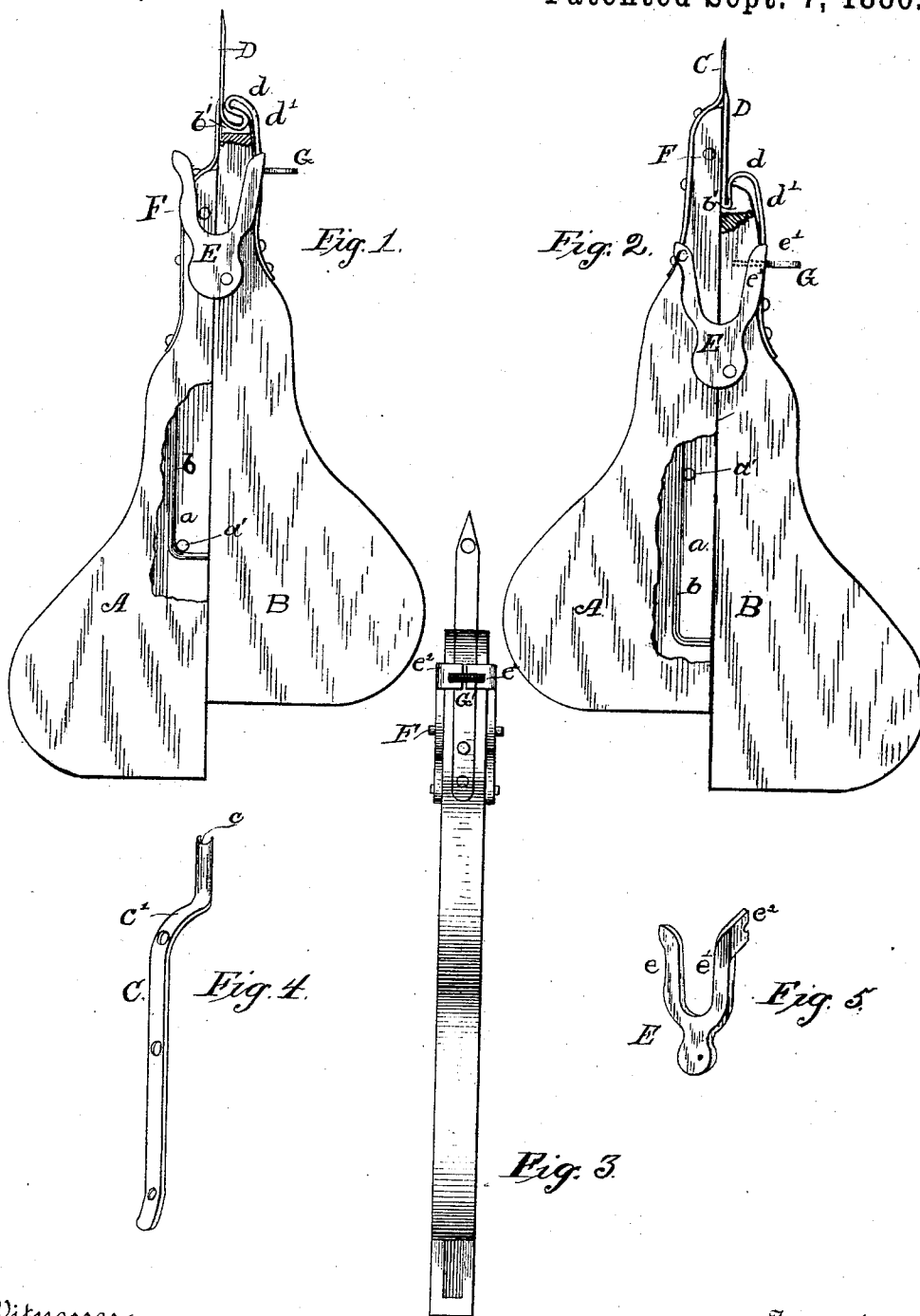


(No Model.)

N. W. CRANDALL.
FABRIC TURFING IMPLEMENT.

No. 348,724.

Patented Sept. 7, 1886.



Witnesses
Susie B. Seiler.
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UNITED STATES PATENT OFFICE.

NATHAN W. CRANDALL, OF MERIDEN, CONNECTICUT, ASSIGNOR OF TWO-THIRDS TO GEORGE W. JOPSON, OF SAME PLACE.

FABRIC-TURFING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 348,724, dated September 7, 1886.

Application filed February 4, 1886. Serial No. 190,796. (No model.)

To all whom it may concern:

Be it known that I, NATHAN W. CRANDALL, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Fabric-Turfing Implements; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to hand implements or devices for turfing textile fabrics; and it consists in the novel features of construction more fully hereinafter set forth and claimed.

Heretofore similar devices were provided with a spring-holder which fed the implement over the fabric, or a separating motion was given the sliding parts for the same purpose, which in practice have been found to give unsatisfactory results.

The object of my invention is to overcome wholly or in part some of the objections to prior devices by combining therewith a spring-needle device for regulating the movement thereof, and means for actuating the needle, whereby it is made to move to and from the holder, as will presently be more particularly referred to, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of an implement of my construction adapted to carry out my invention, a portion being broken away to show the means for holding the parts in position. Fig. 2 is a similar view showing the relative positions of the parts reversed. Fig. 3 is an edge view. Figs. 4 and 5 are perspective views, respectively, of the holder and needle-operating cam.

