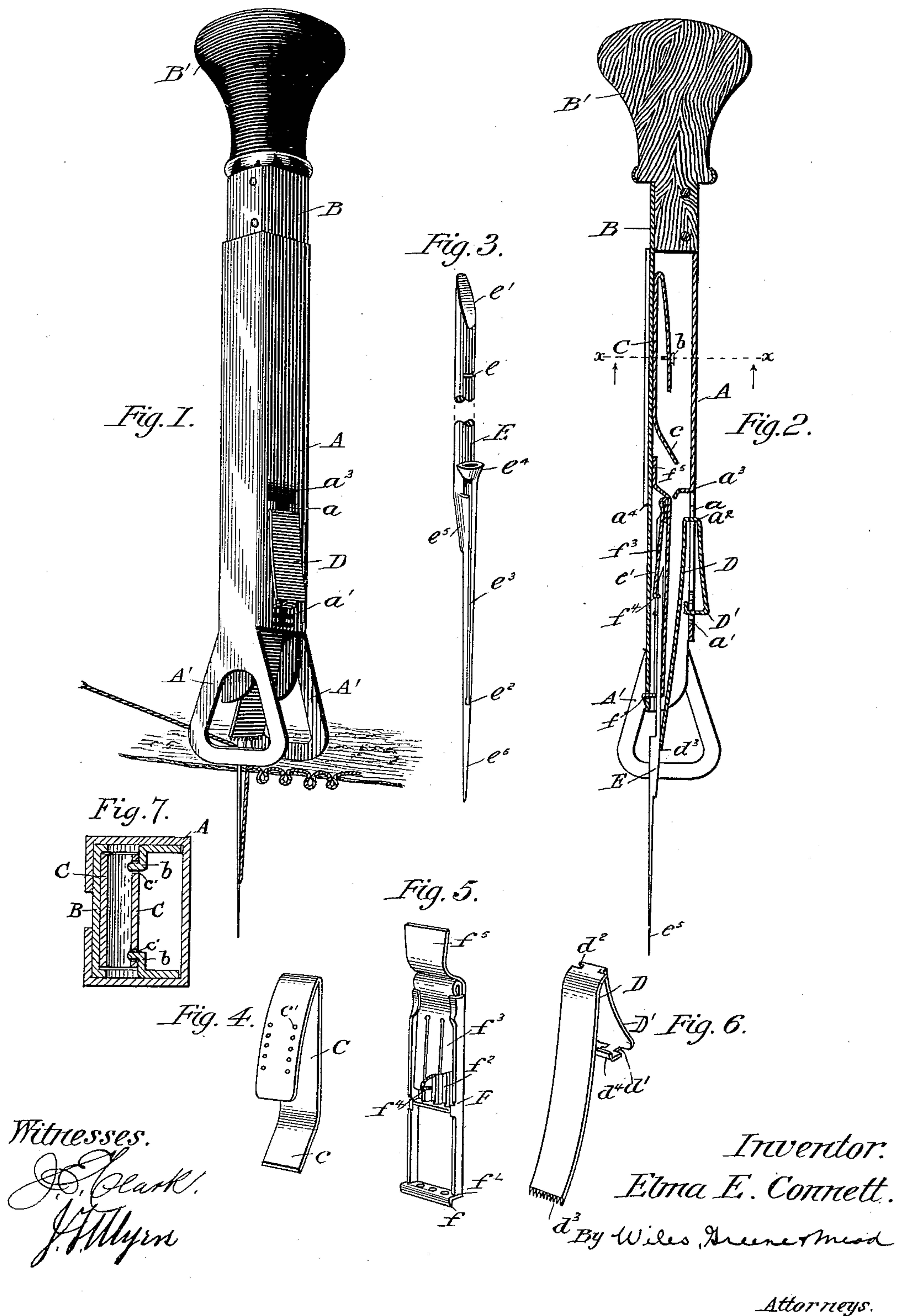


(No Model.)

E. E. CONNETT.
FABRIC TURFING IMPLEMENT.

No. 377,192.

Patented Jan. 31, 1888.



UNITED STATES PATENT OFFICE.

ELMA E. CONNETT, OF PEORIA, ILLINOIS, ASSIGNOR TO JULIUS F. MYERS,
OF SAME PLACE.

FABRIC-TURFING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 377,192, dated January 31, 1888.

Application filed November 20, 1886. Serial No. 219,439. (No model.)

