

S. SMYTH.

MACHINES FOR UNITING SHEETS OF PAPER.

No. 184,736.

Patented Nov. 28, 1876.

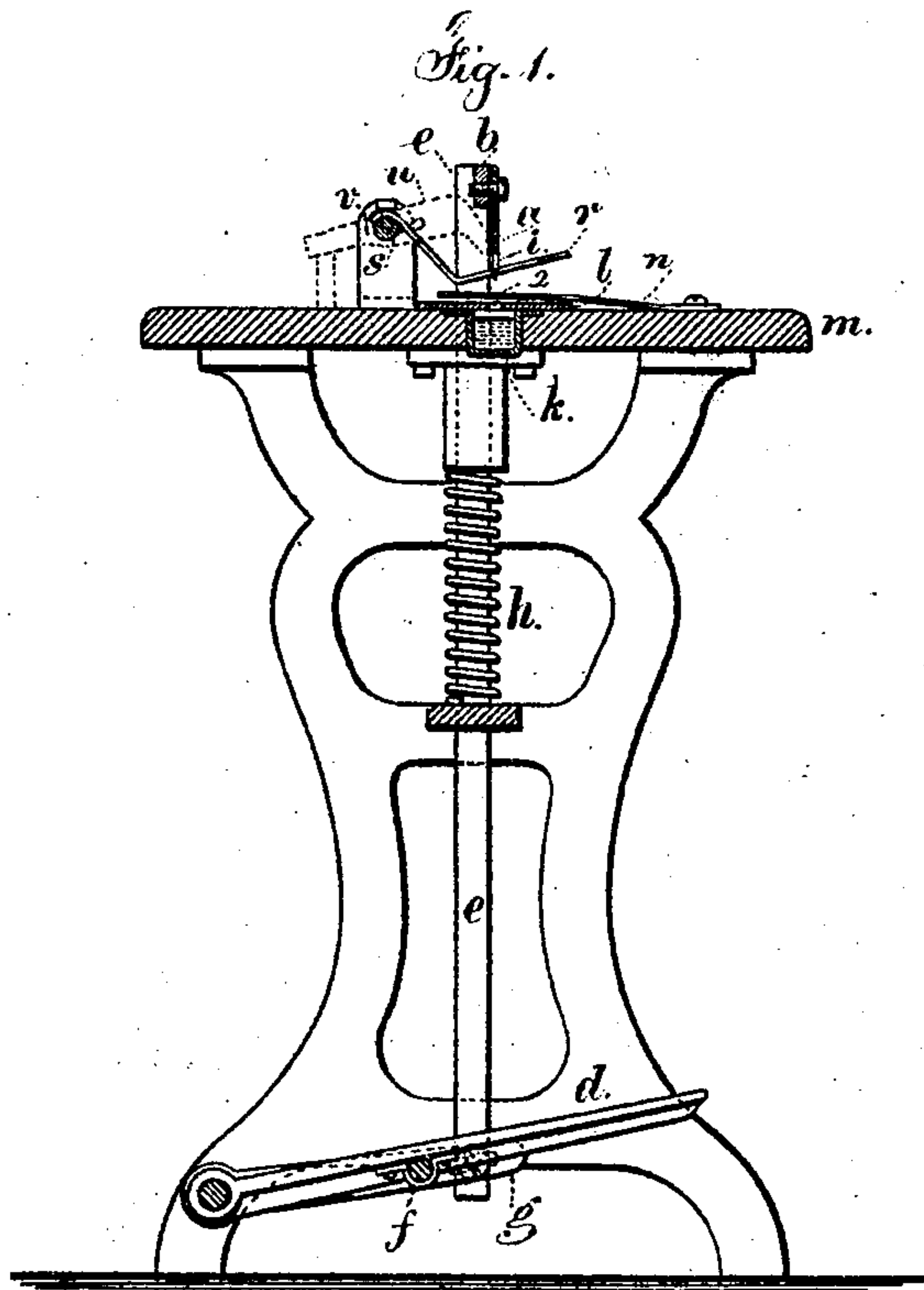


Fig. 3.

