

# UNITED STATES PATENT OFFICE.

ROBERT A. ADAMS, OF NEW YORK, N. Y.

IMPROVED COMPOSITION FOR MAKING TYPES FOR PRINTING WALL-PAPER, OIL-CLOTH, AND OTHER FABRICS.

Specification forming part of Letters Patent No. **95,405**, dated October 5, 1869.

*To all whom it may concern:*

Be it known that I, ROBERT A. ADAMS, of the city and county of New York, in the State of New York, have invented a certain new and Improved Composition for Use in Forming Types or Analogous Printing-Surfaces; and I do hereby declare that the following is a full and exact description thereof.

My invention is intended mainly for large coarse work. I have used the word "types" above only to indicate the function of the material.

My invention is not so well adapted for the forming of small, separate, movable types as for preparing extended surfaces, such as are used in printing wall-paper, carpets, and fabrics generally. I can prepare it either in the form of a flat surface or of a cylindrical surface or roller. It is capable of being melted, in a heated state, and of being cut, trimmed, and engraved in a cold state. It will endure oil-colors and also water colors, and will carry and transfer more color than any other material known to me having equally good qualities in other respects.

I will proceed to describe my invention as applied to the manufacture of a printing-roller. It will be understood, however, that the same material and the same general method of working may be applied to produce flat surfaces.

I take ten pounds of gum-shellac, one quart of alcohol, one pound of gum-camphor, one and a half pound of gum-benzoin, and two pounds of fine wool flock, by which I mean the shearings from fine woolen goods. Melting the other materials together, constantly stirring, in a clean kettle, I add the wool flock last, and as soon as it is thoroughly incorporated pour the semi-fluid mass into a mold and allow it to harden.

It will be understood that in molding a roller a stout shaft, and, if desired, a large body very nearly the full size of the interior of the roll, may be previously introduced and held firmly in a central position, so that my composition shall form only a thin coating—say of a quarter to half an inch in depth upon the surface. A larger proportion of gum-camphor gives a greater degree of softness to the composition when cold, so that I can vary the hardness within wide limits by simply vary-

ing the quantity of camphor. The alcohol is expected to evaporate very soon, and any increase in the quantity does not permanently soften the material.

My composition adheres with great force to nearly all ordinary material. This fact makes it difficult to find a suitable material in which to mold the rolls or other forms. I have succeeded tolerably well with plaster; also with iron brushed over and in effect coated thinly with black-lead. I have succeeded best of all by making the mold too large and lining it with a composition of glue and molasses, the same as is used for ordinary distributing-rolls in printing-presses. Pouring my composition in this, it partially melts the soft material in which it is inclosed, but does not mingle therewith, and becomes sufficiently chilled to maintain its own form before the surrounding material is melted. The glue and molasses adhering may be readily removed by water.

I can greatly cheapen the composition for some classes of work by the introduction of finely-ground cork in liberal quantities. I propose for coarse work to add two or three times as much cork by weight as the entire mass of the other materials; but the presence of the woody material interferes with the production of very fine figures or devices. The surface is hard, but sufficiently elastic to adapt itself admirably to the conditions required in printing. It can be cut with great facility by sharp gravers, and there is of course no grain and no tendency to split or break in one direction more than in another. Very fine lines can be supported on it with great perfection, and the elasticity of the material allows angles to be depressed a little, and thus avoids any bad effect from want of perfect adjustment in the engraving.

In preparing flat surfaces, or, to some extent, in preparing rolls, the molds may be made to approximate very closely to the engraving desired, and the work may be thus molded very near the desired pattern. It may afterward be finished with the graving-tool.

I ascribe to the flock in my composition a large part of its peculiar property of taking up and carrying color. Some materials will hardly receive colors. Others receive and carry them well. Wood presenting the end



of the grain to the work is a very good material in respect to the facility of carrying color; but wood is objectionable for other reasons.

My composition exceeds any other material known to me which can be worked in a similar manner. It will lay the color on oil-cloth or other difficult surfaces with a very heavy body.

My printing-surface is not liable to shrink or swell with changes in the weather or other cause. This is a very important point. When made without the fine particles of cork, it may be cast or carved to a very great degree of fineness, rivaling copper-plate. The material can be melted with great heat and recast many times. I can give a very light color to the material, and also somewhat modify its mechanical properties by incorporating fine paris-white. It is an advantage to do this to a sufficient extent in some varieties of work to allow a design to be penciled on the material with an ordinary lead-pencil.

The capacity for melting and remolding adds greatly to the economy of the use of my composition, while its high melting-point makes it practically insensible to the action

of the sun and the like gentle changes of temperature liable to occur under ordinary circumstances.

Having now fully described my invention, with the means whereby I prefer to carry it out, what I claim as new, and desire to secure by Letters Patent, is—

1. The employment of flock as an element in a composition for printing-surfaces, in the manner and for the purpose herein set forth.

2. The employment of gum-camphor in a composition for printing-surfaces, in the manner and for the purposes herein set forth.

3. The compound for printing-surfaces, composed of flock, camphor, shellac, alcohol, and benzoin, in about the proportions and applied substantially in the manner herein described.

4. The employment of fine cork in combination with gummy material for a composition for printing-surfaces, as herein set forth.

In testimony whereof I have hereunto set my name in presence of two subscribing witnesses.

ROBERT A. ADAMS.

Witnesses:

C. C. LIVINGS,  
A. HOERMANN.