(No Model.) 3 Sheets—Sheet 1.

J. BERRY.

MACHINE FOR FEEDING NEEDLE BLANKS.

No. 281,961. Patented July 24, 1883.

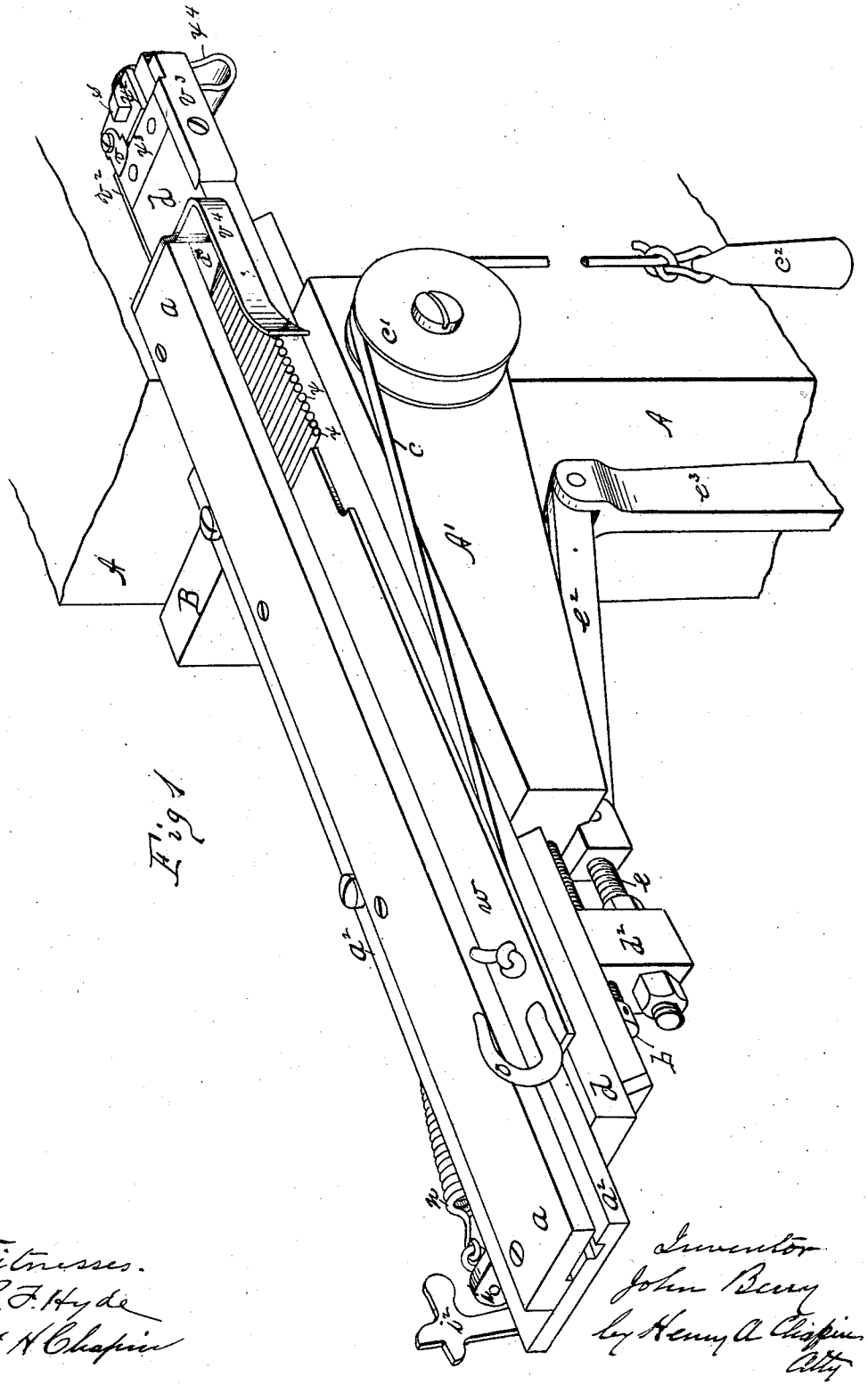


Fig 1

Witnesses.
R. F. Hyde
Wm. H. Chapin

Inventor
John Berry
by Henry A. Chapin
Atty

(No Model.) 3 Sheets—Sheet 2.

