

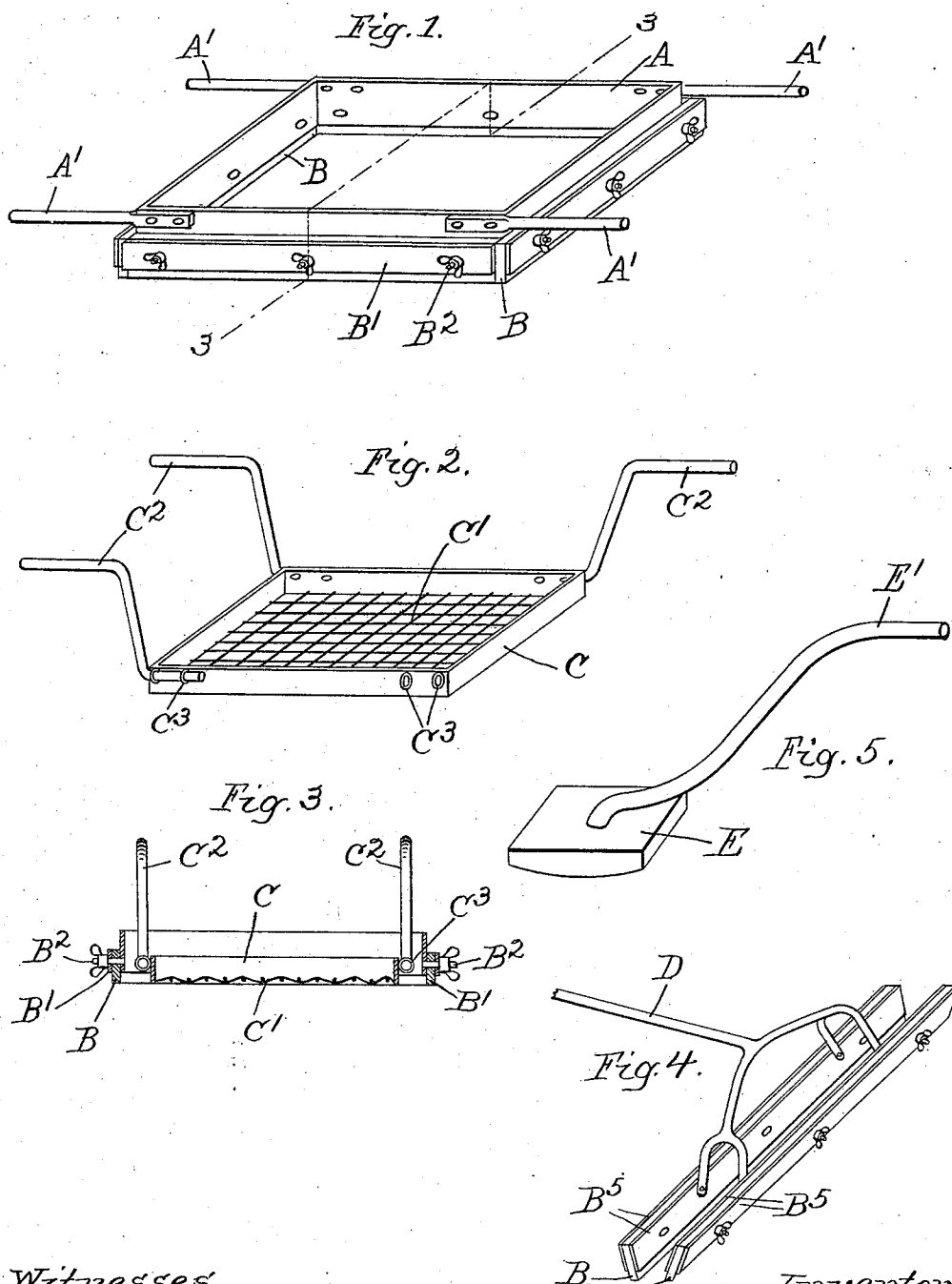
(No Model.)

J. W. BUZZARD.

PROCESS OF AND DEVICE FOR REPAIRING ASPHALT PAVEMENTS.

No. 575,697.

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Witnesses.

