

J. W. BICKNELL.

MACHANISM FOR AUTOMATICALLY SELECTING AND PRESENTING STAPLES.

No. 190,268.

Fig. 1.

Patented May 1, 1877.

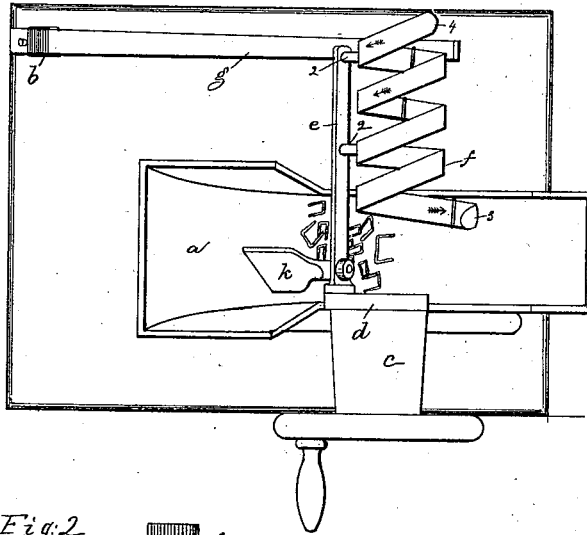


Fig. 2.

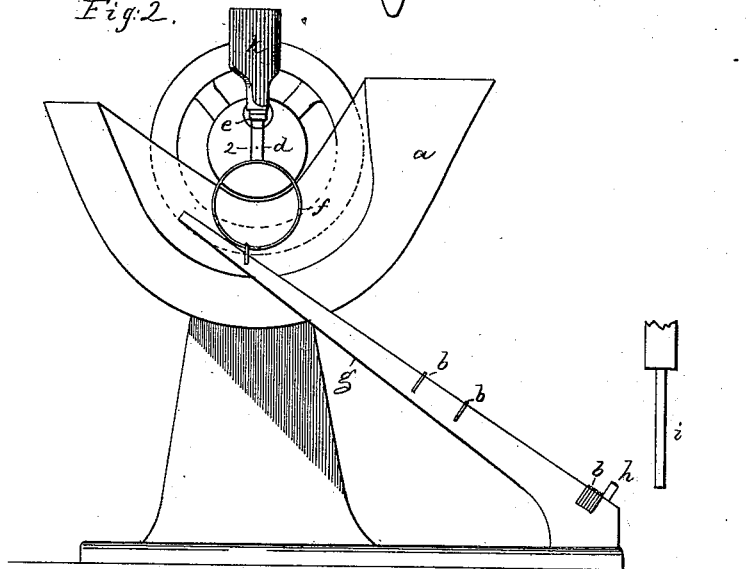


Fig 3



Witnesses.  
W. J. Pratt.  
C. S. Perkins.

Inventor.  
James W. Bicknell  
per Corby & Gregory Attys.

# UNITED STATES PATENT OFFICE.

JAMES W. BICKNELL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO BOSTON MACHINE COMPANY, OF SAME PLACE.

## IMPROVEMENT IN MECHANISMS FOR AUTOMATICALLY SELECTING AND PRESENTING STAPLES.

Specification forming part of Letters Patent No. 190,268, dated May 1, 1877; application filed April 9, 1877.

### *To all whom it may concern:*

Be it known that I, JAMES W. BICKNELL, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Mechanism for Automatically Selecting and Presenting Staples, of which the following is a specification:

This invention relates to mechanism to automatically select and present staples to a proper driver to be driven.

The invention is applicable as an attachment or as a co-operative part of a machine to unite paper—as pamphlets and books—or to unite leather with staples or in a blind-staple machine.

The invention consists in combining a device for automatically picking up the staples, with a receiver for the staples so picked up, the receiver retaining the staples all in one uniform position, ready to be removed therefrom to be driven.

Figure 1 represents a plan view of this invention; Fig. 2, an end elevation thereof; and Fig. 3, forms of staples which this machine is adapted to pick up and drive.

In book-stapling machines it is customary to form the staples singly from wires just before they are driven.

The addition to such a machine of the staple-forming parts increases its cost unnecessarily.

One machine to make staples can be made to furnish staples for a large number of driving-machines.

In this my invention the staples are formed by a machine specially designed for the purpose, and of any desired shape, according to the use to which they are to be put.

Such staples are placed in a hopper, in bulk, and are taken therefrom by a picking-up device, (in this instance of my invention shown as a coil,) which, as it rotates, carries the staples laterally along the coil, and deposits them upon the receiver, down or along which they slide to a suitable stop or position, from which they are liberated or taken, as it is desired to move them into line with

a driver, to be driven into the materials to be united or to be provided with staples.

The hopper *a*, sustained upon a suitable part of the machine, is supplied with staples *b* of any desired shape.

A bearing, *c*, supports a shaft provided with a disk, *d*, to one edge of which is attached a shaft, *e*, having fingers *2 2*, to which is attached a coil, *f*.

This coil is, as represented in the drawing, made from a flat strip of metal.

It will be preferably made of such shape as to fit the upper or top part of the interior of the staple.

The point 3 of the picking-up device *f* picks up a staple (one or more) as the coil rotates, and as it rotates such staple is carried laterally along to the heel 4, which moves with such relation to the receiver *g* as to enable the ends of the staple held upon the last round of the coil to pass below the top surface of the receiver, and then the picking-up device, in its further rotation, withdraws its heel 4 from the staple, leaving it upon the receiver, down or along which it slides until arrested by a suitable stop, *h*, in practice made movable, or by a staple.

The staples may be liberated when the stop is withdrawn, and a suitable finger or slide may be made to detach the staples singly, and transfer them to a proper position to be driven by a driver, which may be located as at *i*, and be operated in any usual way.

An agitator, *k*, connected with the shaft *e*, agitates the staples at each rotation of the coil or picking-up device.

I may use this picking-up device with any usual devices for driving staples in books held upon a supporting-surface, in the ordinary way.

I claim—

1. The combination, with a staple-receiver, of a picking-up device adapted to automatically pick up staples from a mass of staples, and present them upon the receiver, substantially as described.

2. The shaft *e*, revolved in a circular path, in combination with its attached picking-up device, made as a coil, and adapted to pick up and move a staple laterally and discharge it, substantially as described.

3. The hopper, the shaft *e*, the picking-up device *f* attached thereto, and the agitator, in combination with the receiver, all substantially as described.

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

JAMES W. BICKNELL.

Witnesses:

G. W. GREGORY,  
W. J. PRATT.