J. BERRY.

MACHINE FOR FEEDING NEEDLE BLANKS.

No. 281,961. Patented July 24, 1883.

Fig 2

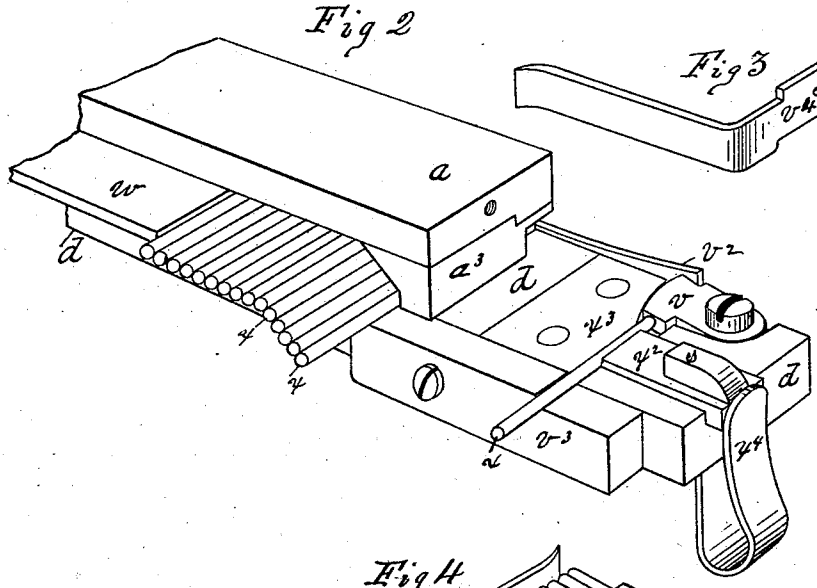
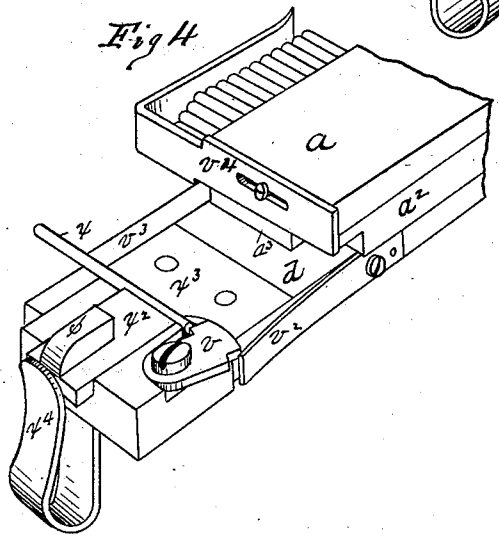


Fig 3

Fig 4



Witnesses
R. F. Hyde
Wm H Chaplin

Inventor
John Berry
by Henry A Chaplin
Atty

(No Model.) 3 Sheets—Sheet 3.

J. BERRY.

MACHINE FOR FEEDING NEEDLE BLANKS.

No. 281,961. Patented July 24, 1883.

