

J. Connor.
Button Hole Weaving.

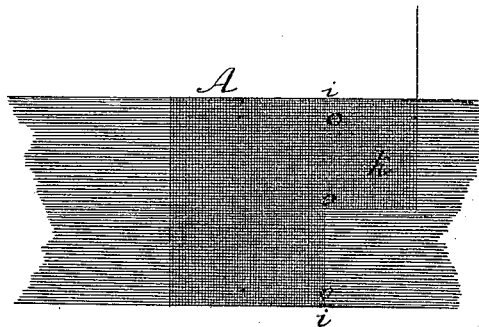
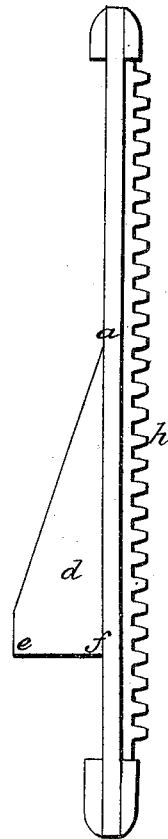
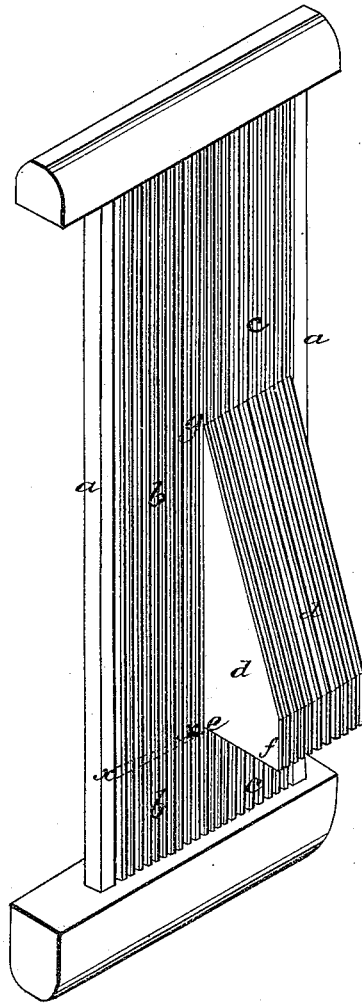
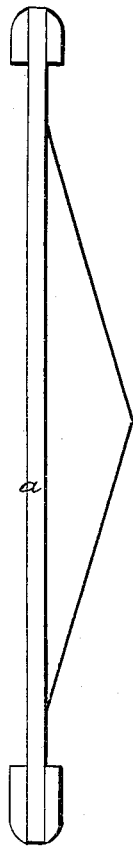
N^o 47,151.

Patented Apr. 4, 1865.

Fig: 3.

Fig: 1.

Fig: 2.



Witnesses

Francis Gould.
G. B. Kidder

Inventor.

John Connor
by his Atty.
W. B. Crosby.

UNITED STATES PATENT OFFICE.

JOHN CONNOR, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND
HENRY A. AYLING, OF SAME PLACE.

IMPROVEMENT IN MODE OF WEAVING FABRICS WITH BUTTON-HOLES THEREIN.

Specification forming part of Letters Patent No. 47,151, dated April 4, 1865.

To all whom it may concern:

Be it known that I, JOHN CONNOR, a subject of Great Britain, residing at Boston, county of Suffolk, and State of Massachusetts, have invented a new and useful Improvement in Weaving; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

This invention relates to the weaving of fabrics containing or to contain button or similar holes, said holes being formed by or in the process of weaving, and the principal object of the invention is to weave narrow fabrics—such as suspender-webbing, &c.—with button-holes.

The invention consists in the employment of a peculiarly-shaped reed, which, by having imparted to it a vertical movement, in connection with the ordinary beat of the lay and the interruption of the take-up, so disposes the shoot as to weave the second side of the button-hole, or the fabric forming such side, as will be fully described.

Figure 1 of the drawings represents a perspective view, and Fig. 2 a side elevation, of a reed embodying my construction. Fig. 3 shows a modification of the same.

a denotes the frame of the reed, *b* the dents upon one half, and *c* those upon the other half of the same. The dents *b* are made of the usual form, while each dent *c* is constructed or provided with a projection, *d*, said projection having at one end a width, *e f*, equal to the length of the hole to be formed in the cloth, and joining the dent at *g*, as seen in Fig. 1. The dents *b* and *c* correspond with each other, excepting with respect to these projections. The rear side of the reed-frame is provided with a rack, *h*, by which, through a gear-wheel upon a shaft connecting with the mechanism which drives the loom, a vertical motion may be imparted to the reed.

The operation of the reed is as follows: Suppose *A* to represent a piece of suspender-webbing being woven upon the loom, while the part wherein the woof or shoot extends entirely across the cloth is being made, the warp-threads extend through the dents above the point *g* or where the beating-faces

of the dents are all on the same line, and the shoot is of course thrown through all the warp-threads or the shed is made across the whole width of the webbing. As the point *i* is reached, where the button-hole is to commence, the shed is made only with that half of the threads extending through the dents *b*, and the effect is to weave the piece *k*. As this operation commences an upward movement is given to the reed, and continued at each beat-up of the lay, the movement being to such extent that when the desired length is woven at *k* for the button-hole the widest part of the projections *d* (or the parts thereof having a width equal to the length given to the piece *k*) shall have risen to the plane of the cloth. While the piece *k* is being woven the cloth is taken up by the cloth-beam as usual. The take-up is then stopped and the shed made only by the warp-threads running through the dents *c*. Now, it will be evident that the first shoot thrown through the shed by the shuttle will be beat by the projections *d* close up against the last thread *o o*, extending entirely across the warp. At the next beat of the lay a downward movement is given to the reed, so that the shoot beat up thereby is driven a little less distance in than the last, or, in other words, up closely against the previous shoot, and so on, the reed descending at each beat as the shoot approaches nearer and nearer to the end of the button-hole. When a length equal to the piece *k* is thus woven, the take-up is again applied, the vertical movement of the reed arrested, the shed made in the whole warp, when the weaving will continue as at first, leaving the button-hole formed, as will be readily understood.

Instead of giving both an up-and-down movement to the reed, the weaving of the part *k* may be carried on near the line *x x*, or just below the widest part of the projections *d*, so that when the part *k* shall have been woven the reed shall be in position by a slight downward movement to commence beating the shoot up against the other half, the vertical downward movement of the reed being then continued until the piece opposite to the part *k* is woven, the same as above described. In this case, however, the reed, after the button-hole is thus formed, will have to be raised the length of the dents *d* to bring the part below

such dents again into operation, and during the weaving of the part *k* no arrest of the take-up is made; or the projections may be made in form as seen in Fig. 3, the weaving being carried on either above or below the projections, and the reed being moved from either end to the widest part of the projection in weaving the first half of the piece, and from thence back again (as before) or to the other end, as circumstances may require.

By my invention the beat of the reed is always the same, while by constructing it as described and giving to it vertical movements, in combination with forming a shed upon one side of the webbing at a time and arresting the take-up motion when the second part or

side of the hole is being formed, the process is rendered more certain and practicable than by these other methods.

I claim—

The improvement in weaving suspender-webbing, &c., to form button or other similar holes therein by the employment of a reed having a construction and operating in the manner substantially as set forth.

In witness whereof I have hereunto set my hand this 21st day of November, A. D. 1864.

JOHN CONNOR.

In presence of—

FRANCIS GOULD,
HENRY A. AYLING.