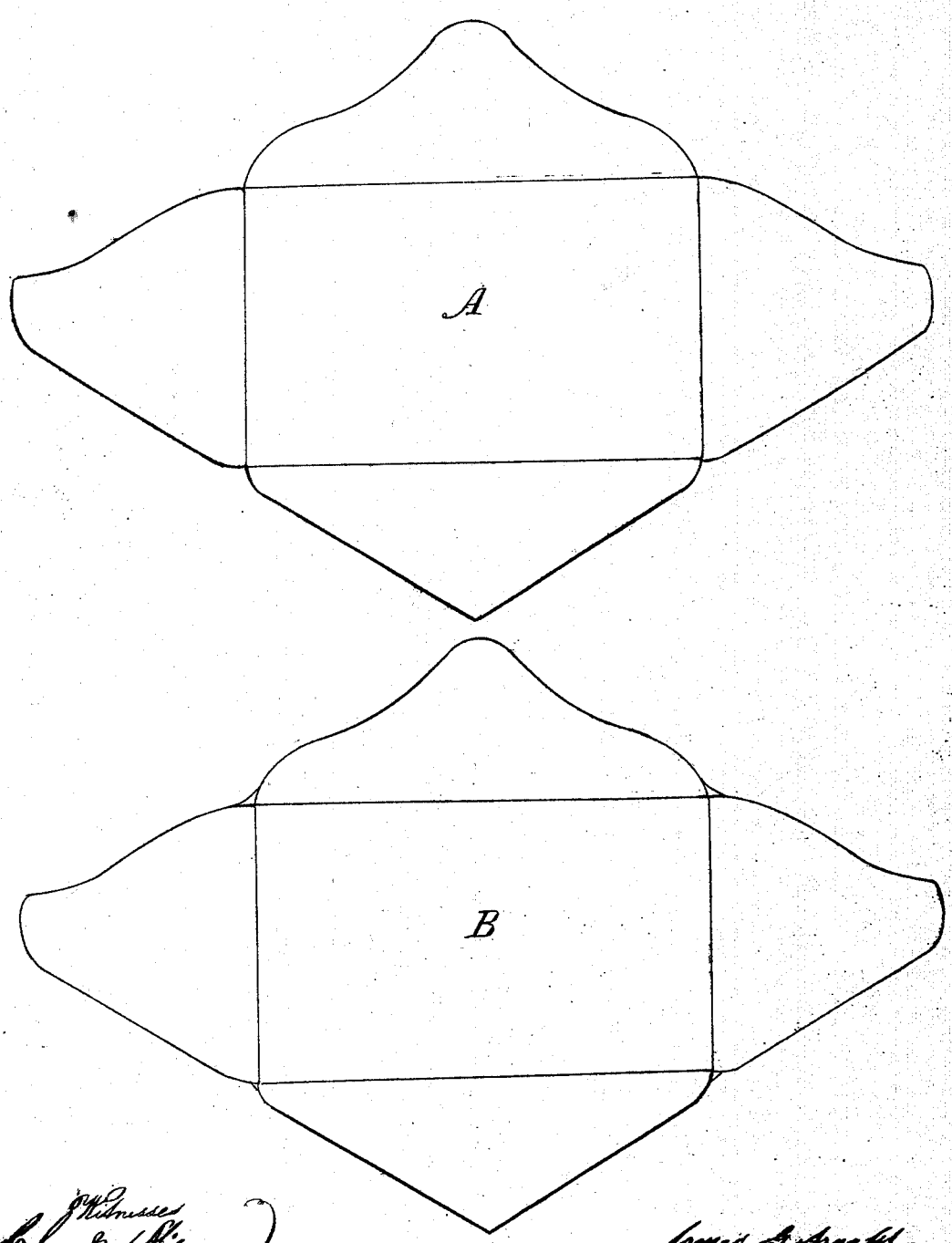
J. G. Arnold,

Envelope.

No 47,508. Patented. May. 2. 1865



Witnesses
Charles Ellis Hill
Charles A. Chase

James G. Arnold

UNITED STATES PATENT OFFICE.

JAMES G. ARNOLD, OF WORCESTER, MASSACHUSETTS.

LETTER-ENVELOPE.

Specification forming part of Letters Patent No. **47,508**, dated May 2, 1865.

To all whom it may concern:

Be it known that I, JAMES G. ARNOLD, of the city and county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in the Manufacture of Envelopes; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing.

In the manufacture of envelopes the paper is cut into form called "blanks," (before folded,) and in order to cut the paper to the best advantage and work economically it is customary to cut a number at once by a press or similar means, fitting them at once ready in form to be folded; and in running the folding-machine it is necessary that they be very accurately adjusted, and that the blanks be accurately fed, to avoid the least error in the position of the paper, that the fold may be made to correspond exactly with the cut, for if it does not the result is imperfect work.

The object of my invention is to obviate the necessity of absolute accuracy in the position of the paper and consequent running of the machine, and still make perfect work, making the fold and cut agree; and to these ends its nature consists in cutting the blank with a part left at the corners to be cut in each one by a suitable cutting device in the folding-machine to correspond with the fold and its position in the machine, and thus always make perfect corners.

The accompanying drawing illustrates my invention and its operation.

A is a blank as heretofore cut by the press. B is one cut on my plan, the red lines indicating the parts left to be cut afterward by the aforesaid cutting device, to correspond to the fold which is shown by the blue lines.

It will be seen that A can be folded only where indicated to make perfect corners; but the form of B allows considerable variation, for as long as the corners fall on the paper it will make perfect work, as the part inclosed by red lines is cut to agree with the position of the fold, instead of the fold having to agree with the cut.

The mechanism to accomplish this cutting will necessarily vary in detail in the different envelope-making machines now in use; but the principles of said mechanism may be described as follows, to enable any one skilled in the art to apply and use my invention: Cutters of suitable forms are placed in the machine, so that one of each pair will be below or under the paper or blank as it is received in place, and the other above the paper, either attached to a plunger sliding on it or hung on pivots of their own, to be operated before the plunger, or creaser, or folders, as the case may be, cutting each corner to correspond in position with the working parts of the machine.

The under cutters may be either a part of the creasing-bed or the die through which the blank is forced, or may be separate or attached to or be a part of the folders or wings, and the upper ones be stationary, as an almost endless variety of forms and application and methods of operating them might be enumerated, some better in one machine and others in others, but all governed by the above-described general principles, which are deemed sufficient to enable any to apply them to their machines.

In operating the machines this latitude of position enables them to be run very much faster and make better work, and is the more necessary, as paper is peculiarly liable to be affected by electricity on its surface, or to spring or be jarred out of place, but as each blank comes to position and is held the cut is made to correspond properly with the lines of fold, although each may vary a little in position when the machine takes hold of it, the precise form or outline of the blank or the corner pieces cut away being not essential.

I claim—

Cutting envelope-blanks in the manner and for the purposes substantially as set forth and described.

JAMES G. ARNOLD.

Witnesses:

CHARLES M. MILES,

CHARLES A. CHASE.