To all whom it may concern:

Be it known that I, ELMA E. CONNETT, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have
5 invented certain new and useful Improvements in Fabric-Turfing Implements; and I do hereby declare that the following is a full, clear, and exact description of the invention, which
10 will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines for turfing fabrics.

Heretofore machines of this kind as commonly constructed are capable of use only on
15 fabrics with wide meshes, the only exception to this rule being machines which are too complicated and expensive to permit of extensive use.

The object of the present invention is to
20 produce a turfing or embroidering machine which shall be simple and cheap in construction, not liable to get out of order, and which shall be capable of being used on close as well as loose woven fabrics, thus enabling the kind
25 of work done by these machines to be performed on the finer grades of cloth.

Furthermore, the object of the invention is to produce a turfing-machine having combined therewith a feeding device whereby a uniform
30 movement of the device is automatically caused during the operation of turfing or embroidering, the said device being capable of adjustment to regulate the length of each advancing step.

Furthermore, the invention has for its object to produce an adjustable stop for regulating the length of the loops formed.

With these objects in view my invention consists in a turfing or embroidering machine
40 comprising a reciprocating needle for carrying yarn or thread through the fabric to be worked upon, the said needle having an eye, through which the thread or yarn is passed, situated about midway of the exposed portion
45 of the needle, and means operating in conjunction with the needle for retaining the yarn against being withdrawn from the fabric during the intervals between the stitches.

Furthermore, the invention resides in a turf-
50 ing or embroidering machine comprising a reciprocating needle-bar, a needle attached to

its lower end, and a sheath inclosing the needle-bar and provided with a spring having its end in contact with the needle, whereby the yarn is engaged during the upward movement
55 of the needle and retained against withdrawal from the fabric during the interval between the stitches.

Furthermore, the invention resides in a turfing or embroidering machine comprising a
60 needle-bar carrying a needle by which the thread or yarn is inserted into the cloth, an outer sheath, and a projection from the sheath engaging the bar, whereby the movement of the needle-bar is limited and regulated. 65

Furthermore, the invention resides in various details of construction novel in themselves, and which insure the effectiveness and accuracy of the device.

I have illustrated the invention in the accompanying drawings, in which— 70

Figure 1 is a perspective view of the improved machine, the needle being represented at the limit of its downward movement. Fig. 2 is a central longitudinal vertical section of
75 the machine, the section being taken on a line coincident with the direction of movement during operation. Fig. 3 is a perspective view of the needle used. Fig. 4 is a perspective view of the adjustable stop whereby the length
80 of the vibration of the needle is regulated. Fig. 5 is a perspective view of the device for securing the needles to the needle-bar, and Fig. 6 is a perspective view of the spring whereby the yarn or thread is retained between the
85 stitches and a forward movement imparted to the needle. Fig. 7 is an enlarged transverse section of the machine through the line $x x$, Fig. 2, the view being upward.

In the drawings, A represents the outer
90 shell or sheath, by which the principal working parts of the device are inclosed or sustained. This shell or sheath is provided at its lower end with the curved depending projections A', which form what may be termed
95 "runners," serving to support the machine at the proper distance from the cloth upon which the work is to be done, and with an inward projection, a^3 .

In the use of my machine it is designed that
100 the cloth upon which the embroidering is to be performed shall be held taut by the aid of

a frame upon which it is stretched, or in any other suitable manner.

B represents a shell of such size as to be received by the sheath A and capable of sliding up and down therein. It is provided at its upper end with a handle, B'. This shell forms what may be termed a "needle-bar," inasmuch as the needle or needles by which the yarn or thread is passed through the cloth are carried by its lower end.

The means of securing the needles in place is shown in Fig. 5 of the drawings. It consists, essentially, of the plate F, provided with the bent end f , which is passed through an opening in the lower end of shell B, and is thereby held in place. This end f is provided with one or more openings for the reception of needles.

The letter f^4 represents a transverse piece provided upon its under face with a notch or notches of such size and shape to permit the passage of the needle.

The face of the plate F above the cross-piece f^4 is formed with a series of grooves, which aid in retaining the needles in place after they have been inserted. The needles are held against dropping out by the springs f^3 , one of which is provided for each needle used. The bent ends of the springs engage with grooves in the needles. The upper end of the plate is provided with a projection, f^5 , which holds the plate at an angle to the face of the needle-bar.

