Jan. 21, 1930. A. C. FISCHER 1,744,304

# CONSTRUCTIONAL UNIT AND METHOD OF MAKING SAME

Filed April 16, 1928

Fig. 1.

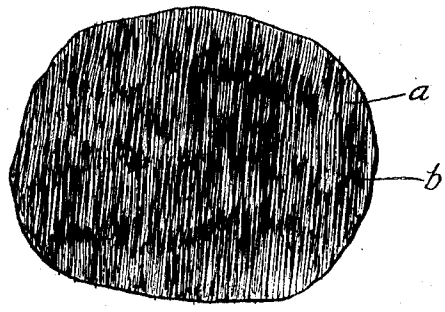
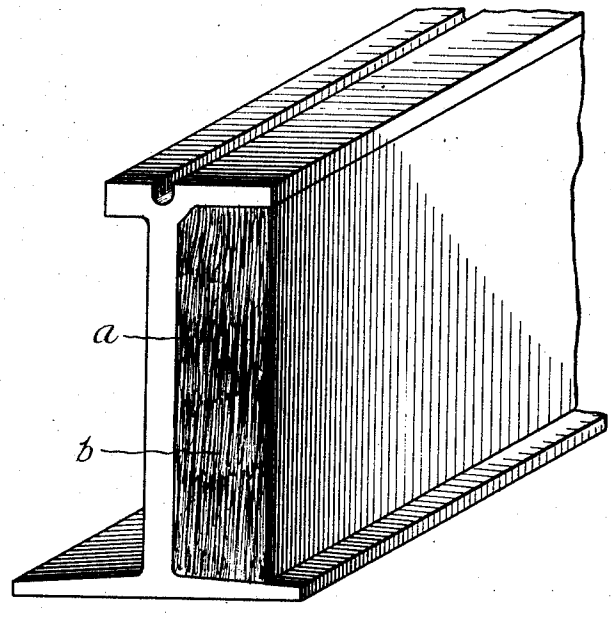



Fig. 2.




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# UNITED STATES PATENT OFFICE

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## CONSTRUCTIONAL UNIT AND METHOD OF MAKING SAME

Application filed April 16, 1928. Serial No. 270,519.

This application relates to subject-matter shown and described in my Patent No. 1,591,670, issued July 6, 1926 and particularly pertains to constructional units of cellular, sponge-like structure and the method of making same.

The invention is typified by a rail filler which is adapted to be inserted in the cavities of car rails and separate them from the pavement structure.

A rail filler of sponge-like structure may be fabricated from a bituminous mixture in which an air-pocketing ingredient has been incorporated to distribute air cells throughout the bituminous mass.

A suitable air-pocketing ingredient is a degummed fibrous material. Fibrous material, such as, hemp, flax, straw, and the like, is treated with caustic soda to remove the gummy matter and increase its capillary attraction, after which it is immersed in a mass of heated bituminous material. The degummed fibers absorb and draw the heated bituminous material through the structure, thereby forming a bituminous wall about the numerous air pockets, and creating a spongy cellular body. In this condition the mixture is formed in constructional units of any desired form, and suddenly chilled as by immersing in cold water.

Various chemicals used in the treatment of rubber, sponge rubber and its preparation for vulcanization may be employed to further provide toughness and a rubbery character to the fibrated bituminous mass.

This cellular structure differs greatly from that shown in previous inventions, in that the air pockets are closed and sealed.

Where solid bituminous matter has been used under pressure, for instance the pressure upon it of adjoining paving sections incident to its use as a paving joint, there is an elongation or lengthening of the mass and an oozing out from the packed space, which conclusively shows that the body is not inherently compressible. Likewise with laminated joints where the felt has been saturated and squeezed between rollers, then laid together with a solid asphalt layer, there is no inherent compressibility.

Where hemp, rope, and other packing materials are used they are immersed in a light waterproofing material or solidly saturated so no cellular structure exists, as herein described. Under pressure most of the joints ooze out of the crevice and lie over on the pavement, thus preventing the substance reentering the crevice.

By inherently compressible paving joint, I mean one which can be compacted into a lesser space without elongation or displacement of its contained bituminous matter or equivalent waterproofing and air pocketing ingredient. Such a joint is caused to adhere to the faces of the opposing pavement slabs, and its expansion in response to contraction of the slabs is more real and rapid than is possible with a solid or boardlike structure.

This invention relates to constructional material comprising a preformed matted structure having capillary action, immersed in bituminous material, said bituminous material being carried thru the fibrous matted structure by the capillary action and permeated therewith.

Figure 1 represents a mass of the material, *a* illustrating the waterproofed fiber, and *b* the air spaces between the fiber.

Figure 2 represents the material formed into rail filler, *a* representing the filled degummed fiber, and *b* the air spaces between the fiber.

I claim:

1. Constructional material comprising a preformed, degummed, matted structure having capillary power, treated with a bituminous material and permeated therewith.

2. Constructional material comprising a preformed, degummed, matted fibrous structure permeated with bituminous material thru the capillary action of the degummed fibrous structure.

3. Rail filler comprising a preformed, degummed, matted structure having capillary power, treated with a bituminous material and permeated therewith.

4. Rail filler comprising a preformed, degummed, matted fibrous structure permeated with bituminous material thru the capillary action of the degummed fibrous structure.


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5. Preformed construction units, comprising a homogeneous composition of bituminous compound and a fibrous air pocketing ingredient.

6. Preformed construction units, comprising a homogeneous composition of bituminous compound and degummed fibrous material.

7. In a construction unit, a body portion, comprising a preformed bituminous strip of spongelike, cellular structure, said strip having incorporated therein degummed fibrous material for reenforcing the cells thereof and containing a rubber chemical to give a rubbery character thereto.

8. Preformed construction units, comprising a homogeneous composition of bituminous compound and a fibrous air pocketing ingredient, said preformed units having an imperforate wall covering.

9. Preformed construction units, comprising a homogeneous composition of bituminous compound and degummed fibrous material, said preformed units having an imperforate wall covering.

10. Preformed rail filler for flanking the sides of a rail, comprising a homogeneous composition of bituminous compound and degummed fibrous material.

11. Preformed rail fillers for flanking the sides of a rail, comprising a homogeneous composition of bituminous compound, and a fibrous air pocketing ingredient, said rail fillers having an imperforate wall covering.

12. Preformed rail fillers for flanking the sides of a rail, comprising a homogeneous composition of bituminous compound and degummed fibrous material, said rail fillers having an imperforate wall covering.

13. The method of forming constructional material characterized by warming bituminous compound to a flowable condition, incorporating a fibrous, air-pocketing ingredient in the compound, forming the mixture into strips, and rapidly cooling said strips.

14. The method of forming constructional material characterized by warming bituminous compound to a flowable condition, incorporating a fibrous, air-pocketing ingredient in the compound, forming the mixture into strips, and subjecting the formed strips to a water bath.

15. The method of forming constructional material characterized by warming bituminous compound to a flowable condition, incorporating a degummed fibrous material in the compound, forming the mixture into strips, and rapidly cooling said strips.

16. The method of forming constructional material characterized by warming bituminous compound to a flowable condition, incorporating a degummed fibrous material in the compound, forming the mixture into strips, and subjecting the formed strips to a water bath.

17. Preformed rail filler for flanking the sides of a rail, comprising a homogeneous composition of bituminous compound and a fibrous air pocketing ingredient.

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

ALBERT C. FISCHER.


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