

UNITED STATES PATENT OFFICE.

HOWARD W. BROWN, OF OAKLAND, CALIFORNIA.

COPYING-SHEET.

SPECIFICATION forming part of Letters Patent No. 409,826, dated August 27, 1889.

Application filed October 14, 1887. Serial No. 252,376. (No specimens.)

To all whom it may concern:

Be it known that I, HOWARD W. BROWN, a citizen of the United States, residing in Oakland, in the county of Alameda and State of California, have invented a new and useful Portable Copying-Sheet, of which the following is a specification.

My invention relates to improvements in copying-sheets for letters, circulars, and other written matter. I generally employ paper of about the thickness and quality of light commercial note-paper. I prepare the surface with a thin coating, smoothly laid on, about the thickness of an ordinary coat of varnish or paint, of the following compound: To three pounds of glycerine, one pound of gelatine, one pound of water, three ounces of glue, four ounces of alum, which I dissolve and combine by placing in a vessel over steam heat and stirring carefully until a perfect mixture. I spread this upon the surface evenly in a thin coat. I then further perfect the surface by sifting over the surface a finely-pulverized compound of lycopodium and alum, in proportion of one-fourth ounce of alum to two ounces of lycopodium.

This compound is gradually incorporated with the coating, and produces a soft, velvety surface, which remains in a dry and still very yielding and elastic state. Two of these surfaces may be placed together without liability of sticking, even in the hottest climate. When used for copying, the surface is washed off with a soft wet sponge, and as soon as dry the surface is ready to apply the letter, circular, or other writing or drawing to be copied. With good aniline ink a hundred or more copies may be made clear and distinct from one sheet thus prepared. I prepare these sheets either from sheets already the size required for letters, &c., or from roll-paper and cut afterward to the required size. I generally produce these sheets in a book form for the retail trade, each sheet forming a leaf, to be torn out when used, in the same manner as the letter-sheet is taken from the ordinary writing-tablet. I also supply the same in the form of a roll, to be unrolled when required for use. Prepared in this manner the surface remains perfectly good for many months,

and is never liable to granulate or crack, and insures portability.

I am aware that my invention may be employed where other material than the thin paper is used for a portable copying-sheet or plate, as the soft dry surface described is of great advantage, even where much thicker or heavier sheets or plates are used.

It will not crack or granulate, and remains pliable even when exposed to the atmosphere for a great length of time, as I have tried it for several months without seeing any decrease in its value as a copying-sheet.

When French chalk is used, its effect upon the composition is only temporary, as it absorbs all the moisture of the compound and a chemical change takes place in which the sheet becomes hard, dry, and granulated, causing it to rapidly deteriorate and in a short time become totally unfit for use, while by the employment of powdered lycopodium and alum combined the copying-sheet is preserved in a pliable and moist state indefinitely, and I have found by experience that lycopodium, when combined with alum, is the only substance which produces this result and is permanent in its effect. The lycopodium enters the composition, and, filling the pores, hermetically seals the surface, which entirely prevents the evaporation of moisture and is of the utmost importance. The lycopodium produces a soft, smooth surface, prevents the sticking together of the sheets when placed face to face, and acts as a preservative, while the alum acts as an astringent and serves the purpose of toughening and hardening the surface, causing the same to become firm and compact.

I am aware that it is not new to use glycerine and gelatine with water, and that alum has been used in this connection to prevent the sheets from being sticky. I am also aware that a coloring-powder has been used with such; but I am not aware that any one has heretofore made a composition of glycerine, gelatine, water, glue, and alum for the purposes specified, and another composition of alum and lycopodium to be used in connection with the first-named composition; and I am furthermore not aware that any one has

used all of the ingredients in the proportions stated.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, 5 is, in copying-sheets—

As an improved article of manufacture, a copying-sheet having an absorbent coating of glycerine, gelatine, water, glue, and alum,

combined in the proportions specified, and on this a surface-coating of pulverized alum and 10 lycopodium, as set forth.

HOWARD W. BROWN.

Witnesses:

H. E. PARRY,
O. HOPPE.