J. C. SMYTH.

MACHINE FOR STITCHING BOOKS WITH STAPLES.

No. 187,189. Patented Feb. 6 1877.

Fig. 1.

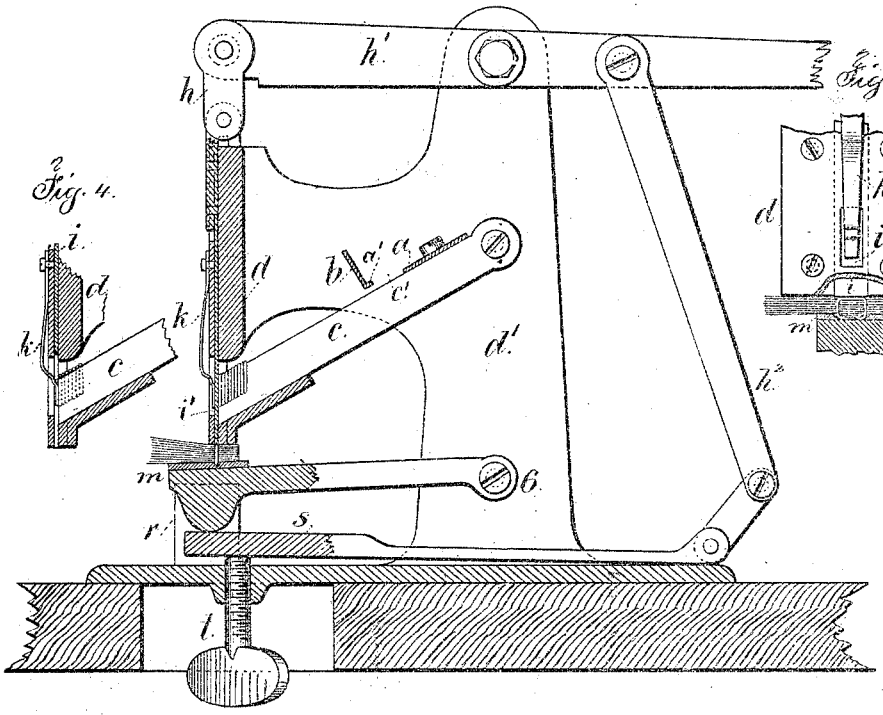


Fig. 3.

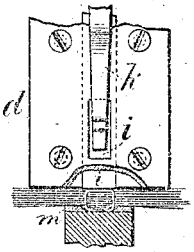
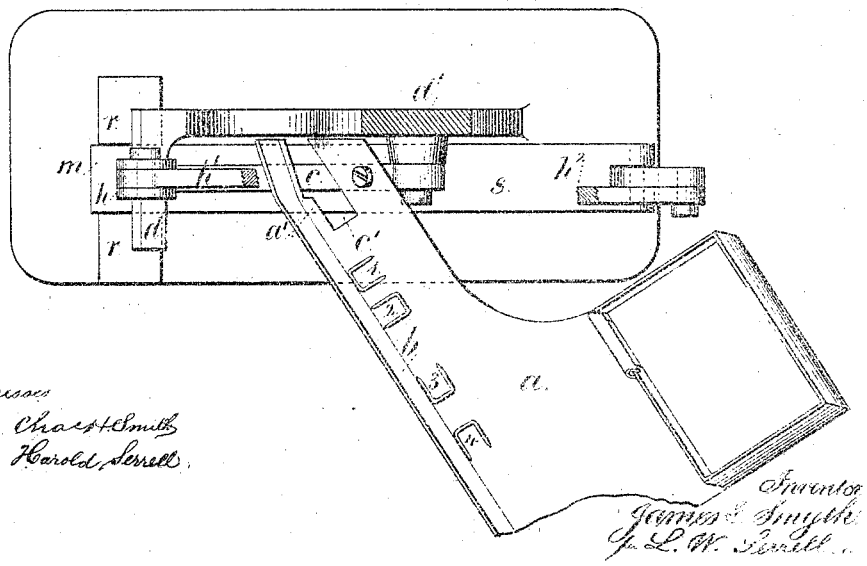


Fig. 4.

Fig. 2.



Witnesses
Chas. H. Smith
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UNITED STATES PATENT OFFICE.

JAMES C. SMYTH, OF LYNN, ASSIGNOR TO GEORGE L. WARD, OF BOSTON, AND ORIANNA S. SMYTH, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR STITCHING BOOKS WITH STAPLES.