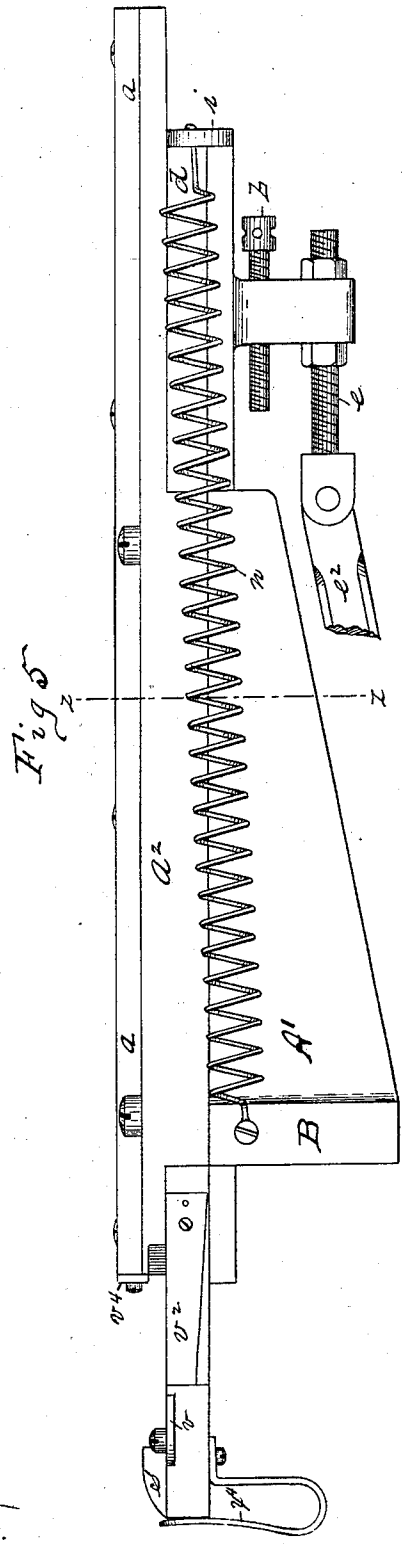


Fig 5

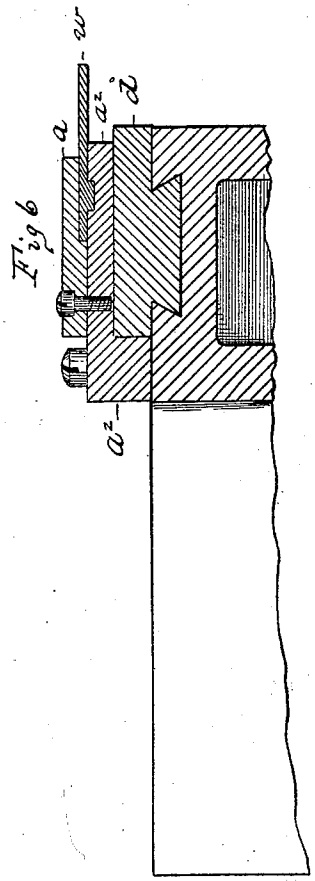


Fig 6

Witnesses
R. F. Hyde
Wm. H. Chapin.

Inventor
John Berry
by Henry A. Chapin
Atty

UNITED STATES PATENT OFFICE.

JOHN BERRY, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO THE NATIONAL NEEDLE COMPANY, OF SAME PLACE.

MACHINE FOR FEEDING NEEDLE-BLANKS.

SPECIFICATION forming part of Letters Patent No. 281,961, dated July 24, 1883.

Application filed February 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN BERRY, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Needle-Blank-Feeding Machinery for Compressing-Machines, of which the following is a specification.

This invention relates to improvements in the construction of devices for feeding wire needle-blanks to compressing-machines, the object being to simplify the usually complicated machinery of this class, and to render said devices more positive and sure in their operation.

In the drawings forming part of this specification, Figure 1 illustrates said needle-feeding devices constructed according to my invention. Fig. 2 is a perspective view of the front side and end, and Fig. 4 a like view of the rear side and front end, of the machine. Fig. 3 is a view of a blank-guide removed from the parts shown in Fig. 2. Fig. 5 is a rear elevation. Fig. 6 is a transverse section on the line *z z*, Fig. 5.

In the drawings, A indicates a portion of the compressing-machine, to which the feeding devices are attached. A′ is the bed. B is a bracket on bed A′. *d* is a needle-clamp slide. d^2 is a connection-block on slide *d*. *e* is an adjusting-screw in block d^2. *b* is a stop-screw. e^2 is a connecting-rod. e^3 is a lever. *a* a^2 are needle-blank holders. a^3 is an inclined blank-guide. v^4 is an end guide for the blanks. *i* is an arm on slide *d*. i^2 is a slide-stop. *n* is a retracting-spring. *w* is a blank-pusher. *o* is a hand-hook on pusher *w*. *c* is a cord; *c′*, a cord-pulley. c^2 is a weight. *x x* indicate blanks. x^2 and x^3 are blank-clamps. x^4 is a clamp-spring. *v* is a pivoted blank-abutment. v^2 is an abutment-spring. v^3 is a blank guide-block.

