

UNITED STATES PATENT OFFICE.

DAVID E. BREINIG, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN PAINTS.

Specification forming part of Letters Patent No. **178,264**, dated June 6, 1876; application filed April 26, 1875.

To all whom it may concern:

Be it known that I, DAVID E. BREINIG, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in the Preparation of Zinc-White for Paints, of which the following is a specification:

When zinc-white paints, made in the usual manner, are applied to wood surfaces, much difficulty is experienced from the peeling or scaling off of the paint after a brief exposure to the weather. This is due to the fact that while moisture causes wood to expand, it causes the common or hitherto used zinc paints to contract, thereby causing the latter to become detached from the former. The avoidance of this drawback to the use of zinc-white paint is all that is necessary to render such paint superior to that made with white lead, the zinc being free from the well-known poisonous properties of the lead.

My invention is designed to effect this result by providing against the hereinbefore-mentioned tendency of the zinc-white paint to crack, peel, or scale away from the surface to which it may be applied; and this I accomplish by combining a proportion—say, from four to five and one-half per cent.—of water with the ordinary commercial zinc-white or oxide of zinc in connection with the grinding of the material in linseed-oil.

My said invention is the result of discoveries made by me through actual experiment, and I find that the action of water or moisture upon the zinc-white after it has been, in the ordinary manner, incorporated in the manufacture of paint and applied to use, is quite different from that obtained by the addition of a suitable percentage of water to the zinc-white previous to such incorporation. In the one case the zinc-white will shrink and the paint will peel off, as hereinbefore set forth; in the other, a firm, tough body is given, which, when the paint made therewith is used, expands instead of contracting, and accommodates itself to the surface of the wood to which it may be applied, no matter to what hygrometric changes the latter may be subjected, so that by this means a paint having a finer white color than that made with white lead, firmer and more durable, and having the

important advantage of being non-poisonous, is secured.

The method that I prefer to follow in carrying my invention into practice is as follows: I first mix the zinc-white with the oil in the same proportions and in the same manner as in the ordinary operation of making zinc-white ground in oil. Having mixed the two quite thoroughly, I provide a paint-mill so constructed and arranged (by any usual or suitable means or appliances) as to be kept hot during its use in grinding. Care should be taken, however, that the heat be not sufficient to burn or injure the oil. In this mill I grind the zinc-white and oil together, and as fast as ground permit it to drop into a vessel of cold water placed to receive it. As the water becomes heated from the inflow to it of the ground material aforesaid, it should be replaced by that of a lower temperature, which is best secured by permitting a stream of cold water to flow to and through the vessel aforesaid. After a sufficient quantity of the ground material has been accumulated it should be allowed to stand, still covered with the water, during a period of from five to ten hours, or thereabout. I then draw off the water, the zinc-white having meanwhile formed a chemical combination with from four to five and one half per cent. of its weight of water. The mass is then reground in a mill, which, during this regrounding, should be kept perfectly cold. As the material issues from the mill from this its second grinding it may be at once put up in packages of the usual form and character for market.

Zinc-white as thus prepared has many of the properties of English white lead, so termed, and, in addition to the peculiar characteristics given to it, as hereinbefore fully set forth, may be covered with water in the same manner as is commonly practiced with white lead without the deleterious results experienced when ordinary ground zinc-white is covered with water in such wise.

It will, of course, be understood that the results secured by the herein-described process upon the zinc will be the same in proportionate degree when the zinc is mingled with barytes, silicates, or other substances very commonly used in connection with zinc

in the production of the cheaper kinds of paints.

I do not claim the product made by first grinding zinc-white in water and then thinning with oil, as set forth in Patent No. 121,147, as such is essentially different in composition and practical value from the product made according to my invention; but

What I claim as my invention is—

1. The herein-described material for paints, possessing the qualities of hardness and toughness, and composed of oil, ground zinc-white, and water, combined as and in the proportions substantially as set forth.

2. The process of preparing zinc-white for

paint by first grinding in oil, then treating with water, as described, and then regrounding for use, substantially as set forth.

3. The method of preparing the new article of zinc-white by first grinding ordinary zinc-white in oil in a mill heated to the requisite degree, collecting the product in cold water, subjecting the same to the continued action of the water, and subsequently grinding the said product in a mill at a low and normal temperature, substantially as herein set forth.

DAVID EGNER BREINIG.

Witnesses:

W. M. EDWARDS,
JAS. H. MATTHAEI.