

S. SANFORD.

Looms for Weaving Piled-Fabrics.

No. 156,466.

Patented Nov. 3, 1874.

Fig. 1

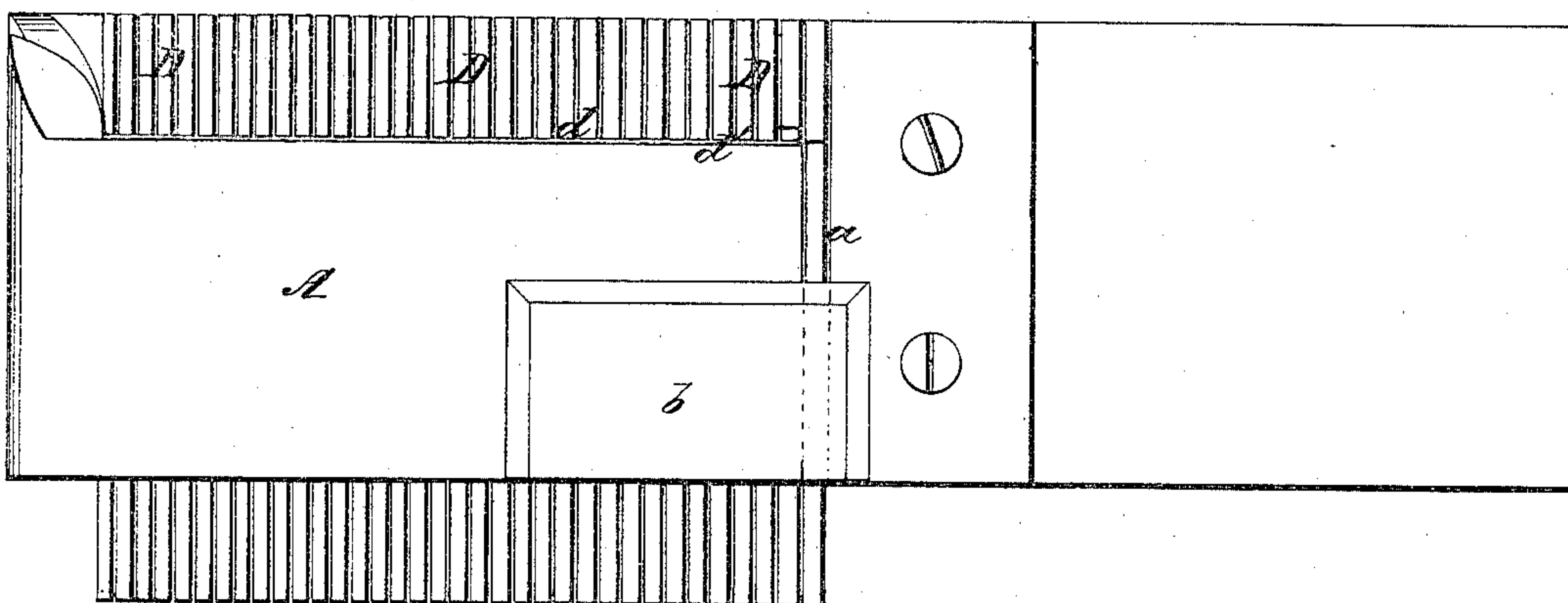


Fig. 2.

