

# United States Patent Office.

J. S. BALDWIN AND E. N. GIBBS, OF ELMIRA, NEW YORK, AND W. H. JONES,  
OF ROCHESTER, NEW YORK.

*Letters Patent No. 61,984, dated February 12, 1867.*

## IMPROVED CEMENT FOR WALKS, FLOORS, PAVEMENTS, &c.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that we, J. S. BALDWIN, of Elmira, in the county of Chemung, and State of New York, W. H. JONES, of Rochester, county of Monroe, and State aforesaid, and E. N. GIBBS, of Elmira, county and State aforesaid, have invented a new and useful Improvement in Cements for Walks, Cellar Bottoms, Barn Yards, Barn Floors, Roads, Streets, &c.; and we do hereby declare that the following is a full and exact description thereof.

The object of our invention is to produce a cement for walks, &c., which, while it presents the desired hardness, still retains such a degree of elasticity and flexibility that it will not crack nor break by the action of heat or cold. To this end, the coal-tar which is employed (as in most cements of this kind) has combined with it a body of coal pitch from which the volatile elements have been removed, and also a mass of sand, coke, or coal ashes, furnace cinders, or iron scales, and rosendale cement, about in the proportions hereafter named.

The surface for the walk, yard, floor bottom, or street, is graded and rolled preparatory for the application of the cement. For roads and streets, a foundation of twelve inches of gravel or stone is required. Over this grade is equally spread a primary coating of coal tar and gravel, three inches thick more or less, thoroughly mixed while in a heated state. It is now ready for the finishing coat. This is composed as follows: forty gallons coal tar; ten gallons coal pitch from which the volatile elements are removed. These are placed in a kettle or boiler and heated to the boiling state and thoroughly mixed. To form a mass, take twenty bushels clear, coarse, sharp sand; ten bushels coke or coal ashes; ten bushels furnace cinders or iron scales. Mix thoroughly, and then heat so as to make the mass dry and hot. The combined coal tar and pitch are now applied to the mass while both bodies are hot, and thoroughly mixed. Add two bushels of rosendale cement and mix. The material is now ready to apply on top the primary coating. It is spread equally over the surface, and a heavy roller is drawn repeatedly over it, to compress and level it, and, as this goes on, clear lake or sea-shore sand is added and rolled in till the surface becomes dry and hard. In ordinary cements, where coal tar is employed, granular solids are generally used to produce the requisite hardness, but their effect is to render the concrete very brittle, and liable to fracture from cold, or from great pressure and violent action, since an undue proportion of such solids must be used to harden the liquid. By combining the pitch with the tar about in the proportions above indicated, the tendency is to harden; but at the same time, as the substances are of a somewhat similar nature, and possess in a high degree the elements of elasticity and yieldingness, their union insures the requisite degree of flexibility. The coal tar furnishes the necessary semi-liquid for the absorption and adhesion of the other parts, while the pitch adds consistency without brittleness, and renders the same fit for the mass. If the coal tar is rendered anhydrous at once, and the pitch not used, great friability will result. The use of sand adds body, while the ashes and scales give a degree of fineness that renders the surface smooth. The cement adds strength. The whole, combined with the body of coal tar and pitch, produces hardness with the desired degree of elasticity that will resist ordinary pressure and the action of heat and cold. This mixture is such that the summer heat will not draw the tar to the surface, and there is therefore no unpleasant odor as in ordinary cement walks made from coal tar.

What we claim as our invention, and desire to secure by Letters Patent, is—

A cement formed by the combination of coal tar, coal pitch, sand, coke, or coal ashes, furnace cinders or iron scale, and rosendale cement, substantially in the proportions herein specified.

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Witnesses:

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