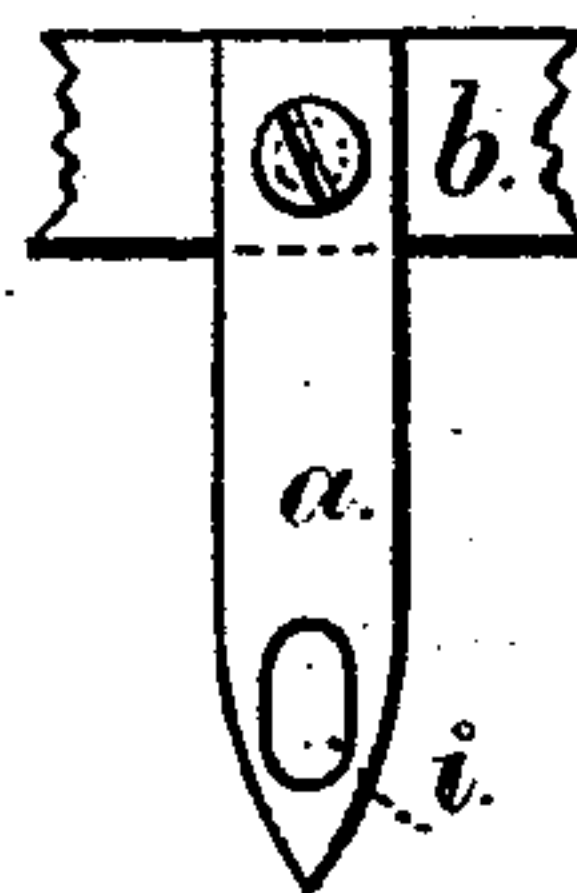
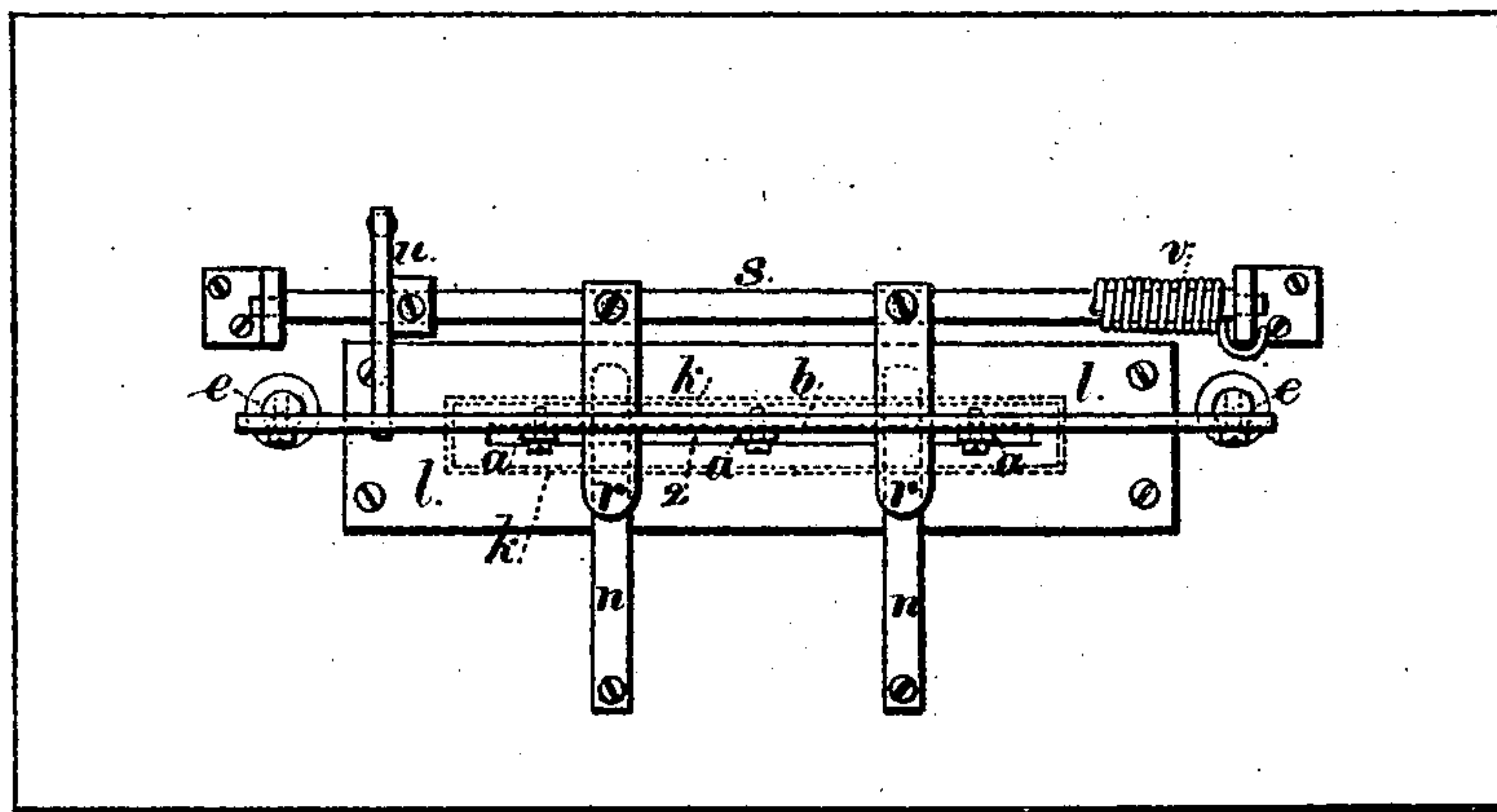


Fig. 2.



