

UNITED STATES PATENT OFFICE.

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TO GEORGE SEALY, OF GALVESTON, TEXAS.

FLOOR-SWEEPING COMPOUND.

1,057,923.

Specification of Letters Patent.

Patented Apr. 1, 1913.

No Drawing.

Application filed January 30, 1912. Serial No. 674,364.

To all whom it may concern:

Be it known that we, JAMES A. BODDEKER and JOHN E. STRATFORD, citizens of the United States, residing at Galveston, in the
5 county of Galveston and State of Texas, have invented a certain new and useful Improvement in Floor-Sweeping Compounds, of which the following is a full, clear, and exact description, such as will enable those
10 skilled in the art to which it appertains to make and use the same.

Compositions of this character are strewn upon the floor to lay and collect the dust during the sweeping process. Among other
15 features they must possess the property of having considerable bulk with but little weight and have the quality of absorbing and retaining moisture under ordinary atmospheric conditions. In the various com-
20 positions in ordinary use the filler—the material giving bulk to the composition and acting as the dust-collector—is formed of finely divided woody matter, such as sawdust, and often this is mixed with an oily
25 substance. Such compositions are objectionable owing to the woody matter, particularly when impregnated with an oily substance, being of a very combustible nature and also liable to spontaneous combustion
30 when stored even in small quantities under precautionary conditions.

The present invention has for its object the provision of a composition that is non-inflammable so that it will not ignite from
35 extraneous heat, and also is incombustible so that there will be no danger of spontaneous combustion when stored in any quantity under any condition. This is accomplished by eliminating from the com-
40 position all inflammable and combustible materials, and by replacing the same with non-inflammable and incombustible material, which will give the necessary bulk, have the moisture-absorbing and moisture-
45 retaining qualities required, and which will act as an efficient dust-collector.

In carrying out our invention we employ mineral wool as the filler, which is ordi-
50 narily produced for commercial purposes by subjecting slag in a molten condition to the action of a strong blast of steam. The mineral wool in its ordinary commercial form, a mass of long vitreous fibers, is not adapted to our purpose and must be spe-
55 cially treated. In preparing the wool it is

first subjected to a tumbling process where-
by the fibers are comminuted to very small particles, and to insure a uniform product the comminuted material is carefully sifted
60 to eliminate the coarser particles of fiber; the presence of fiber of any length would be objectionable as it would cause the compound to conglomerate in small bunches while being swept over the floor. The
65 sifted comminuted mineral wool is then placed in a constantly operating mixing machine, and while being agitated there is added the hygroscopic ingredients and the sand that go to make up the compound. The hygroscopic ingredients are commercial
70 glycerin and a solution of calcium chlorid. As the comminuted wool is not readily absorbent the addition of the hygroscopic ingredients is very gradual and the agitation is continuous during the mixing process.
75 The sand is of the smooth alluvial character, for sharp new sand would abrade the floor surface. The sand is also gradually added to insure a thorough mixing of the same with the comminuted wool and the hygro-
80 scopic ingredients. After a thorough mixing of the different ingredients and impregnation of the comminuted mineral wool and sand with the hygroscopic elements, the compound is sifted to eliminate any coarse
85 fibers that might remain and also to eliminate any coarse grit introduced with the sand. After the sifting the compound is allowed to stand for a week or more, ac-
90 cording to the climatic conditions, exposed to the open air and from time to time slight additions of the hygroscopic ingredients are made. By this exposure and the slight ad-
95 ditions of the hygroscopic ingredients the compound becomes a staple product and is ready for packing, and will preserve its properties under all ordinary conditions. The hygroscopic elements not only serve to retain the moisture directly imparted, but
100 also serve to absorb from the air any additional moisture that might be required to keep the product in proper condition for its purpose.

To make approximately 100 pounds of the compound we use 40 pounds of mineral wool,
105 32 pounds of calcium chlorid solution made at the ratio of 6 pounds of calcium chlorid to 1 gallon of water, one-half a pound of commercial glycerin, and the remainder of smooth sand. While these proportions are
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the preferred ones, yet they can be departed from to meet different requirements.

By reason of the fluffy character of the mineral wool it gives a large bulk to the compound, and in its comminuted form there is but little tendency of it to conglomerate in bunches while being swept over the floor, and also there is but little tendency of the compound to cake when packed. The hygroscopic elements impregnate the mineral wool and keep the particles moist so that they will perform their dust-collecting function when swept over the floor. In addition to its hygroscopic property, the glycerin to a considerable extent acts as a lubricant between the particles so that the latter will readily slide over each during the sweeping operation. The sand, which forms a comparatively small part of the compound when the bulk is considered, acts as a ballast to the much lighter mineral wool. By its superior weight the sand clings to the floor and holds the lighter mineral wool so that the latter will not fly about and scatter under the action of the broom.

A compound so formed is not only incombustible, but is of a stable character and is well adapted to its purpose as a floor-sweeping compound.

Having thus described our invention, what we claim and desire to secure by Letters-Patent is,

1. An incombustible floor-sweeping compound comprising comminuted mineral wool characterized by a fibrous fluffy condition prior to its comminution, constituting the principal bulk of the compound, mixed with a hygroscopic ingredient.

2. An incombustible floor-sweeping compound comprising comminuted mineral wool

characterized by a fibrous fluffy condition prior to its comminution, constituting the principal bulk of the compound, a comparatively heavy granular ballast mixed with the comminuted mineral wool and constituting but a comparatively small bulk of the compound, and a hygroscopic ingredient impregnating the mixture.

3. An incombustible floor-sweeping compound comprising comminuted mineral wool characterized by a fibrous fluffy condition prior to its comminution, constituting the principal bulk of the compound, sand mixed with the comminuted mineral wool to form a ballast and constituting but a comparatively small bulk of the compound, and a solution of calcium chlorid impregnating the mixture.

4. The process of making an incombustible floor-sweeping compound consisting in comminuting mineral wool, characterized by a fibrous fluffy condition prior to the comminution, to form the principal bulk of the compound, freeing the comminuted wool from the coarse gritty particles, mixing the comminuted wool with a comparatively small bulk of sand to form a ballast, impregnating the mixture while under agitation with a hygroscopic agent, and exposing the mixture to the action of the atmosphere until the mixture thoroughly absorbs moisture from the solution or from the air.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

JAMES A. BODDEKER.
J. E. STRATFORD.

Witnesses:

V. A. GILLET,
W. A. DILNER.