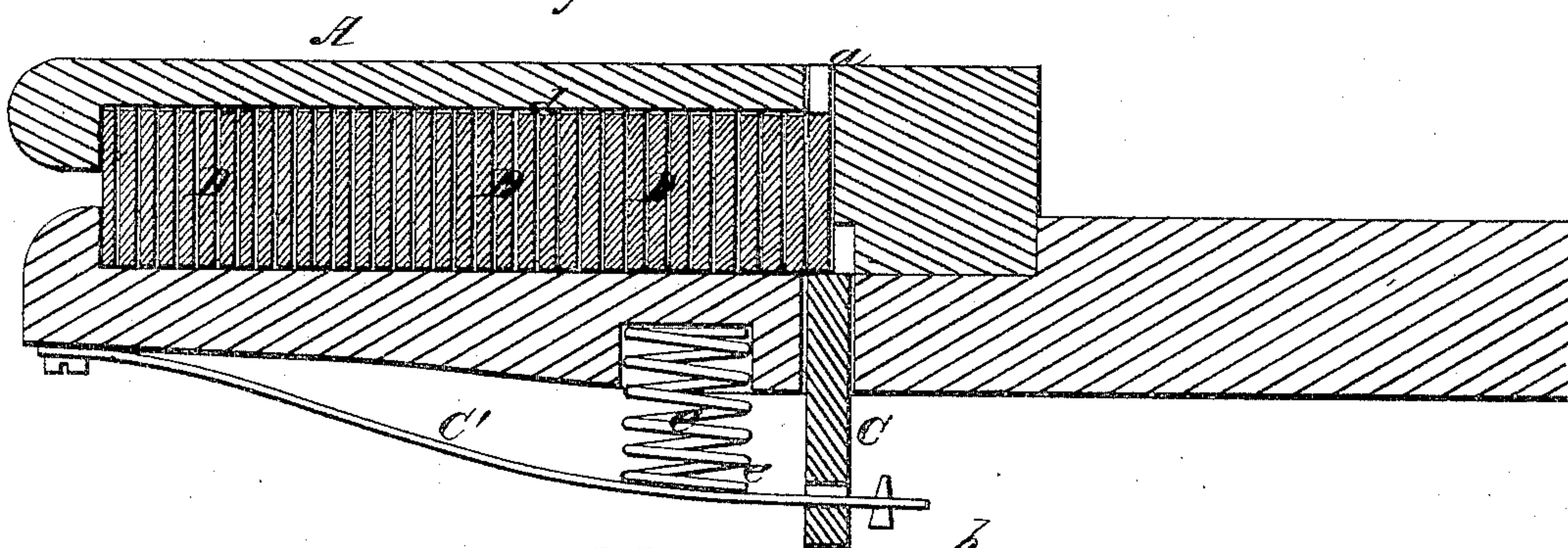
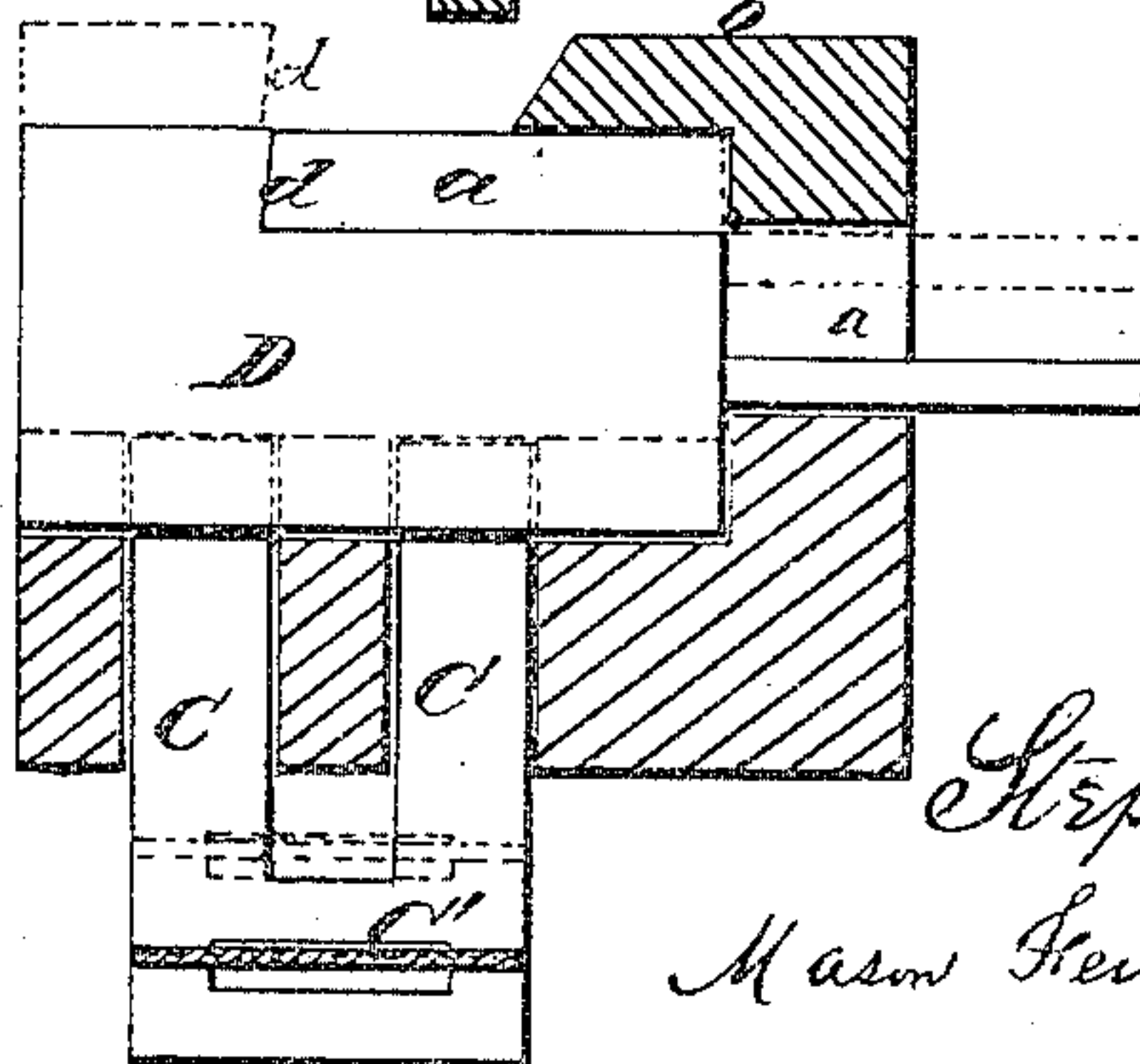


Fig. 3



Witnesses:
James Martin Jr.
J. H. Campbell

Inventor:
Stephen Sanford
by
Mason Kenwick
Attys.

