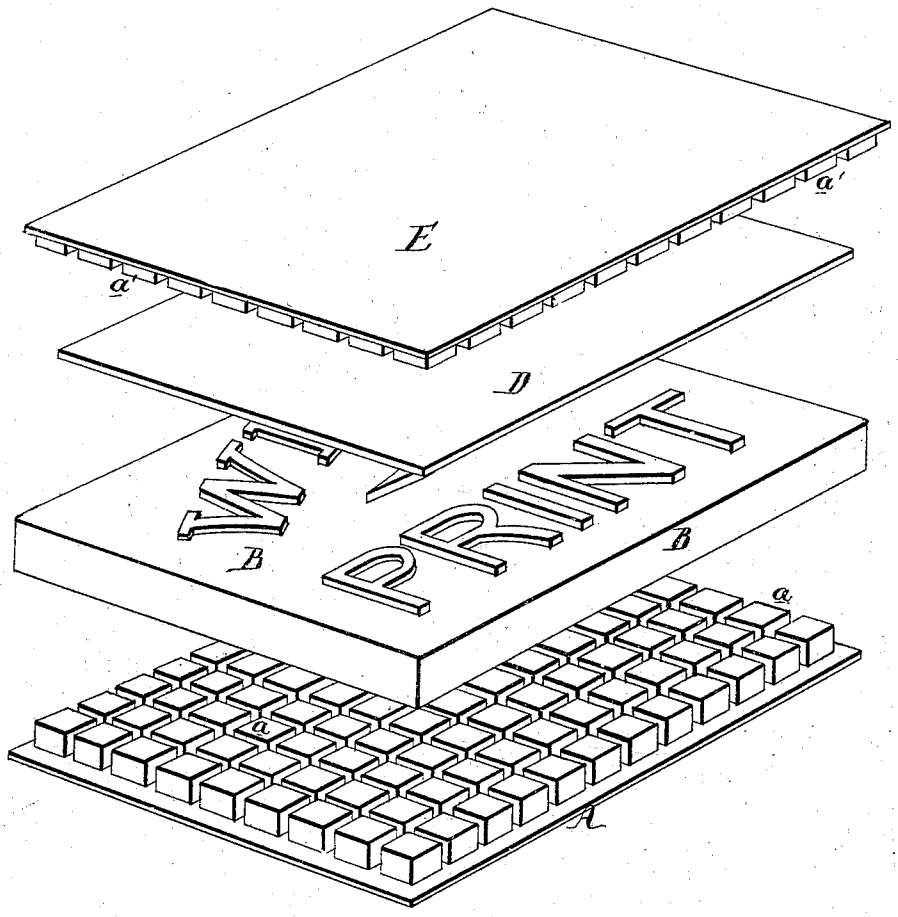
J. L. WELLS.

ELASTIC-UNDERLAYS FOR PRINTING ON GLASS.

No. 170,136. Patented Nov. 16, 1875.



Witnesses,
Harry Smith
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Joseph L. Wells
by his Attorneys,
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UNITED STATES PATENT OFFICE.

JOSEPH L. WELLS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN ELASTIC UNDERLAYS FOR PRINTING ON GLASS.

Specification forming part of Letters Patent No. **170,136**, dated November 16, 1875; application filed September 17, 1875.

To all whom it may concern:

Be it known that I, JOSEPH L. WELLS, of Philadelphia, Pennsylvania, have invented certain Improvements in Elastic Underlays for Printing on Glass, of which the following is a specification:

The object of my invention is to print uniform impressions on flat sheets of glass without danger of breaking the same. This object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, which represents my improved printing appliances in perspective.

A is a flat sheet of pasteboard or other suitable material placed on or against the bed of a printing-press, and to this sheet are secured a series of small elastic pads, *a*, by preference of rubber, of a quadrangular shape, and arranged in rows a short distance apart, as shown. B is the flat printing-block, which may be made of wood, mounted with such letters, figures, or ornamental characters, in relief, as the design to be printed on the glass may require, the printing-surfaces being preferably of rubber or other equivalent elastic material. D is the plate of glass to be printed on, and E is a sheet of pasteboard or other equivalent material, to the under side of which are cemented or otherwise secured elastic pads *a'*, similar to those on the sheet A. The printing-block B is placed on the pads *a* of the said sheet A, the latter being, as before remarked, placed on or against the bed of the press, the sheet E, with its pads, being attached to the platen of the press.

A sheet or sheets of thin paper may be interposed between the pads *a'* and the glass D.

In using these appliances all that is necessary is to ink the printing-surface of the block B, place the sheet of glass on the inked surface, and then apply the platen and impart to the same the required pressure.

Any ordinary printing-press may be used in connection with the above-described appliances.

My invention is especially designed for printing on common glass, every sheet of which is, with rare exceptions, thicker in some parts than others, and has frequently a waved surface, so that its fracture would always be the result of attempts to print on it without the intervention of a yielding bed or yielding platen, or both.

After many experiments I have found that the best-yielding medium is the series of pads arranged a short distance apart, so that each pad shall act as an independent spring, which can yield without affecting the neighboring pads, the spaces between the said pads permitting them to expand laterally under pressure, without crowding on each other. Hence, in the case of the pads on the platen, they will accommodate themselves to the waved surface of the glass, while the printing-block B will, owing to its elastic support, accommodate itself to the varying thickness of the sheet of glass; and all this tends to impart to the same a uniform impression from the printing-surface, and at the same time prevents the fracture of the glass, even if the printing-surface be of wood, although I generally use a surface of rubber.

I prefer to use the system of pads both on the bed and platen; but valuable results as regards obviating the fracture of the glass and obtaining an uniform impression may be attained by using the pads in connection with the bed only, or on the platen only.

I claim as my invention—

1. The combination, with a flat printing-block, B, of a series of elastic pads, *a*, arranged a short distance apart from each other and interposed between the flat bed of a printing-press and the said printing-block, as and for the purpose specified.

2. The combination of a series of elastic pads, *a*, with a flat printing-block, B, and with the platen of a printing-press, between which and the said block the pads are interposed, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH L. WELLS.

Witnesses:

HUBERT HOWSON,

HARRY SMITH.