2 Sheets—Sheet 1.

C. HINZ.

Blind-Wiring Machine.

No. 207,181. Patented Aug. 20, 1878.

Fig. 1.

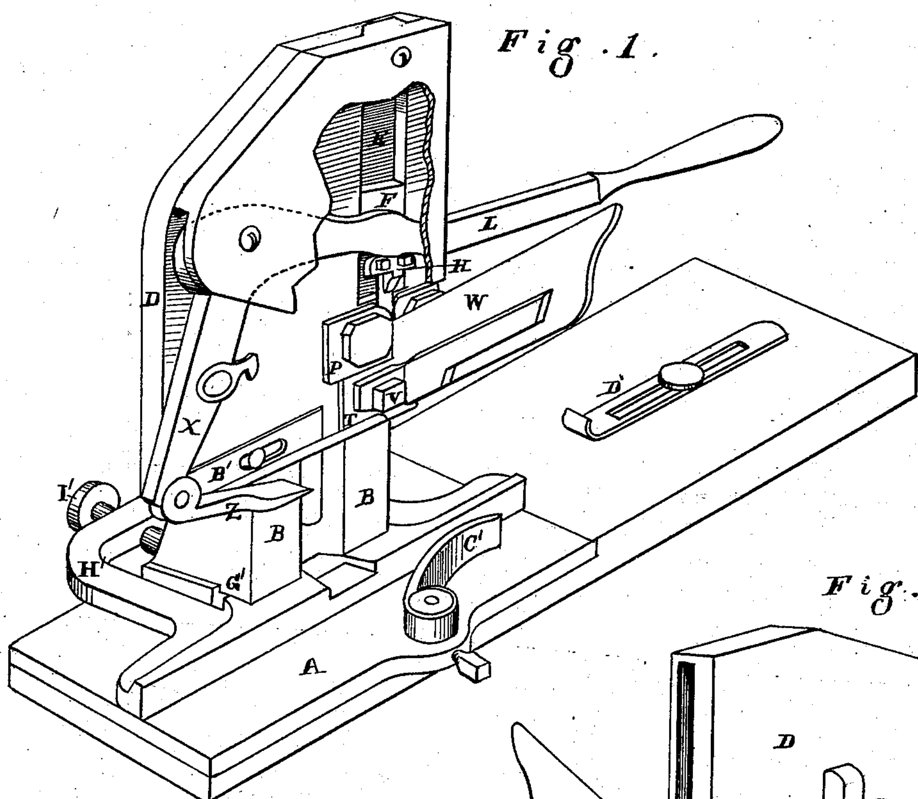
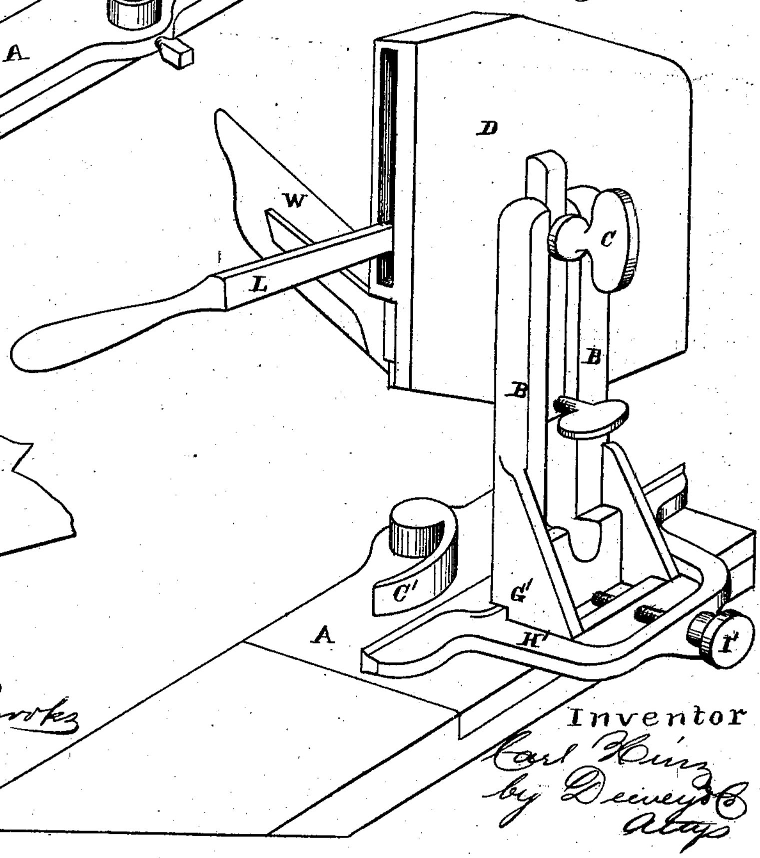
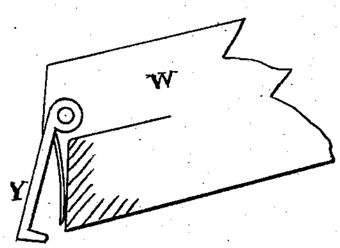


Fig. 2.