UNITED STATES PATENT OFFICE.

STEPHEN SANFORD, OF AMSTERDAM, NEW YORK.

IMPROVEMENT IN LOOMS FOR WEAVING PILED FABRICS.

Specification forming part of Letters Patent No. 156,466, dated November 3, 1874; application filed September 7, 1874.

To all whom it may concern:

Be it known that I, STEPHEN SANFORD, of Amsterdam, county of Montgomery, State of New York, have invented an Improvement in Boxes for Holding Wires used in Weaving Pile Fabrics; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a top view, Fig. 2 is a horizontal section, and Fig. 3 a vertical transverse section, of a box with wire heads and wires, and a wire lifter.

Similar letters of reference indicate corresponding parts in the several figures.

The object of my invention is to insure the certainty of withdrawing the wires singly from the woven fabric, and at the same time facilitate the taking hold of the wires.

The nature of my invention consists in a provision for enabling the wire, which is to be withdrawn, to be raised to a plane above the wires, contiguous to it, as will be presently set forth; and it also consists in certain combinations of devices employed in effecting this operation.

A represents a box for holding the heads of the wires used in weaving piled fabrics. This box may be similar in construction to boxes for this purpose, except that, at the point where a wire is to be withdrawn, a vertical groove, *a*, is formed in the top plate, and extending through the rear of the box. This groove is of a width about equal to the thickness of a wire; and its object is to permit a wire, when in range with it, to rise sufficiently to bring the withdrawing-shoulder of the head on a higher plane than that of the other wires which are contiguous to it. A portion of the groove *a* is shown closed by a piece, *b*, fastened on top of the box. This piece is in rear of the shoulder of the wire head of the wire, which is to be withdrawn, and serves to strengthen the box where the groove is cut.

In practice, the groove *a* may be simply a kerf cut upward into the under side of the whole width of the top of the box, and the top of the box may be closed up to the shoulders of the wire head; or, if desired, the whole

series of the wire heads, except the one which is in position to be withdrawn, may be covered. Through a vertical aperture or apertures in the bottom of the box, directly under the groove *a*, a vertical lifter, *C*, is arranged to slide. This lifter is connected to a lever, *C'*, which is fastened to the bottom of the box in any convenient manner. The lever represented has a spring-action in itself, and is assisted by an auxiliary spring, *e*. The lever is set inclined, in order to be caused to raise the slide when a frictional contact takes place between it and a suitable actuating device, which device may be a cam, or revolving arm, or other attachment of the loom. The lever *C'*, in practice, may be hinged to the box, and have an auxiliary spring at its free end for returning it with the slide to its normal position; or it may be constructed so as to descend by its own gravity; or the slide may be raised by direct contact with it of the actuating device of the loom.

The wire heads *D* represented are made with withdrawing-shoulders *d*, which shoulders bear against the shoulder *d'* formed upon the box *A*. The shoulders *d* may be underbeveled or grooved, so as to firmly interlock with the withdrawing-hook. Instead of having shoulders the heads may be formed with eyes through them for the point of the hook to pass through, or they may be made without shoulders or eyes, which latter construction would involve the use of ordinary devices, which would clasp the side of the wire head, after its upper edge has been raised above the plane of the upper edge of the others, for the purpose of withdrawal.

The operation of withdrawing a wire is as follows: The slide *C* is pressed up against the wire to be withdrawn, until the base of the shoulder of said wire stands above the plane of the base of the shoulders of the contiguous wires, as shown in Fig. 3 in dotted lines, the withdrawing-hook is moved laterally, with respect to the wires, over the top of the box, behind the shoulders of the series of wires, to a position behind the shoulder of the wire, to be withdrawn, and then is moved longitudinally, with respect to the wires, against the shoulder of said wire until the wire is with-

drawn, and then is drawn back laterally to a position for the insertion of the wire at the front end of the box.

The movements mentioned are produced by looms ordinarily in use, and are not claimed under this patent.

It will be understood that the hook clears the heads of all the wires, except the one which is being withdrawn, as it moves longitudinally with the wire, and this is due to the invention which I have made, viz: Adjusting the wire to be withdrawn to a different plane from that of the contiguous wires just previous to the taking of hold of the same by the withdrawing device.

What I claim as new is—

1. The box for holding wires used in weav-

ing pile fabrics, constructed with a groove or space, *a*, in which the wire to be withdrawn is raised to a different plane from the one on which the contiguous wires rest, substantially as and for the purpose described.

2. The combination of the lifter *C*, the wire heads *D*, and the box *A*, constructed with a slot or space, *a*, substantially as and for the purpose set forth.

3. The combination of the lever *C'*, the lifter *C*, the wire heads *D*, and the box *A*, constructed with a slot or space, *a*, substantially as and for the purpose described.

STEPHEN SANFORD.

Witnesses:

J. N. CAMPBELL,

J. W. HAMILTON JOHNSON.