



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UNITED STATES PATENT OFFICE

ALBERT C. FISCHER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PHILIP CAREY MANUFACTURING COMPANY, A CORPORATION OF OHIO

RAIL-EXPANSION-SOUND DEADENER

Application filed March 24, 1928. Serial No. 264,384.

My invention relates to a preformed, prepared strip of bituminous material, made to conform to the outline of the rail, and so arranged that it ties in or locks parts at various points, compacting the units against the rail, completely surrounding all sides of the rail, except the head, so that the rail is completely separated from the hard paving material, surrounding it with an insulation material, which also acts as an expansion joint, thus deadening the impact of the car upon the rail.

My invention relates to a system of a plurality of units, preferably three, adapted to completely surround the surface sides and all portions of the rail, except the head, whereby to provide complete weatherproofing effect, insulating effect and sound deadening effect.

Another object of my invention is to provide a multiple part rail filler adapted to enclose all sides of the rail except the head of the rail, which rail filler is of such characteristic that while sufficiently solid and rigid to withstand shock or vibrations due to the traffic over the rail, and to permit it to be readily handled and transported, it is likewise sufficiently plastic and sound deadening to absorb the shocks and vibrations. In addition the multipart structure is formed of weatherproofing and insulating material.

My invention has other objects, which will be apparent from a perusal of the following specification when taken in connection with the drawings, wherein,

Figure 1 is a view showing a rail filler formed of more than three parts and assembled in position about the rail. The five part structure herein being specifically the invention of Henry W. Herbst, as claimed in his application Serial No. 79,543, filed January 6, 1926.

Figure 2 is a view of the five parts removed from the rail, and

Figure 3 is a modification of the multipart rail filler showing a rail filler of three parts completely surrounding the rail, excepting the head portion thereof, and which specific invention is disclosed and claimed in detail herein, as well as being broadly claimed.

The material of which this rail filler is composed is preferably that of a mixture of bituminous material and ground corn cobs, or it may consist of bituminous material, ground corn cobs and finely divided fiber, or it may consist of bituminous material and web strengthening material consisting of elongated flat fibrous material, such as pieces of felt, paper, wood pulp, ribbon excelsior, flat wide grasses, reed, or vegetation which is strong and consists of elongated fibrous material; or it may consist of clay treated with oil and mixed with the above described filler, or clay mixed with a ductile and oily substance, such as clay, suitable mineral oil, resin, and rubber compounds, mixed with the above described fibrous materials.

I do not wish to be limited to the composition of matter utilized as a binder, when mixed with any of the above described formations, in so far as they are new, when adapted for expansion joint and sound deadener for rails. Ground corn cobs are preferred, or granulated cork particles may be used, and these materials will be more suitable when considering the insulation value as against the expansion value.

Referring to the construction shown in Figures 1 and 2, *a* represents the rail, *bb* the upper rail units and *cc* the lower units, and *d* the base unit of the five part structure.

It can readily be seen that the base portion *cc* is readily standardized in shape and form, because the shape of the base varies but little. The left hand unit *b* of the upper rail section changes more than either of the lower rail sections *cc*, and the right hand unit *b* of the upper rail section changes many times, due to the variations in the rail occurring on this side. The base section *d* is almost continuously standard. The sections *cc* in Figure 1 are placed in position and the sections *bb* pressed into position above the sections *cc*, locking the sections *cc* in place. The base section is then placed in position, completing the entire envelopment of the rail excepting the head of the rail.

Figure 2 illustrates the units *bb* separated from the rail, *cc* the standardized sections

of the lower rail portion and *d* the fully standardized base portion.

In Figure 3 of the drawings I have shown a rail filler wherein the rail *r* is wholly enclosed except for the head portion, being surrounded by a three part rail filler construction, consisting of a first block *s*, a second block *t* and a base *u*, which blocks lie in contact with each other and wholly enclose not only the base flange of the rail but also the upstanding web portions and the under portions of the head of the rail. These bituminous portions are slightly adhesive and are in contact with one another.

The proportion of ground corn cob may run as high as twenty-five (25) per cent or more, but preferably twenty-five (25) per cent ground corn cobs and seventy-five (75) per cent bituminous material. Likewise the cork granules may conform to the same formula. If finely divided fibrous material is utilized a suitable formula would be twenty (20) per cent ground corn cobs, ten (10) per cent finely divided fibrous material and seventy (70) per cent bituminous material or binding material, whatever the binder may be.

It can be readily understood that incorporation of the described fibrous material in bituminous material would insulate any of the granite, concrete or brick paving over the rail, and the cellular structure with the granules would take up the sound and prevent its transmission from the rail to the hard paving substance. The binder with the aid of the filler will also provide a suitable expansion joint material due to the compressible qualities of the bituminous or the like material, and the resiliency of the fibrous material mixed therewith.

A suitable formula for the bituminous material would be any blown bituminous material or any other type of bituminous material which would readily act as a binder, or the binder may consist of clay eighty (80) per cent, mineral oil twenty (20) per cent, or it may consist of clay seventy (70) per cent, resin ten (10) per cent and a suitable mineral oil twenty (20) per cent, or it may consist of sixty (60) per cent clay, ten (10) per cent resin, ten (10) per cent dissolved rubber and twenty (20) per cent suitable mineral oil. Any of the described filling materials adding strength and acting as a tying means for the binder, may be utilized.

I have succeeded in eliminating projections, openings and extensions, which are readily deformable in packing, and thus have devised a material which will shape better and be in better position to fit to the rail than previously.

This application contains subject matter withdrawn from the application Serial No. 79,543, originally filed jointly by Albert C. Fischer and Henry W. Herbst, and in addition this application contains subject matter shown in Figure 3, relating to the three part structure which was originally not disclosed in said joint application.

I claim:

1. A system of track installation consisting of a rail, preformed blocks of waterproofing, non-deteriorating, vibration absorbing material arranged on opposite sides and in contact with the web and underside of the head of the rail, a preformed cushion containing a bituminous material provided with a portion adapted to lie below the base of the rail, said blocks on opposite sides of the web portion of the rail overlying the base portion of the rail flange and enclosing the sides of the rail flange and contacting with the upper face of said cushion.

2. A system of track installation comprising a rail and a plurality of preformed blocks of vibration absorbing bituminous material in the form of a base and flanking plates, said flanking plates being provided with projection means extending to the bottom face of the rail foot.

3. A system of track installation comprising a rail and a plurality of preformed blocks of vibration absorbing bituminous material in the form of a base plate and at least two flanking plates, the base plate adapted to underlie the rail foot and extend beyond its edges, and means on the flanking plates for contacting with said base plate.

4. A system of track installation comprising a rail and a plurality of preformed blocks of vibration absorbing bituminous material in the form of a base plate and at least two flanking plates, the base plate adapted to underlie the rail foot and extend beyond its edges, and the flanking plates being of sufficient thickness to project beyond the rail foot and provided with means to contact with the extended ends of the base plate.

5. A system of track installation comprising a rail and a plurality of preformed blocks of vibration absorbing bituminous material in the form of a base plate and at least two flanking plates, the base plate adapted to underlie the rail foot and extend beyond its edges, and the flanking plates being of sufficient thickness to fill the rail cavity and project beyond the rail foot in contact with the base plate.

Signed at Chicago, Illinois, this 22d day of March, 1928.

ALBERT C. FISCHER.