Specification forming part of Letters Patent No. **187,189**, dated February 6, 1877; application filed December 4, 1876.

To all whom it may concern:

Be it known that I, JAMES C. SMYTH, of Lynn, in the State of Massachusetts, have invented an Improvement in Machines for Stitching Books with Staples, of which the following is a specification:

In Letters Patent No. 41,180 granted January 5, 1864, to D. M. Smyth, a machine is described for sticking staples into blinds.

The present invention is an improvement upon the same, and relates to a means whereby the sticking mechanism is adapted to forcing the staple into and through a pamphlet or book, and clinching the same to hold the leaves together.

In the drawing, Figure 1 is a vertical section of the staple-machine. Fig. 2 is a plan of the same, and Fig. 3 is an elevation partially in section.

The staples are supplied by a shaking hopper, or otherwise, upon the inclined plate *a*, and slide down the same against the inclined fence *b*, and along the same toward the staple-bar *c*. There is an opening at *c'* in the plate *a*, leaving a narrow strip, *a'*, of the plate *a*, which is of such a width relatively to the staple that, if a staple presents itself in the position of the staple 1, it slides along this strip *a'* and falls over the bar *c*, and hangs thereon with the points downward; but if a staple slides along down the gutter with the points against *b*, as at 2, the bar portion of the staple overbalances the same, causing the staple to fall over the edge of *a'*, through the opening *c'*, into a receptacle; and if a staple approaches and passes upon the strip *a'*, in the position shown at 3 or 4, the points are not supported, and it falls through the opening *c'*. By this construction, only those staples that are in a proper position to fall upon the inclined bar *c* are used, and the others are to be returned and scattered upon the plate *a* by hand or otherwise.

The operator preferably supplies the staples by hand, from time to time, upon the plate *a*, so that there will be a sufficient number upon the staple-bar *c* for use in the machine.

The staple-bar *c* is supported in an inclined position by the standard *d'* and head-block *d*, and in this head-block *d* is a channel of a corresponding sectional size to the staple, so that the staple can be moved vertically therein; and in this channel there is a plunger, *i*, connected by the link *h* to the lever h^1, so that it can be moved up and down, and upon each downward movement said plunger *i* presses upon the staple that is at the lowest end of the staple-bar *c*, and presses back the spring *k* and carries the staple down the channel in the head-block, and drives it through the pamphlet or book that is presented at the bottom of the head-block, as hereafter described.

It is to be understood that, as the plunger *i* is drawn up above the staple-bar *c*, the spring *k* returns to its position against the end of the staple-bar and supports the lowest of the staples, as seen in Fig. 4, so that the staples cannot run off the end of the incline, but are retained, so that only one at a time is taken away by the plunger.

The lever h^1 is operated in any suitable manner. I prefer a treadle and rod.

The die *m*, that supports the book or pamphlet through which the staple is driven, is made with a recessed face, as seen in Fig. 3, so that the ends of the staple are bent by sliding down the inclined surface.

It is important that the book or pamphlet be pressed firmly against the under edge of the head-block, so that the staples will be guided in their channel while being driven. I therefore place the die *m* upon an arm that is pivoted at 6 and guided between the bed-blocks *r*; and beneath this die *m* there is a wedge-plate, *s*, that is moved endwise by an arm, h^2, from the lever h^1 that is linked to said plate *s*, so that the latter slides endwise as the lever h^1 is raised and depressed.

As the lever h^1 is moved to operate the plunger *i* and drive the staple, the wedge-plate *s* is moved endwise to raise the die *m* and press the book or pamphlet firmly up against the lower edge of the head-block *d*, and hold the same while the plunger drives the staple, and the ends thereof are turned up against said die *m*; and in order to adapt the machine to different thickness of the books or

pamphlet, the screw *t* is provided, beneath the wedge-plate *s*, to raise or lower that and the die *m*.

As the plunger rises the wedge-plate *s* is moved endwise, bringing the thinner part of said plate beneath the said die *m*, so that the latter may descend and relieve the pressure upon the book and allow of its removal and the insertion of another book in its place.

I claim as my invention—

1. The inclined plate *a*, provided with the fence *b*, opening *c'*, and strip *a'*, in combination with the staple-bar *c*, substantially as and for the purposes set forth.

2. The combination of the sliding wedge-plate *s* and screw *t*, with the die *m* and staple-driving mechanism, substantially as set forth.

Signed by me this 31st day of August, A. D. 1876.

J. C. SMYTH.

Witnesses:
D. M. SMYTH,
F. J. BAXTER.