

# UNITED STATES PATENT OFFICE.

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## ROAD-SURFACE PREPARATION OR COMPOSITION.

No. 924,086.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that we, WILLIAM ALFRED MEADOWS and SYDNEY CARTER MEADOWS, subjects of the King of England, residing at Liverpool, in the county of Lancaster, England, have invented new and useful Improvements in Road-Surface Preparations or Compositions, of which the following is a specification.

10 This invention has reference to compositions for applying to the surface of or dressing macadam or similar roads—or to other roads or surfaces where suitable—for the purpose primarily of preventing the rising of dust, and also of generally improving the surface and condition of macadam and similar roads; and the invention has for its object, primarily, to provide a composition which can be easily and conveniently used and applied, will last a relatively long time, and is inexpensive.

20 The characteristics of the invention which are claimed as novel, are specified or set out in the claiming clauses concluding the specification.

25 According to this invention, the composition comprises, before applying it to the surface, (a) that portion of coal-tar which remains after the removal therefrom of the middle and heavy oils—that is, coal tar which has been distilled at temperatures up to about 240° to 260° centigrade, and will therefore consist of pitch and anthracene oil; and (b) coal tar naphtha of a specific gravity of about .900 to .960, or any suitable spirit that will combine with the compound, and is cheap, which is added to the distilled tar. Thus the preparation is effected by distilling coal tar until all the lighter distillates are driven off, and only pitch and the anthracene oils remain, this condition being reached by a temperature of about 240° to 260° centigrade, as stated, and then adding to it a spirit, such as some of the crude coal tar naphtha distilled from coal-tar, with the advantageous objects and effects referred to.

30 The composition or compound containing the spirit, may be applied to a road surface in a cold state, and after a short time, the coal-tar—consisting of pitch and anthracene oil—will be left upon the surface, the spirit, or most of it, being evaporated in and by the air; its function being chiefly that of a vehicle by which the coal-tar can be used and applied without any heating operation or

apparatus, that is, with great convenience, but also having the effect of causing the compound to penetrate better into the surface, and generally improving the road dressing or covering, as above stated.

35 The quantity of anthracenes in the compound should be not less than about  $\frac{6}{8}$  to  $\frac{7}{8}$  of the weight of the pitch constituent, and if this quantity be not present in the compound when it is discharged from the still, it should be made up by the addition to the compound of anthracene oil of about a specific gravity of 1.080. The residue, that is, the tar, in this condition, constituting a composition of pitch, and all or most of the anthracene oils contained in tar before distillation, after application to the road surface and the evaporation of the spirit, or most of it, and constituting the final and active composition, will never become rigid, or be detrimentally effected, i. e., crack, or become sticky or soft by either frost or heat; or, in other words, it remains unaffected, practically entirely, under all ordinary or usual meteorological conditions; and it is a very lasting, and at the same time an effective dust raising preventing medium on roads of the kind referred to, in dry weather, and a binder in connection with same; and a mud preventing medium in wet weather.

40 The specific gravity of the composition without the spirit is about 1.20, and after the spirit is added the whole has a specific gravity of about 1.196.

45 The amount of naphtha spirit which is necessary to produce the results or effects referred to, is about from 10 per cent., to 17 per cent. of the distilled coal tar residue.

50 If desired, the composition may have added to it any substances which do not affect its nature or character as herein described, or are inert as regards its purposes and effect.

What is claimed is:—

1. The herein described dust laying composition, consisting of a mixture of that portion of coal-tar remaining after the removal therefrom of the middle and heavy oils, and coal tar naphtha, in the proportions substantially as specified.

2. A dust preventing composition for application to road surfaces in a cold state, comprising a coal tar compound, consisting of from  $\frac{1}{8}$ th to  $\frac{1}{4}$ th in weight of pitch, and  $\frac{3}{4}$ ths to  $\frac{7}{8}$ ths in weight of anthracene oil, and from 10 to 17 one-hundredths in weight of coal tar naphtha.



3. The herein described improvement in the manufacture of dust-laying compositions, consisting in effecting the preparation thereof, by distilling coal tar to the point at  
5 which it contains practically only pitch and the anthracene oils, then stopping the distillation, and subsequently adding coal tar naphtha.

4. The method of manufacturing the dust  
10 preventing composition for application to road surfaces in a cold state, consisting in distilling tar up to a temperature of between

240° C. to 260° C. to remove the middle and heavy oils, partly cooling the distilled residue of pitch and anthracene oil, and adding  
15 coal tar naphtha to the partly cooled residue.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM ALFRED MEADOWS.

SYDNEY CARTER MEADOWS.

Witnesses:

SOMERVILLE GOODALL,

WALTER MONTAGUE HARRISON.