Witnesses.

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Inventor

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per L. W. Perrell
att.

UNITED STATES PATENT OFFICE.

SAMUEL SMYTH, OF EAST BRIDGEWATER, PENNSYLVANIA, ASSIGNOR, BY
MESNE ASSIGNMENT, OF TWO-THIRDS OF HIS RIGHT TO GEORGE L.
WARD, OF BOSTON, AND ORIANNA S. SMYTH, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR UNITING SHEETS OF PAPER.

Specification forming part of Letters Patent No. **184,736**, dated November 28, 1876; application filed
April 3, 1876.

To all whom it may concern:

Be it known that I, SAMUEL SMYTH, of East Bridgewater, in the county of Susquehanna and State of Pennsylvania, have invented an Improvement in Attaching Sheets of Paper Together, of which the following is a specification:

Sheets of paper for pamphlets, periodicals, &c., have been attached together by sewing, by wires, and by tapes or similar connections passing through perforations, and paste has been used to hold the sheets together, such paste being applied in the folding-machine.

My invention is for applying paste at perforations made through the sheets, in such a manner as to unite the sheets firmly together by the paste or other adhesive material introduced by the perforating-instrument.

In the drawing, Figure 1 is a vertical transverse section of the machine employed by me. Fig. 2 is a plan of the same, and Fig. 3 is an elevation in larger size of the perforating and pasting blade.

The perforating and pasting knife *a* is made in such a manner that paste or other adhesive material will be supplied by the same to the surface of the paper through which such knife or blade passes. The knife *a* is preferably made as a lance-point, with a hole or holes, *i*, so that the adhesive material entering such hole will be carried by the blade through the paper, and the paste will be spread upon the fibers of the paper that spring into such holes as the blade passes into and through the sheets.

The knife may be corrugated or otherwise constructed so as to hold the required quantity of adhesive material.

Two or more knives or blades, *a*, are mounted in the head-bar *b*, at distances apart adapted to the object intended, and this bar *b* is moved up or down by a treadle, *d*, or otherwise.

I prefer and use the guide-rods *e*, cross-bar *f*, and links *g* for drawing down the cross-bar *b*, and the springs *h* serve to throw the parts up again after the sheets have been perforated.

The paste-receptacle is preferably a trough,

k, with a cover, *l*, having a long slot, 2, through which the blades *a* pass into the paste to receive their supply of adhesive material, and then spread the same upon the inner surfaces of the perforations made by the knives through the paper.

It is preferable to employ a table, *m*, for receiving the sheet to be operated upon, and the trough *k* is inserted into this table.

The spring-fingers *n* serve to lift the sheets from the cover *l* as soon as the pressure is released; and in order to hold the sheets in place while the knives pass through them, I employ the spring-fingers *r* upon the rock-shaft *s*, and upon this rock-shaft *s* there is an arm, *u*, (shown by dotted lines in Fig. 1,) against which the cross-bar *b* presses as it is drawn down. A spring, *v*, moves the rock-shaft and raises the fingers after the bar *b* has been raised, so that the fingers *r* hold the sheets down until the knives *a* have been drawn entirely out of the paper.

The penetrating-blade may pass into paste before going into the paper, and thereby convey the adhesive substance with it.

This manner of pasting sheets is very advantageous, as it consumes but little time, and holds the material with great firmness, especially when the sheets are slightly pressed before the adhesive material hardens.

I claim as my invention—

1. A penetrating-blade having a receptacle for paste or similar material, and mechanism for moving the same through the sheets of paper or other material, in combination with a receptacle for supplying such paste, whereby the sheets are caused to adhere together, substantially as set forth.

2. The method herein specified of uniting sheets of paper or similar material by means of paste or other adhesive substance, that is introduced into perforations in the sheets by the perforating implement, substantially as set forth.

Signed by me this 1st day of March, 1876.
SAMUEL SMYTH.

Witnesses:

KATE N. HILL,
E. C. FORDHAM.