Witnesses
Frank A. Brooks
Chas. G. Yale

Inventor
Carl Hinz
by Dewey & Co.
attys

C. HINZ.

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Fig. 3.

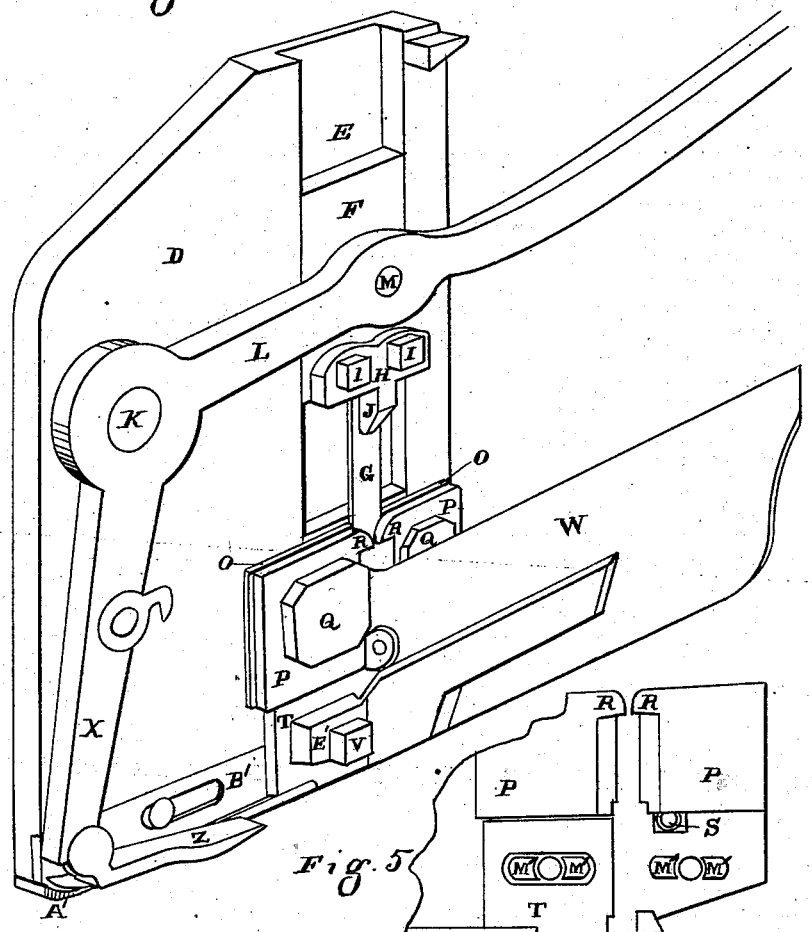


Fig. 4.

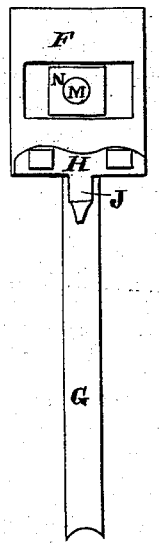


Fig. 5.

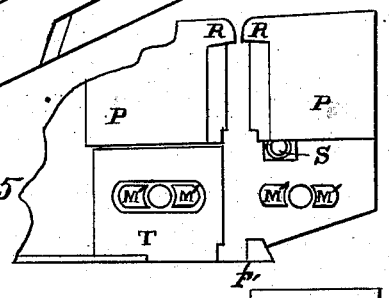
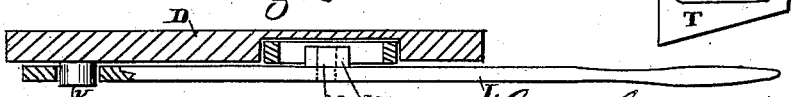


Fig. 6.



Witnesses:
Frank N. Brooks
Chas. G. Vale

Inventor
Carl Hinz
by Dewey & Co
Attys

UNITED STATES PATENT OFFICE.