The plate F is capable of a slight vibratory motion, the axis of which movement is the point at which the plate is attached to needle-bar. The distance which the plate F or needle-clamp vibrates is regulated by the upturned oblique end c of the plate C, which end is always within the arc described by the plate F in its vibration.

The preferred means of securing the plate to the needle-bar is by forming small projections b on the inner face of the shell B, which may be done by stamping during the process of making the same. These projections are provided with bent ends, which are designed to enter holes or indentations c' , formed in the plate. That part of the plate C having the holes or indentations is of spring metal, so that the projections are retained firmly against displacement after being introduced into the holes. By depressing the plate free from the projections it may be slid along at will to change its position, and thereby change the length of the stitch.

The means whereby the thread or yarn is prevented from being withdrawn between stitches and the length of loop regulated will now be described.

D represents a leaf-spring which is formed with or has attached to its lower end a series of sharp projections, d^3 . The upper portion of the spring is provided with the bent end D' , which is designed to lie flat with the outer face of the sheath A when the parts are in operative position. The spring is provided with

the reduced necks d' and d^2 and with the lip d^4 . In attaching the spring to the sheath the portion D' is passed through the opening a and slipped down to bring the neck d^2 in the slot a . The sides of the lower portion of the slotted part are provided with teeth or projections a' , into engagement with which the portion d' of the spring is brought. The withdrawal of the end of the spring is prevented by the lip d^4 , which bears against the inner faces of the teeth or projections. From the foregoing it will be clear that the vertical position of the spring may be readily changed by pressing the end of the same down to bring the neck d' flush with the teeth a' .

The needle by which the thread or yarn is passed through the fabric is represented by the letter E. It is provided at its upper end with a beveled portion, e' , and with a groove, e . The upper portion of the lower part of the needle is hollow, and the upper and lower portions are in different vertical planes. The juncture between the two parts is made by the inclined portion e^5 . The top of the hollow portion is provided with a flaring mouth, e^4 , in order to offer no obstruction to the free and smooth passage of the yarn.

The needle is provided with the longitudinal slot e^3 , extending from the eye e^2 to the lower portion of the flaring portion e^4 , so that the threading of the machine may be accomplished rapidly by first passing the thread or yarn through the mouth, then through the eye, and, finally, by drawing the thread or yarn taut and through the slot into the hollow portion of the needle. The lower portion, e^6 , of the needle is a long point gradually tapering from a very sharp end to the eye, so that it may be easily inserted into cloth of the closest meshes.

In the operation of the machine the feet A' are placed upon the cloth upon which the work is to be done when the needle is at the limit of its upward movement. The needle-bar is forced down, forcing the needle carrying the thread or yarn through the fabric. As the bar descends the inclined face of the plate F comes in contact with the projection a^3 from the inner face of the sheath A. This forces the needle to assume a vertical position, and, the needle-bar and needle acting as a lever and the fabric as a fulcrum, the machine is moved forward one step. When the needle-bar has reached its lowest point, it is drawn up, and as the eye of the needle passes the teeth on the spring D the yarn or thread is caught and held until another downward movement is made. The spring D being vertically adjustable, the point at which the thread or yarn is caught, and consequently the length of the loops formed, may be regulated at will. The length of the stitch may be regulated by adjusting the plate C to determine the vibration of the plate F.

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

1. A machine for turving fabric, comprising the outer shell or sheath having the inward projection, and the reciprocating needle-bar having the inclined plate and the adjustable stop, substantially as described.

2. A machine for turving fabric, comprising an outer sheath or shell provided with the inward projection, the reciprocating needle-bar having the lugs, and the spring having openings entered by the lugs, and the inclined plate attached to the needle-bar, substantially as described.

3. The combination, in a turving-machine, of the needle having the upper beveled end, the groove, and the hollow portion, and the retaining device consisting of the plate F, the spring-fingers attached to the plate, the up-turned end provided with holes, and the cross-piece provided with the notches on its lower face.

4. The combination, with the shell A and needle-bar B, of the needle-holder having its lower end pivotally connected with the needle-bar, the needle set in said holder, the adjustable spring C, having the end *c*, which limits the oscillation of the free end of the needle-holder, and the adjustable spring D, having the serrated end *d''*, impinging upon the needle and adapted to catch and arrest the yarn as the eye of the needle passes it, substantially as and for the purpose set forth.

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

ELMA E. CONNETT.

Witnesses:

DAVID H. MEAD,
A. KEITHLEY.