Like letters refer to like parts in the several figures.

The blank-feeding devices herein shown and described are adapted to be employed with the needle-compressing mechanism and with the blank-carrying chuck and its operating devices which are shown in my Patent No. 249,822, dated November 22, 1881, or with other similar machinery for doing the work therein described.

The bed A′ of the feeding device is provided with a bracket, B, standing at right angles to the side of said bed, and by which said device is secured in a proper position on the machine, a portion of which is represented by A. The upper surface of the bed A′ is grooved longitudinally, and the slide *d* is provided on its under side with a dovetail-shaped tongue to fit said groove, and is adapted to slide and thereby be guided on said bed. Said slide *d* has a block, d^2, on its under side, through which an adjusting-screw, *e*, passes, and is secured thereto by proper nuts, as shown. Said screw *e* carries on one end a pivot-block, to which one end of a connecting-rod, e^2, is pivoted, and the opposite end of said rod is pivoted to the end of a lever, e^3, which is caused to have a vibratory motion through any suitable connection with the compressing-machine, and whereby the slide *d* is given a reciprocating motion on bed A′.

In practice a cam or other similar device is employed for actuating lever e^3, by which a positive movement of the end of said lever from the part A of the machine is imparted thereto, and a like positive motion in the same direction is thereby given to the slide *d*. The return movement of said slide is effected by the retracting-spring *n*, which is secured to an arm, *i*, on said slide and to the bed of the device. A stop-screw, *b*, is provided in block d^2, whereby the degree of the movement of said slide by said spring is regulated.

The forward end of the slide *d* is provided with needle-blank grasping or clamping devices, as follows: A sliding clamp, x^2, is fitted in a short longitudinal groove at the end of slide *d*, and is forced inward by a spring, x^4, which bears against its end toward a clamp-plate, x^3, on said slide *d*. A block, *s*, stands upon the surface of said clamp x^2. A pivoted needle-abutment, *v*, is located on slide *d*, so that its free end will be opposite the meeting line of the clamps x^3 and x^2, and a flat spring, v^2, bears against the outer edge of said abutment. A guide-block, v^3, is located on the

edge of slide *d*, near its front end, and is provided with an offset on its upper side, the vertical side of which is on a line with said meeting edges of the clamps x^2 x^3.

Two needle-blank holders, a^2 *a*, are secured upon the rear edge of the bed A′, the latter over the former, and holder *a* is so formed as to leave a long chamber between it and the holder a^2 for the reception of the needle-blanks *x x* and the blank-pusher *w*, which is adapted to slide therebetween, guided by a groove in the holder a^2, as shown in Fig. 1. Said blank-pusher is carried against the line of blanks *x x* by the weight c^2, connected thereto by the cord *c*.

An inclined guide-block, a^3, is secured on the under side of the holder *a*, and the end of the holder a^2, just back of said guide-block, is cut away to leave a passage from the end of said chamber between said holders to the upper face of the slide *d*.

A blank-guide, v^4, is secured adjustably to the end of the holder *a*, and its free end extends in front of the ends of the blanks *x x*, as shown in the several figures.

A hook, *o*, is placed on the pusher *w*, by which the operator can draw the latter back away from the blanks when it becomes necessary, and a slide-stop, i^2, is pivoted on the rear side or edge of the holder a^2, which may be dropped back of the arm *i* on slide *d*, and retain it against the action of spring *n* in a rearward position, if need be.