CARL HINZ, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN BLIND-WIRING MACHINES.

Specification forming part of Letters Patent No. **207,181**, dated August 20, 1878; application filed June 11, 1878.

To all whom it may concern:

Be it known that I, CARL HINZ, of the city and county of San Francisco, and State of California, have invented an Improved Blind-Wiring Machine; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to certain improvements in that class of devices which are employed to drive the wire staples which secure movable blind-slats to the rod by which they are operated; and it consists, mainly, in a novel combination of operative parts, which will be more fully described by reference to the accompanying drawings, in which—

Figure 1 is a view of my machine. Fig. 2 is a rear view of the same. Fig. 3 is an enlarged view with front plate removed. Figs. 4, 5, and 6 are details of construction.

My apparatus is intended to be worked by hand, and is therefore provided with a lever for that purpose, and only needs to be supplied with the staples, and to have the rods and slats fed to it as fast as the staples can be driven.

Let A represent the bed-plate of my machine, which is supported on a suitable frame or table. On this bed-plate is a slotted vertical standard, B, as shown, and through the vertical slot pass the thumb-screws C, by which the casing D is secured to the standard. These thumb-screws C are screwed into the casing D, and the shoulders on their outer ends press against the back part of the standards, so that by releasing the screws and sliding the casing up or down, the height of the casing from the bed-plate may be regulated for the purpose hereinafter described. By setting up the screws the casing may be secured in any position on the standards that may be desired. The back plate of this casing has a vertical slot, E, extending part way down its inner surface, in which slides the slotted carrier F, to the lower end of which is secured the driver G, having its lower end concave, as shown, so as to engage with the small staples or wires and push them into place, as hereinafter described. The driver G is secured to the carrier F by means of a clamp, H, which holds the driver between it and the carrier. Screws I pass through both ends of the clamp, by which it may be set up or loosened, thus admitting of the driver being adjusted vertically. The central lower portion of the clamp is extended, as shown, so as to form a pointed spreader, J, for the purpose hereinafter described.

In the upper part of the back plate of the casing is a pin or shaft, K, on which one end of the lever-arm L is pivoted. A short distance from where the lever-arm is pivoted on the pin K is a pin, M, which is secured in the enlargement of the lever-arm at that point; and on this pin M is the dog N, so arranged as to move in any direction about the center of the pin. This dog fits snugly in the slot in the carrier F, so that when the handle of the lever-arm is moved up or down, this dog, engaging with the slot, moves the carrier F up or down in the groove or slot E, carrying with it the driver G, for inserting the wire staples, as hereinafter described.

Immediately under the slot E in the casing are two back plates, O, one on each side, and outside of these are two peculiarly-shaped slotted sliding plates, P. Screw-bolts Q pass through both the slots in the plates P and through the proper holes in the back plates, thus securing the back plates rigidly to the casing, but allowing a horizontal sliding motion to the sliding plates P, which then slide between the head of the screw-bolts Q and the back plate O. The upper inner corners of these sliding plates P are extended at R, and these extensions have their upper corners rounded or beveled off, as shown. This is done so that when the spreader or point J on the lower edge of the clamp H comes down it will enter between these extensions and spread the two sliding plates P apart, for the purpose hereinafter described. Springs S in a recess on the casing, and attached to the sliding plates, draw them back into position when the spreader on the clamp is drawn up from between the extensions. Below these extensions the sliding plates are beveled off on their edges, for reasons which will hereainfter appear.

Immediately under the sliding plates O are two slotted guide-plates, T. Two lugs, M′, are secured to the back plate of the casing, on each side of a screw-hole, and the slot in the guide-plate T is elongated, so as to admit of the two

lugs being inserted and leave room for lateral play. The screw V is then screwed into the hole between the lugs, and its head presses on the guide-plates. These plates may then be slid in either direction laterally for a short distance, and the screws then tightened to hold them in place.

When the back plates O, sliding plates P, and guide-plates T are in position, a groove or space is left between them, in which the driver G slides vertically, passing behind the extensions R.

Attached to the lower part of the casing D, by means of the bolts or screws V passing through the guide-plate T, is the peculiarly-shaped slide W, which is set on an incline toward the casing, so that the pieces of bent wire or staples, placed on its edge, will slide or feed toward the driver. On the lower inner part of the slide W is a spring, Y, so arranged that, as the piece of wire or staple is forced down by the driver, said spring will press against the wire and hold it in a vertical position while the driver forces it into the slat or rod.

