

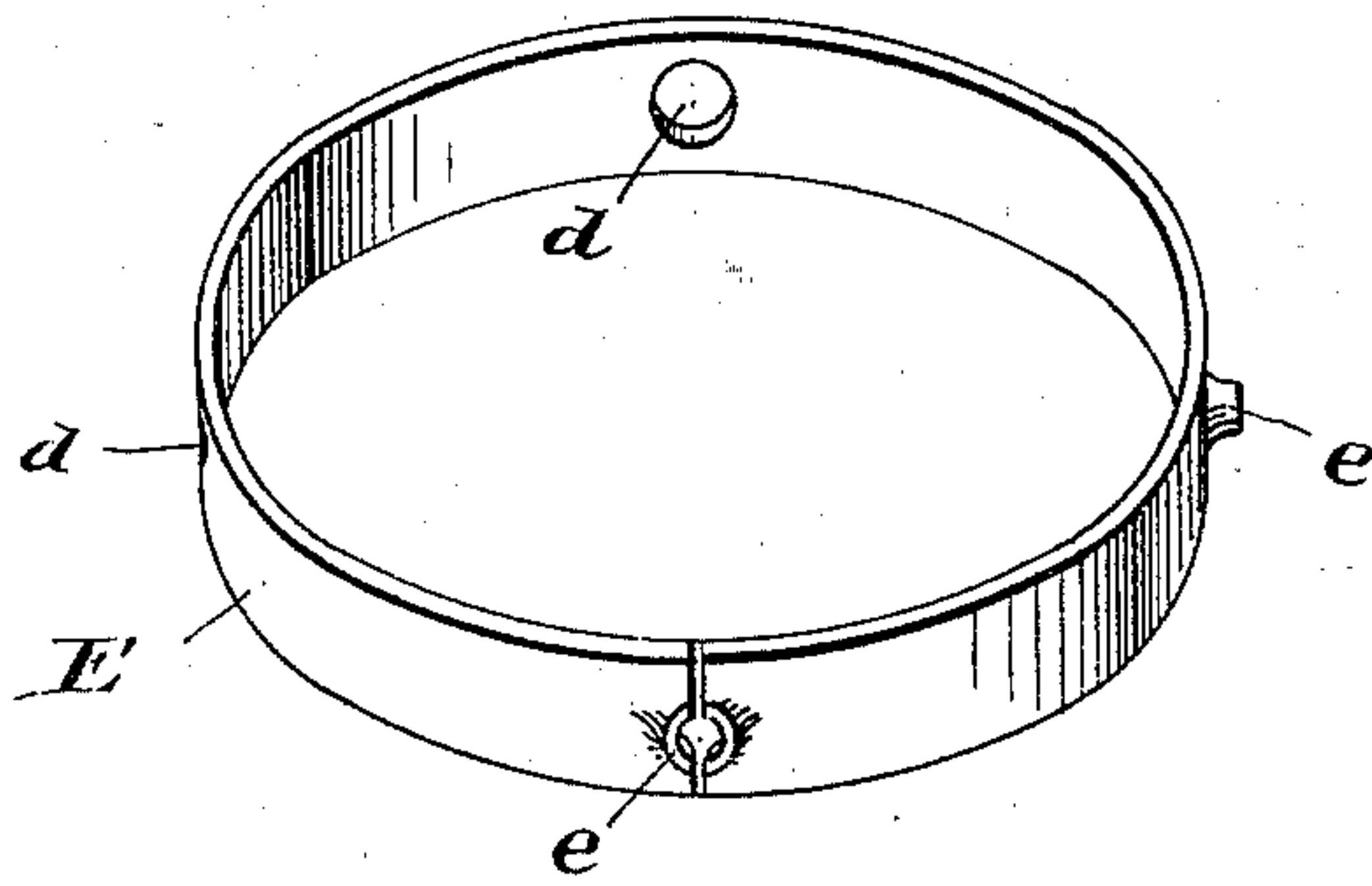
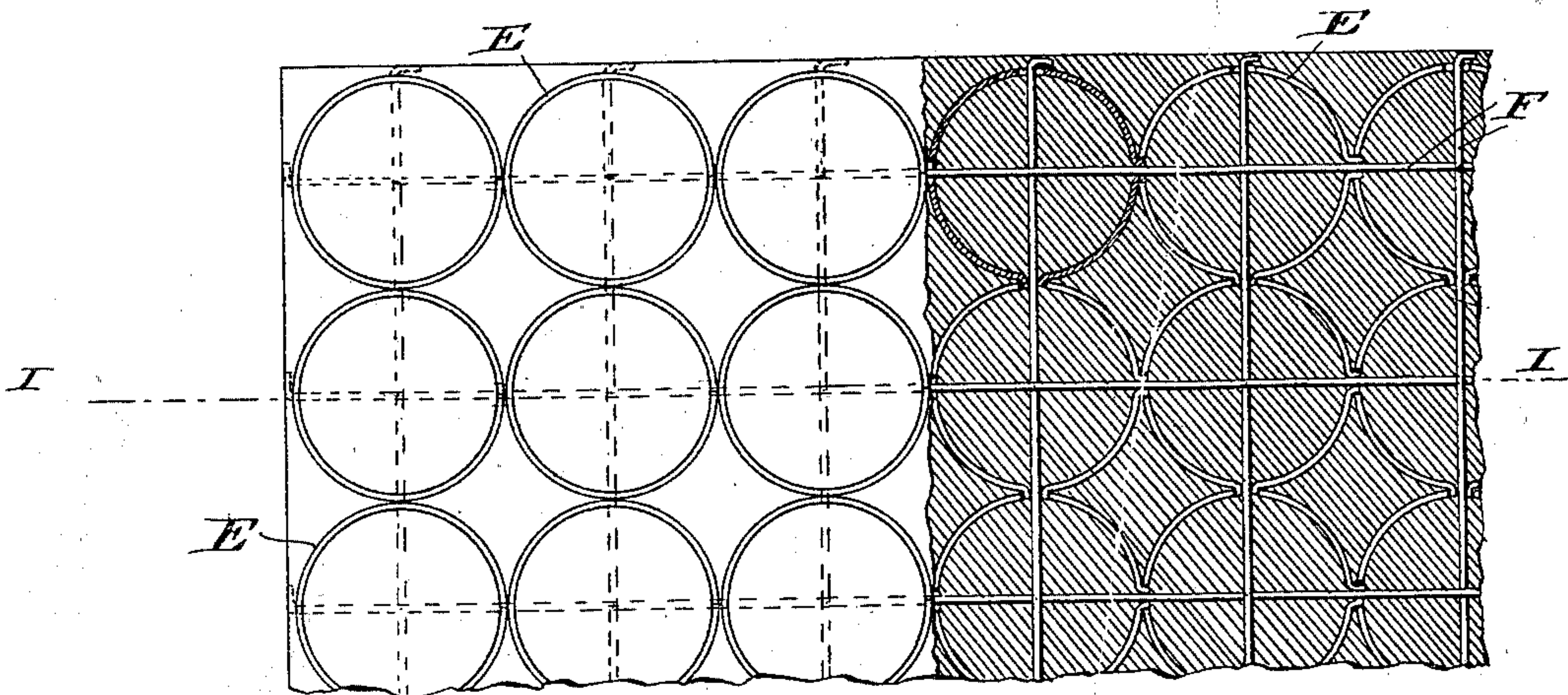