The operation of my improvements, in conjunction with the aforesaid compressing mechanism and chuck devices, is as follows: The blank-pusher *w* is drawn back, and a suitable number of blanks *x x* is placed in the chamber between the holders *a* a^2 in the position shown, the said pusher being then released and allowed by the action of weight c^2 to crowd against the line of blanks, forcing the forward one of the series to be carried against the upper face of the slide *d*, guided downward by the inclined side of the guide-block a^3. The slide *d* now moves back by the action of lever e^3, and carries the meeting edges of the clamps x^3 x^2 about under the said foremost needle-blank, and as said slide arrives about to this point in its movement the end of block *s* on the clamp x^2 is carried against the block a^3, causing the last-named clamp to come to a stop, while clamp x^3 moves from it and leaves an opening between the edges of said two clamps, into which said foremost needle-blank is forced. The slide *d* now moves forward, carrying block *s* away from block a^3, and spring x^4 acts to force clamp x^2 against the blank, and the latter is thus tightly grasped between said clamps, and is carried out to the position shown in Figs. 2 and 4, with its rear end against the edge of the pivoted abutment *v*. The aforesaid chuck now advances and seizes the projecting end of said separated blank, and if the latter be a little too long the said abutment is forced against the spring *v*, and no injury results to the blank or to the mechanism, and as the blank is drawn out of said clamps said abutment swings back to its former position. The end guide, v^4, serves to force any blanks which may project beyond a proper line as they move forward back into said chamber between the holders *a* a^2. Thus, as above described, this feed device holds the blanks between stationary holders having a chamber between them for receiving said series of blanks side by side in a line, and embodies means for sliding said series bodily and causing the foremost of said blanks to be deposited between clamps on a movable slide or blank-separator, which carries the blank to a position directly before the open end of a chuck, which seizes it, draws it from between said clamps, and, immediately that the slide *d* moves back to seize another blank, moves forward, revolving meanwhile, and holds the free end of said blank between the dies of the compressing-machine, which reduce it to proper size, all substantially as described relative to the action of said chuck and compressing mechanism in my said patent, to which reference may be had.

It will be seen that the disposition of the holders *a* a^2 and the inclined block a^3 is such that they unitedly form a blank-chamber having a curved end, whereby the forward end of the line of blanks is guided downward against the face of the slide *d*. It is obvious, however, that the holders *a* a^2 may be set vertically, or nearly so, and deliver the blanks in a straight line to said slide, thus obviating the necessity of curving the end of said chamber.

The stop-screw *b* provides for arresting the forward movement of slide *d* at such a point as will bring the end of the blank held by the clamps x^2 and x^3 directly before the end of said chuck, so that the latter can properly seize it. The adjusting connecting-screw *e* provides for determining the stopping-point of said slide in its rearward movement so exactly as to bring the opening between the clamps x^2 x^3 directly under the foremost blank, which is carried against the slide *d*, so that said blank will unfailingly enter therebetween.

What I claim as my invention is—

1. In needle-blank-feeding mechanism for compressing-machines, the stationary blank-holders *a* a^2, having a blank-chamber between them, a blank-pusher to slide in said chamber, and mechanism, substantially as described, for grasping and moving sidewise from said chamber one needle-blank at a time, combined and operating substantially as set forth.

2. In combination, the stationary blank-holders *a* a^2, having a blank-chamber between them, a blank-pusher to slide in said chamber, the slide *d*, adapted to have a reciprocating motion under the end of said blank-chamber, and mechanism, substantially as described, located on said slide for seizing the needle-blanks *x* one at a time, substantially as set forth.

3. In combination, the stationary blank-holders *a* a^2, the pusher *w*, the slide *d*, provided

with the clamp-plate x^3, the clamp x^2, provided with the block s, and the spring x^4, substantially as set forth.

4. The slide d, having the abutment v, pivoted thereto, and the spring v^2, to bear against said abutment, all combined and operating substantially as set forth.

5. In combination, the slide d, the spring n, the adjusting connecting-screw e, lever e^3, rod e^2, and stop-screw b, substantially as set forth.

JOHN BERRY.

Witnesses:
R. F. HYDE,
WM. H. CHAPIN.