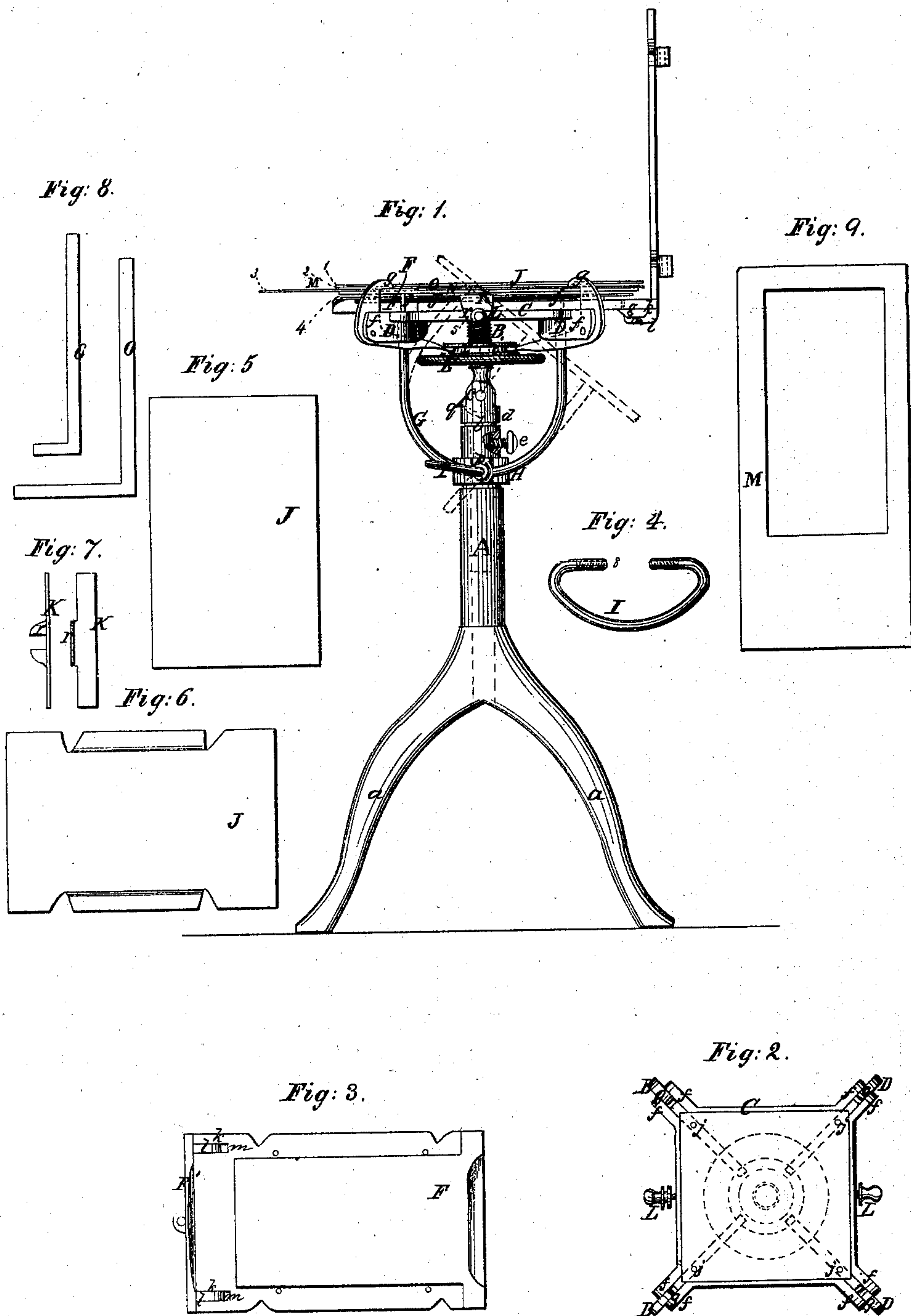


*W. Nelson.*  
*Mach. for Casting Stereotype Plates.*  
*N<sup>o</sup> 62,058.      Patented Feb. 12, 1867.*



Witnesses:  
*W. B. Strong*  
*for a Service*

Inventor:  
*W. Nelson*  
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# United States Patent Office.

WILLIAM NELSON, OF BOSTON, MASSACHUSETTS.