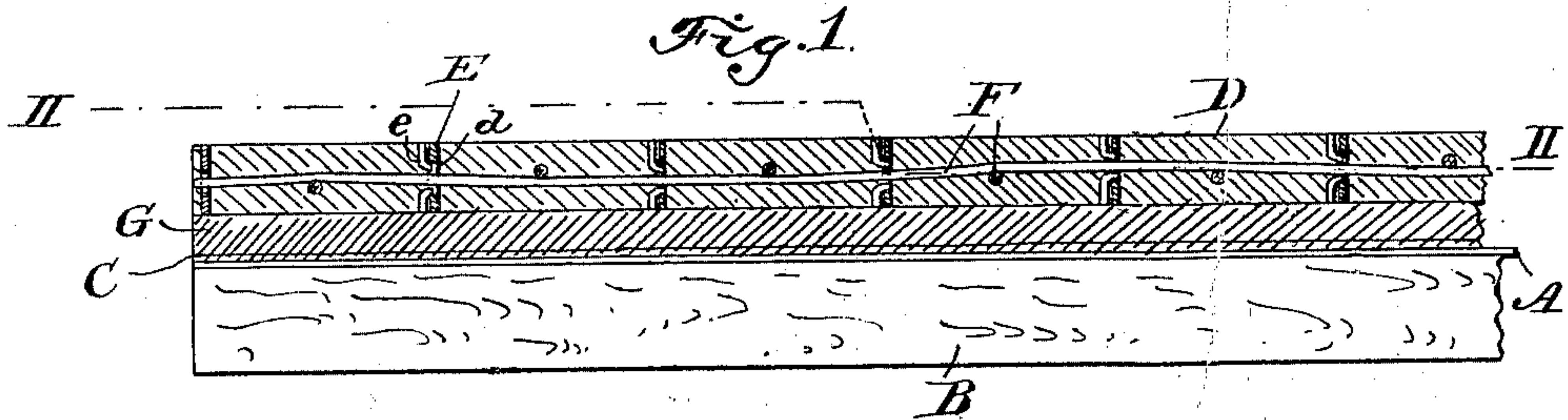
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Patented Oct. 25, 1898.