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PROCESS OF AND DEVICE FOR REPAIRING ASPHALT PAVEMENTS.

SPECIFICATION forming part of Letters Patent No. 575,697, dated January 26, 1897.

Application filed June 26, 1896. Serial No. 597,029. (No model.)

To all whom it may concern:

Be it known that I, JOHN WILLIAM BUZZARD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Processes of and Devices for Repairing Asphalt Pavements, of which the following is a specification.

My invention relates to a process for repairing pavements, such, for example, as asphalt pavements, together with the devices necessary to carry out such process.

The object of my invention is to provide a new process of and means for repairing such pavements.

Broadly speaking, my invention consists substantially of means and processes whereby pavements of asphalt or the like are first melted or softened by the application thereto of a molten and preferably air-excluding substance to heat the pavement, which substance is then removed and the spot to be repaired supplied with new paving material in the proper condition for finishing and completing, should such new material be necessary.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of a case or box to be placed over the part of the pavement needing repair. Fig. 2 is a perspective view of a box or receptacle to be inserted within the box shown in Fig. 1. Fig. 3 is a section on line 3 3, Fig. 1, when both boxes are in position. Fig. 4 is a perspective view of a device used in repairing cracks in the pavement. Fig. 5 is a view of an iron used in the construction of asphalt pavements.

Like letters refer to like parts throughout the several figures.

When pavements made, for example, from asphalt, are used, they become cracked and give away in spots, thereby needing repairs. It has ordinarily been the custom in repairing such pavements to use a flame to heat the asphalt surface and the edges of the part to be repaired, the flame coming in contact with the asphalt. It has been found that when the asphalt is heated in this manner the flame burns a part of the material, thereby necessitating the removal of such material before repairing the pavement. This burning of the

material causes delay and trouble in removing the same, and is also expensive, as a large amount of the asphalt is destroyed.

The object of my invention is to provide means by which the repairing of asphalt pavements, for example, can be easily and quickly accomplished without destroying or burning any part of the pavement or causing any part thereof to be removed.

Briefly stated, my process for repairing pavements, as, for example, asphalt pavements, consists in applying molten material, such, for example, as lead, to the part to be repaired, said molten material heating up the edges and surfaces of the spot in the pavement to be repaired until the asphalt becomes soft. The molten material, which then becomes hardened after coming in contact with the pavement, is then removed, leaving the asphalt around the opening in the pavement in the molten condition. The molten asphaltum mixture is then applied to the heated surface of the pavement to be repaired and unites with the surface and the edges of the opening. The spot is then rolled or compressed in any desired manner, so as to completely unite the new asphaltum with the old.

I have illustrated in the drawings a series of devices which may be used in my process of repairing pavements, but it is of course evident that other devices than are herein shown may be used so as to produce the same result, and I therefore do not wish to be limited to the form, construction, and arrangement herein shown and described.

Referring to Fig. 1, I have shown a case or box A, made preferably of metal and provided with handles A' A', by which it may be moved from place to place. Around the outer and lower edge of this box I fasten strips of asbestos B, which project downwardly and upon which the box rests. These strips of asbestos are held in position by the plates B' B' and the bolts B² B². This case or box A is placed over the portion of the pavement to be repaired and a box or receptacle C is placed therein. The box or receptacle C is provided at its bottom with the netting C', which may be of any desired construction, but preferably strong enough to support whatever material may be placed within such receptacle.

The receptacle C is preferably made smaller than the case or box A, as illustrated in Fig. 3, and is provided with handles C² C² of any suitable description to aid in moving it about.

As shown in the drawings, these handles consist of bent rods inserted in rings C³ C³, connected with the receptacle C.

I have shown in Fig. 4 a device to be used in repairing long cracks in the pavement. In this device I use the strips B of asbestos, said strips being each between the metallic plates B⁵ B⁵ and projecting below such plates, so as to support the device as shown. A controlling-handle D is connected with these plates in any convenient manner. I prefer to have the plates inclined, as shown, in order to facilitate the removal of material placed therein.

In Fig. 5 I have shown a metal device E, provided with a handle E', this device being similar to those used in working asphalt pavements. I have shown the case or box A in the drawings as having the sides straight, but I may make such sides inclined in order to facilitate the removal of the receptacle C.

