

UNITED STATES PATENT OFFICE.

LUCIEN SURMONT AND JOSEPH MONTCOCOL, OF PARIS, FRANCE.

CARBORUNDUM COMPOSITION.

1,056,069.

Specification of Letters Patent.

Patented Mar. 18, 1913.

No Drawing.

Application filed November 5, 1910. Serial No. 590,857.

To all whom it may concern:

Be it known that we, LUCIEN SURMONT and JOSEPH MONTCOCOL, citizens of the Republic of France, and residing at Paris, France, have invented certain new and useful Improvements in Compositions Made of a Mixture of Carborundum with a Binding Agent, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to carry out the same.

The present invention has for its object a composition made of a mixture of carborundum with a binding agent used for agglomerating the same.

This composition is specially intended to form all kind of areas such as roadways, sidewalks, slab-flooring, stair steps, floors and the like.

It has already been proposed to mix carborundum with cement, lime, asphalt, saw dust and other binding materials to make these harder and more resisting to wear than they would be when used as such. But after a long study and numerous trials we have found that good results can only be obtained when the carborundum is mixed with the binding agent in proper proportions. Should the carborundum be used in insufficient quantities, the binding agent which fills the space between the carborundum grains is soon worn out (for instance through walking thereon) when the composition is used to make slabs, stairsteps and the like, and then hollows are formed between the grains while the latter project out and are so hard that it becomes impossible to walk thereon. On the other hand should the carborundum be used in too large quantities, the grains will not be sufficiently embedded in the binding and are soon partially or completely, detached by friction, whereby the area is again made unfit for use.

We have found that to attain good results the volume occupied by the carborundum in the concrete when manufactured and set in position for use must be nearly the same as that occupied by the binding agent. Starting from these data we have found that for constituting an area or slabfloor formed

with a mixture of cement and carborundum the carborundum should be embedded in the cement in the proportion of one part by volume of cement for an equal volume of carborundum. The carborundum should be first intimately mixed with the cement and then diluted with the quantity of water required to effect the binding of the cement and spread and smoothed by means of a trowel. It will be obvious that more or less cement can be used according to the size of the carborundum grains; but the mentioned proportions should not be practically departed from if good results are to be secured. It is necessary that the volume of the carborundum should be the same as of the cement.

When slabs are manufactured from a mixture of carborundum and cement by the dry process by means of an hydraulic press and are subjected to a pressure of 150 kilogr. per square centimeter, it has been found that owing to the pressure on the cement the volume of which is reduced to about the half, one part by volume of carborundum should be originally used for two parts of cement.

If asphalt is used instead of cement, one part by volume of carborundum for four parts of cement will have to be used and thoroughly mixed before compressing, owing to the compressibility of asphalt.

For floors the cement or asphalt may be replaced by cork or sawdust with magnesium chlorid as an agglutinating agent. Owing to the compression of sawdust or cork one part by volume of carborundum will have to be employed for three parts of sawdust or cork.

In these various examples mentioned it will be noticed that the proportions between carborundum and binding agent have always been determined in such a manner that when the composition is applied for use, the volume occupied by the carborundum is practically the same as that occupied by the binding agent in order that the less hard binding agent should not release the carborundum and should not produce a rough surface the projecting parts of which would be carborundum grains.

Having thus described and ascertained the

nature of our invention and in what manner the same is to be performed, what we now claim as novel is:

5 1. A paving area composed of an intimate mixture of granulated carborundum and a tough and resistant binding agent in equal volumetric proportions.

10 2. A paving area composed of a compressed mixture of granulated carborundum and a resistant compressible binding agent

in such proportions that after compression said carborundum and said binding agent shall occupy substantially equal volumes.

In witness whereof we have hereunto set our hands in the presence of two witnesses. 15

LUCIEN SURMONT.
JOSEPH MONTCOCOL.

Witnesses:

FRANÇOIS DU BOISCOURCAY,
H. C. COXE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