R. BUTCHER.  
FLOORING OR PAVEMENT.

(Application filed July 30, 1897.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

ROBERT BUTCHER, OF NEW YORK, N. Y.

## FLOORING OR PAVEMENT.

SPECIFICATION forming part of Letters Patent No. 612,821, dated October 25, 1898.

Application filed July 30, 1897. Serial No. 646,570. (No specimens.)

*To all whom it may concern:*

Be it known that I, ROBERT BUTCHER, a subject of the Queen of Great Britain, residing at New York city, in the county of New York, State of New York, have invented certain new and useful Improvements in Flooring or Pavements; and I do 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.

It is the object of my invention to provide a plastic composition for flooring and pavements especially adapted to be laid in continuous sheets where a light flooring and one of very durable character is required—for instance, in freight and stock cars, where extreme lightness and impermeability to liquids are necessary.

It is a further object of the invention to provide such a plastic composition, comprising asphalt, in which the oil or grease of the asphalt is entirely taken up, so that heat will not render the surface of the flooring soft, oily, or slippery.

It is a further object of the invention to provide such a flooring which is especially adapted to sustain heavy weights without becoming indented thereby or suffering barrels or other heavy objects left standing thereon to sink into its surface.

To these ends the invention consists in a composition of asphalt and sawdust in the proportions, by weight, of about thirty to twenty per cent. of asphalt and seventy to eighty per cent. of sawdust.

It further consists in asphalt, sawdust, and infusorial earth, preferably in the proportions of forty per cent. of asphalt, fifty per cent. of sawdust, and ten per cent. of infusorial earth, which latter ingredient completely absorbs the free oily portion of the asphalt, with the effect of keeping the surface in proper dry condition notwithstanding changes of temperature.

The invention further consists in a flooring comprising supporting-pieces, such as strips of sheet metal arranged on edge, with their top edges flush with the surface, so as to leave spaces between them and a plastic filling in said spaces.

The invention further consists in a flooring

comprising rigid supporting-pieces arranged so as to leave spaces between them, a plastic filling in said spaces, and a base of permanently-plastic material extending beneath the said supporting-pieces and filling, so as to permit the supporting-pieces as the surface wears away to sink slightly into the plastic base and remain at their top edges always flush with the surface of the pavement.

The invention further consists in the elements and combinations thereof hereinafter set forth and claimed.

In order to make the invention more clearly understood, I have shown in the accompanying drawings means for carrying the same into practical effect without limiting my improvements in their useful applications to the particular constructions delineated.

In the drawings, Figure 1 is a vertical sectional view of a flooring embodying my invention. Fig. 2 is a plan view, partly in section, on line I I of the flooring, shown in Fig. 1. Fig. 3 is a perspective view of one form of one of the supporting-pieces.

In making the composition constituting the first part of my invention I take a preferably coarse sawdust and combine it with a rock asphalt or other suitable asphalt, when the latter is in a melted condition, preferably in the proportions of from thirty to twenty per cent. of asphalt to seventy to eighty per cent. of the sawdust. Where the sawdust is fine, the asphalt is somewhat increased in proportion. It is, however, to be observed with respect to the proportions just named and other proportions of ingredients herein described that they may be varied to a considerable extent without departing from my invention.