The use and operation of my invention are as follows:

When it is desired to repair a portion of the pavement, the case or box A is placed over such portion and the receptacle C is placed within said box. Molten metal, as, for example, lead, is then poured in the receptacle C, such metal coming in contact with the asphalt of the pavement. The heat from the lead heats up the surface of the asphalt pavement to be repaired without in any manner injuring the asphalt. The lead is cooled so as to be solidified when it comes in contact with the pavement, and after the asphalt has been heated sufficiently the receptacle C is removed, carrying with it the solidified lead, which may then be remelted, so as to be used again. If for any reason the asphalt is not sufficiently heated by the lead, I may take the heated iron E and pass it over such lead until the asphalt has become sufficiently heated.

I make the lower edges of the case or box A of asbestos, as shown, which is flexible and non-combustible. The object of this flexible asbestos is to allow the lead to conform to the irregularities of the opening in the pavement to be repaired, as the asbestos will allow the molten lead to fill up all such irregularities. After the asphaltum surrounding the opening to be repaired has become sufficiently heated and the receptacle C removed, as before stated, the case or box A is removed and molten asphalt mixture is raked in upon the spot to be repaired. The repairing is then completed by rolling or compressing the molten asphaltum until it is completely united with the heated asphaltum surface of the spot to be repaired.

When it is desired to repair cracks in the pavement, I use the device shown in Fig. 4, the molten lead being poured between the strips of asbestos, the process and result being similar to that described above. It will

be seen that by this process the pavement may be easily and quickly repaired without destroying any of the asphalt.

I may of course use boxes or receptacles of any desired size or shape, such size and shape depending upon the conditions to be met in the repairing of the pavement.

I have spoken of repairing pavements, but of course any such process where my device and process are applicable, I consider within the spirit of my invention. Thus, for example, I may use this process for new surfaces, an entire street or section thereof. The lead I have found by experience does not destroy the asphalt, at least not to any considerable extent, and while I have suggested the object of my invention as being to accomplish the treatment of the pavement without destroying or causing any part of it to be removed it is quite obvious that the process might be applied practically and with great advantage, even though the effect would more or less destroy the asphalt or more or less require its removal, but if the conditions of use were such or the molten material were such as to injure the asphalt still the other advantages of my invention would be present, and I do not wish to be limited to a case in which the asphalt suffers no injury at all from the application of my process. One of the reasons why in a process of this kind little or no injury is likely to occur to the asphalt is the fact that the molten metal deposited thereon excludes the air, so as to prevent the process of combustion or deterioration.

I claim—

1. A pavement-repairing device comprising a case or box adapted to be placed over the opening to be repaired, said case or box having a projecting strip of asbestos or the like extending around its lower edge and upon which the box or case is supported, a box or receptacle adapted to be placed within said box or case, and provided with a woven or latticed bottom, the whole so constructed that when molten lead or the like is poured into said inner box, it will pass through the bottom and enter the opening in the pavement and conform to the irregularity thereof.

2. The method of repairing or resurfacing pavements which consists in softening the same by the application thereto of a molten material, then removing the molten material when it is hardened, then smoothing and finishing the softened surface.

3. The process of preparing asphalt pavements for resurfacing which consists in applying to the part to be repaired a molten material, retaining such material in contact with the part until such part has been softened or heated and the molten material has been partially hardened, then applying heat to said partially-hardened material until the part to be repaired becomes sufficiently heated and softened, then removing such hardened material and finishing the surface.

4. The method of repairing asphalt pave-

ments which consists of subjecting the spot to be repaired to a heated molten material, removing such material when the spot to be repaired has been sufficiently heated, adding
5 new material and smoothing and burnishing.

5. A pavement-repairing apparatus comprising a case or box adapted to be placed over the opening to be repaired and provided at the bottom with a flexible portion, a box
10 or receptacle adapted to be placed within said box or case, said receptacle adapted to receive molten material and provided with a

perforated bottom which allows said molten material to pass through said receptacle and enter the opening in the pavement, the mol- 15 ten material adhering to the said receptacle when cool, so that it can be easily and quickly removed.

June 23, 1896.

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Witnesses:

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