On that end of the lever-arm L which is pivoted on the pin K is a downward-projecting extension, X, having pivoted at its lower end the feeding-dog Z. On the back plate of the casing D, at its lower edge, is the lug A′, attached to a slotted plate, B′. A screw passes through the slot in this plate, so that its position may be regulated, and the lug brought thus nearer to or farther from the point where the wires are driven into the rods or slats. As the extension-arm X is drawn back by the operation of the lever the feeding-dog is lifted up by the lug A′ free of the slat or blind, and as the lever-arm is raised it pushes the feeding-dog forward, its edge engaging with the slat or rod, feeding it forward at regular intervals.

On the bed-plate or front of the casing is a spring-guide, C′, which presses against the slat or rod as it is fed along under the driver and keeps it close against the back plate of the casing in the proper position. A gage or guide, D′, is also attached to the table or frame, so as to keep the rods or slats in a direct line.

The operation of my device is as follows: The slat or rod into which the wires are to be driven is laid on the bed-plate in position to be fed in under the driver by the feeding-dog Z as the lever-arm is raised. The staples or pieces of bent wire which are to be inserted in the slats or rods are hung on the top of the slide W, the lower one then resting against the face of the driver G in the vertical groove formed between the two sliding plates P. As the lever-arm is raised the spreader J on the clamp H is lifted out from between the extension R on the sliding plates, and allows the springs to push the sliding plates together. By this action the inner beveled edges of the sliding plates close behind the single staple which is resting against the face of the driver, and prevent other staples coming down the slide and entering the groove. As the lever-arm is still farther raised, the lower curved end of the driver is raised up high enough to allow the staple previously resting on the face of the driver to drop down into the groove in which the driver moves, where its lower end is caught on the spring Y. This is possible, because the slide does not come quite against the driver, it being held a slight distance away from the casing by the bolts securing it passing through the flanges E′ on the slide. These flanges hold the main slide a short distance from the casing, as shown, so as to allow of the operation of the spring Y, and also allow the wire staple to pass down behind it. When the staple has dropped down to the spring Y it is there held in the groove and by the spring until the lever-arm forces the driver down. The lower curved end of the driver presses on top of the staple and forces it into the blind slat or rod. Just before finishing the downward stroke the spreader J on the clamp separates the sliding plates and allows another staple to drop behind the beveled edges of the plates, which then close past it as the driver is raised. The feeding device is operated as the lever-arm is raised and lowered, as herein described.

When driving the staples into slats the whole casing is raised up and secured on the standards by the screws, as described. When connecting the slats to the rods, by driving the wire into the rods through the staples already in the slats, the casing may be lowered so that its lower edge is just above the rod. The slat having the staple already in its edge is placed so that the edge of the staple strikes the shoulder F′ in the lower corner of the casing. The rod is then laid on the bed-plate, ready for its staples. As the driver comes down the staple in the slat is in the proper position for one arm of the staple being forced into the rod to pass through it, so that the slats are then joined to the rods.

One difficulty in devices of this character has been to keep the slats and rods in proper position under the driver. Usually the standards come down into the bed-plate flush with the casing, and the guide regulating the distance of the slat from the standards came around the standards, but did not extend across in front of them. In the case of short slats or rods, the slat or rod was apt to get out of place. In my device I cut away the lower edge of the standards, as shown at G′, and am thus enabled to make my guide H′ in the form of a parallelogram, as shown, the front edge of which extends in front of the standards and along the bed-plate. Then, by means of the set-screw I′, the front edge of the guide may be regulated, thus adjusting the position of the slat.

I am aware that machines for the purpose of wiring blind-slats are in common use, and that many of the details of my machine are

not of themselves new. I do not therefore claim them, broadly; but,

Having thus described my invention, what I do claim as new, and desire to secure by Letters Patent, is—

1. The slotted standards B, rising from the bed-plate A, said standards having the foot cut back at G′, so as to admit the guide H′ and allow it to present an unbroken front, substantially as and for the purpose herein described.

2. The slotted carrier F, moving in the groove E, as shown, and provided with an adjustable independent driver, G, in combination with the clamp H, with its downwardly-projecting spreader J, substantially as and for the purpose herein described.

3. The driver G and laterally-sliding plates P, in combination with the guide-plates T, the inclined staple-holder W, and the casing D, with its gage-shoulder F′, to hold the slats in position, the whole operating substantially as shown, and for the purpose herein described.

In witness whereof I hereunto set my hand and seal.

CARL HINZ. [L. S.]

Witnesses:

GEO. H. STRONG,

FRANK A. BROOKS.