

UNITED STATES PATENT OFFICE.

EDWIN COWLES AND ALFRED H. COWLES, OF CLEVELAND, OHIO.

STEREOTYPE-BACKING POWDER OR FILLING.

SPECIFICATION forming part of Letters Patent No. 294,588, dated March 4, 1884.

Application filed November 23, 1882. (No specimens.)

To all whom it may concern:

Be it known that we, EDWIN COWLES and ALFRED H. COWLES, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Stereotype-Backing Powder or Filling; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

Our invention relates to an improved filling or backing powder to be used in the preparation of matrices in the art of stereotyping, as will be hereinafter described, and specified in the claim.

It is well known that in nearly all of the large newspaper-publishing houses the newspapers are printed from stereotype-plates. It becomes necessary, therefore, to prepare these plates very rapidly, and the saving of a very few minutes in their manufacture is of the greatest importance. The process is substantially as follows: A soft spongy paper, properly moistened, is placed on the type, and with a brush or similar instrument is beaten and pressed down upon the face of the type and into the interstices and spaces in and between the types. Then a filling of a mud, made, usually, from an imported clay, or a peculiar clay obtained in what is or has been the bed of the Mississippi river, is placed upon the paper that has already been pressed upon the type and into the cavities between them, and is made to fill all of these interstices and cavities, when another paper or straw board is placed on top, and the whole subjected to more or less pressure, according to the consistence of the mud used. A matrix thus formed is then dried and becomes the matrix upon which the stereotype-plate is cast. A matrix thus made is faulty for the following reasons: First, it takes too long to dry and become fit for use; second, the mud used does not fill the interstices between the type in such manner as to make an entirely satisfactory matrix; third, the mud or filling, when dried, has not sufficient tenacity and strength to resist the weight of the type-metal, when poured, and flattens

out, thereby making a plate that often needs more or less chipping before it can be used. To prevent this last fault, recourse has been had to filling the depressions partially with felt, tin, straw-board, &c., to add to the strength of the matrix in these places.

Our invention is designed to remedy all of these faults by substituting a new filling material in lieu of that heretofore used, that will dry quickly, and when dried have sufficient hardness and tenacity to resist the weight of the metal in casting the plates, thereby producing a plate superior to those now in use, and one which solidifies and becomes ready for casting therefrom in about one-half the time ordinarily occupied in using a backing or filling made of clay, mud, or of plaster-of-paris to the same condition. We have discovered that by the use of a mixture made of powdered lime and a substance containing glutinous matter, when used as a filling in place of the mud made simply of clay or plaster-of-paris or other material formerly used, all the difficulties above recited are substantially obviated. Of these substances we prefer to mix lime with common wheat or rye flour as the glutinous substance, to be used in about the proportion of four parts of the former to one part of the latter, though these proportions may be greatly varied without departing from our invention. The two substances may be mixed together before using, which is the preferable way; or one may be placed in the matrix first and the other upon it, and then moistened by steam or otherwise. The lime will rapidly absorb the moisture, and with the glutinous substance will quickly form a firm and tenacious cement. This will dry and be ready for use in but little more than half the time required by the filling or backing now in common use, and is firmer and better adapted to perform its functions when dried.

Matrices made by use of our invention may be used several times over, if desired, and the filling remains so compact and firm that less type-metal is required, better plates are secured, and less time consumed than by the use of the matrices at present known, or by following the ordinary method of producing them.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

5 As an article of manufacture, a filling or backing powder for matrices for stereotype-plates, composed of lime and a glutinous substance, substantially as and for the purpose set forth.

In testimony whereof we sign this specification, in the presence of two witnesses, this 16th day of October, 1882.

EDWIN COWLES.

ALFRED H. COWLES.

Witnesses:

ALBERT E. LYNCH,
S. G. NOTTINGHAM.