The parts A and B may be of any approved style and made of any suitable material, wood being preferable, owing to its lightness and cheapness. A groove or mortise, *a*, is formed in the edge of the one for the reception of a wire staple, *b*, projecting from the edge of the other. The mortise and staple are so proportioned that the parts A and B have a limited sliding movement the one over the other. A

pin, *a'*, extending transversely through the part having the mortise, engages the inner side of the staple and holds the parts against accidental separation. The loop-holder C and spring-needle D project from the ends of the respective parts of the device in the usual manner. The end of the holder is hollowed out to form a recess, *c*, which fits over the material used for making the loops or tufts. The holder may be secured in place in any well-known manner; but the way shown is preferred, an offset, *C'*, being formed therein to permit its fitting over the end and being secured to the outermost edge of the part. The needle D has a corresponding offset, *d*, in order that the projecting parts of it and the holder may come adjacent to each other and be in parallel planes. The needle is likewise secured to the outermost edge of the part adjacent to that supporting the holder. The rear portion of the needle is secured to the part in such a manner that the main portion is normally at a distance from the outermost edge of the needle-supporting part, as shown in Fig. 2. The offset *d*, formed in the needle, may be made by bending the needle so as to present a double loop, as shown in Fig. 1, or it may be bent into a single fold, as indicated in Fig. 2. These folds allow a slight yielding of the needle in a longitudinal direction, and for this purpose the form shown in Fig. 1 is preferred, as it permits of a greater movement. A plate, E, having divergent arms *e e'*, is pivoted to a side of the part B. The arm *e'*, near its upper end, is bent to one side, forming a lateral flange, *e''*, which is adapted to engage with the spring-needle and advance the same into close relationship with the holder, when the plate is turned about its pivot by reason of the inner edge of the arm *e* engaging a pin, F, on the part A. While a single plate may be provided on one side only, it is found expedient to employ one on each side, and as they project on each side of the meeting line of the two parts, the latter will be prevented from having any sidewise movement, as will be readily comprehended.

In the operation of the device the parts A and B relatively slide over one another, the needle carrying the yarn or thread through the fabric, while the holder prevents the withdrawal of that portion of the thread already

inserted during the backward movement of the needle. As the needle advances, the divergent arm *e* of the plate contacts with the pin *F* and carries the spring-needle closer to the holder, and during the retrograde movement the arm is released from the pin, and the needle, by reason of its resiliency, returns to its normal position. This vibratory movement of the needle carries the implement step by step over the fabric in a manner well understood. The outward motion of the spring-needle is regulated by a set-screw, *G*, which adjustment likewise governs the length of stitch or distance between the tufts. An opening formed through the thumb-piece of the set-screw serves as a guide through which the yarn passes on its way to the eye of the needle. The needle is flattened, and its point is arrow-shaped and beveled from its outer face to that adjacent the holder to make a knife-edge which will easily penetrate the fabric. By extending the inner end of the fold *d'* of the needle beyond the plane of the outer end of the offset, a purchase is afforded for the holder after its point has passed beyond the plane of the outer end of the bend *d*, thus giving a greater degree of movement of the parts *A* and *B* without any possibility of the holder catching under the offset or inner end of the bend of the needle. The offset formed in the needle serves as a stop or rest to limit the movement of the needle through the fabric, and in order to permit the vibratory motion of the needle when the device is in operation, its supporting part has a portion of its end cut away, as shown at *b'*, to allow the fold *d'* to have a lateral movement or play therein.

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

1. In a fabric-turfing implement, the combination, with the sliding parts and a loop-holder secured to one of said sliding parts, of a needle secured to the other sliding part, composed of a single piece of metal having an offset and a single fold formed therein, substantially as described, and for the purposes specified.

2. In a fabric-turfing implement, the combination, with the sliding parts and a loop-holder secured to one of said parts, of a needle secured to the other part, composed of a single piece of metal having formed therein a double loop, substantially as shown, and for the purpose set forth.

3. The combination of the sliding parts, means by which their approximate edges are kept in the same plane, a loop-holder fixedly secured to the one part, and a spring-needle secured at one end to the other part, the said needle having its free end normally sprung away from the loop-holder, said needle and loop-holder projecting beyond the ends of the parts, and a stop which engages by sliding contact with the needle during the reciprocating movements of the parts and draws the free end of such needle toward the loop-holder, substantially as described.

4. The combination, with the sliding parts, provided, respectively, with a loop-holder and a spring-needle, the latter normally sprung away from said loop-holder, of a stop to draw the needle toward the loop-holder, and a set-screw to adjust the outward movement of the needle when released from said stop, as and for the purposes described.

5. The combination of the sliding parts, a loop-holder secured to the one sliding part and projecting beyond its end in line with the meeting edges of the parts, a spring-needle secured to the outer edge of the other part, and having an offset or bend therein to extend over the end of the part, and a fold extending within the offset, substantially as shown, and for the purpose set forth.

6. The combination, with the sliding parts, of a loop-holder secured to the one and a laterally-vibrating spring-needle secured to the outer edge of the other, and having a fold therein to work in a groove or mortise cut in the end of its supporting part, substantially as described.

7. The combination of the sliding parts, a loop-holder secured to the one, a spring-needle secured to the other, a plate pivoted to one of the parts and having diverging arms, one of which is bent and engages the spring-needle, a pin on the other part to engage the free arm and draw the needle to the loop-holder, and a set-screw to limit the outward movement of the spring-needle, substantially as described, and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

NATHAN W. CRANDALL.

Witnesses:

WM. A. CURTIS,
HENRY DRYHURST.