The above composition while in a plastic condition is laid in the form of a continuous sheet to produce the flooring or pavement desired. This flooring is frequently laid upon a board foundation, and to isolate the plastic material therefrom and prevent the expansion and contraction of the wooden base from cracking the asphalt I separate the latter from the base by a layer or layers A, of paper, placed first upon the boards B. Over this paper is laid a coating C, of fluid or other plastic asphalt, and upon the latter the wearing-surface, of the asphalt and sawdust composition D, hereinbefore described.



In some situations the sawdust ingredient of the flooring is liable to decay, which is hastened by any indentation or partial breaking up of the surface. I entirely, or almost entirely, obviate this by combining with the sawdust and asphalt a diatomaceous or infusorial earth. This ingredient also serves an important end in filling up the voids between the particles of sawdust and rendering the flooring more dense and less liable to indentation. At the same time the earth is proof against decay. This earth is added to the composition while the same is in a liquid or semiliquid condition, the ingredients in which case being preferably in the proportions of forty per cent. asphalt, fifty per cent. of sawdust, and ten per cent. of the infusorial earth.

In pavements of asphalt composition increases of temperature are liable to cause the oil of the asphalt to rise to the surface of the pavement, making the latter greasy and slippery. I provide for the entire absorption of this element of the asphalt by the use of the above-mentioned infusorial earth, which insures that the surface of the pavement shall always be in the proper dry condition, notwithstanding the action of ordinary degrees of heat upon the asphalt.

In many situations where flooring of asphalt compositions is desirable—such as in freight-cars, stock-cars, breweries, warehouses, factories, &c.—the flooring is required to sustain heavy weights, which in many cases indent and tend to deteriorate the flooring on account of the yielding of the plastic composition to the force of such weights. I obviate these objections by providing a compound pavement comprising sheet metal or other rigid supporting-pieces arranged with spaces between them filled with the above-described or other suitable plastic composition. In the drawings, E indicates such supporting-pieces, in this instance formed of separate rings of sheet metal arranged on edge and preferably connected together by wires F or other suitable means. In the construction illustrated these wires are passed continuously through the rings from one side of the wires to the other, two sets of such wires being provided at right angles to each other, with the result that there is formed a coherent metallic mat containing numerous spaces. *e* indicates a projection formed at the aperture of the ring and adapted to fit a corresponding depression *d* in its contiguous ring, thereby locking the rings together and compelling them to remain in the same horizontal plane. These spaces are filled with the above-described or other suitable composition, so that the wearing-surface of the filling shall be flush with the top edges of the supporting-pieces. As the filling is worn away by use the top edges of the

harder supporting-pieces would ordinarily be left projecting above the surface of the flooring; but according to my invention I lay beneath the supporting-pieces and filling a base G, of permanently-plastic material, such as rock asphalt, into which the lower edges of the supporting-pieces are allowed to sink and remain, thereby leaving the wearing-surface of the pavement smooth. In making the composition for this base I preferably use ninety per cent. of rock-asphalt mastic and ten per cent. of refined bitumen.

I may mention that the composition hereinbefore described for flooring may be advantageously employed for the roofs of buildings and of freight-cars.

I claim—

1. A compound flooring consisting of metallic or other rigid supporting-pieces arranged with spaces between them, a filling of plastic material, and a base, beneath said pieces and filling, composed of a permanently-plastic material adapted to permit the supporting-pieces to sink thereinto as the surface of the filling is worn away.

2. A compound flooring consisting of supporting-pieces of sheet metal arranged on edge with spaces between them, a plastic filling, and a base of permanently-plastic material beneath said supporting-pieces and filling, as and for the purpose specified.

3. A compound flooring consisting of supporting-pieces of sheet metal arranged on edge with spaces between them, a plastic filling material in said spaces composed of asphalt and sawdust, and a base beneath said pieces and filling composed of a permanently-plastic material, as and for the purposes set forth.

4. A compound flooring consisting of rings of sheet metal, wires passing through and connecting said rings in series, and a plastic filling material.

5. A compound flooring consisting of sheet-metal rings, connections between said rings, a filling material of asphalt and sawdust, and a base beneath said rings and filling composed of a permanently-plastic material.

6. A compound flooring consisting of metallic supporting-pieces arranged on edge and formed with projections *e* and depressions *d* interlocking with each other, wires passing through said depressions and projections the whole forming a metallic mat and a plastic filling material in the spaces between said supporting-pieces.

In testimony whereof I affix my signature in the presence of two witnesses.

ROBERT BUTCHER.

Witnesses:

H. N. LOW,

J. S. BARKER.