*Letters Patent No. 62,058 dated February 12, 1867.*

## IMPROVEMENT IN THE CONSTRUCTION OF PAPIER-MACHE MATRICES FOR STEREOTYPE PLATES.

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

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM NELSON, of Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and useful Improvement in the Construction of Papier-Mache Matrices for Casting Stereotype Plates; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to fully understand and make use of the same.

This invention relates to a new and useful improvement in the construction of papier-mache matrices for casting stereotype plates, described as follows:

To two parts, by measurement, of good wheat flour made into well-boiled stiff paste, I add one part of Paris white, moistened with water so as to be of rather stiff consistency, and a little plumbago, and mix the whole together in a delf basin or on a marble slab until the different substances are perfectly incorporated together and a homogeneous mass obtained throughout. This paste, thus formed, is evenly and thoroughly spread with a soft brush on a thick description of either white or printed paper, or what printers term "slip-sheets" or waste paper. On this pasted surface a thinner "slip-sheet" is spread; and, on the latter, a sheet of French or other good linen-fabric paper. The layers of paste and paper, arranged or made as above, are placed between wet muslin cloths, with a zinc plate at intervals of about every six. They are then put under a common wood-screw press or between pressing-boards, and a weight placed on them in order that they may be kept even; and the slight pressure causes a perfect saturation in the admixture of paper and pulp. When matter of an ordinary character is to be moulded, such as solid book pages, the papier-mache composition will be in good condition for moulding in about forty-eight hours; but when the type is very small, or small and large type mixed in the same page, such as are frequently required for job printing, or when very wide blanks occur, as in music, the composition requires greater distension properties in order to penetrate into the small interstices of the small type, and also to go down into the deep indentations, and the time of keeping the papier-mache composition should be considerably extended, say from three to four days. The operator, therefore, must exercise his judgment in this matter. Should any circumstance occur to prevent the moulding of the composition layers when ready for use, they may be kept in proper condition by sprinkling their edges with water, say about once a week. By this means they may be kept ready for use several months. The papier-mache layers are moulded and the matrices formed as follows: The types are slightly oiled, the layer placed upon them, and a piece of wet cloth (muslin) placed over it, and the operator beats the composition layer into the face of the type by means of a properly constructed brush. When the beating process is completed the type or form, with the layer upon it, is removed to the "hot earth," which is heated by gas, steam, or in any proper way, and two or three successive sheets of waste paper, and paste containing a small portion of plumbago, are added to the back of the layer. The layer, being thus thickened on the type, one or more thick even pieces of woollen cloth are put on the back over the portion last applied, and the matrix and type placed between two heated surfaces, a steam chest and plate, and, by means of a screw or other means, subjected to a pressure. The woollen cloth absorbs the moisture and renders the papier-mache layer hard and solid over the face of the type, while the other portions, of course, will be less consolidated. This is an important feature, as the sunken portions in the matrix, where the face of the type is formed, will be very solid, and insure a perfect casting, while the prominent portions, which produce the indentations in the stereotype plate, will, in consequence of being less consolidated, serve during the casting operation to conduct the air from the sunken portion of the matrix and face of the type. The thickness of the blankets to be placed on the back of the papier-mache layer should be in accordance with the size of the prominent portions of the matrix, that is to say, the interstices in the types or form, so that the cloth and papier-mache may be pressed into said interstices and the papier-mache made to fill them perfectly. This insures the stereotype plate being cast with the sunken portions of a requisite depth, no chiselling out of the "blanks" or sunken portions being required, the plate being ready for use as soon as cast. This chiselling out of the blanks, or sunken portions of a stereotype plate, is not only attended with a loss of time, but the plate is greatly deteriorated thereby. The cutting away of the "skin" or surface metal allows the alkali, which is used from time to time to clean the ink from the plate, to act upon the metal and produce what is termed a "rotten face," and very frequently corrodes or eats the metal around the "kerned" letters *j, g, f*, etc., so as to completely undermine them and cause them to break off under the slightest pressure. The plumbago, which forms one of the ingredients of the papier-mache com-



position, is an important feature. It rapidly conducts heat, and when the melted metal comes in contact with the matrix the latter is prevented from burning in consequence of the radiation of heat from it. A great number of casts may be taken from one matrix.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

A papier-mache matrix for casting stereotype plates, composed of flour paste, Paris white, and plumbago, and moulded in the manner substantially as herein set forth.

Witnesses:

WM. F. McNAMARA,  
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WM. NELSON.