

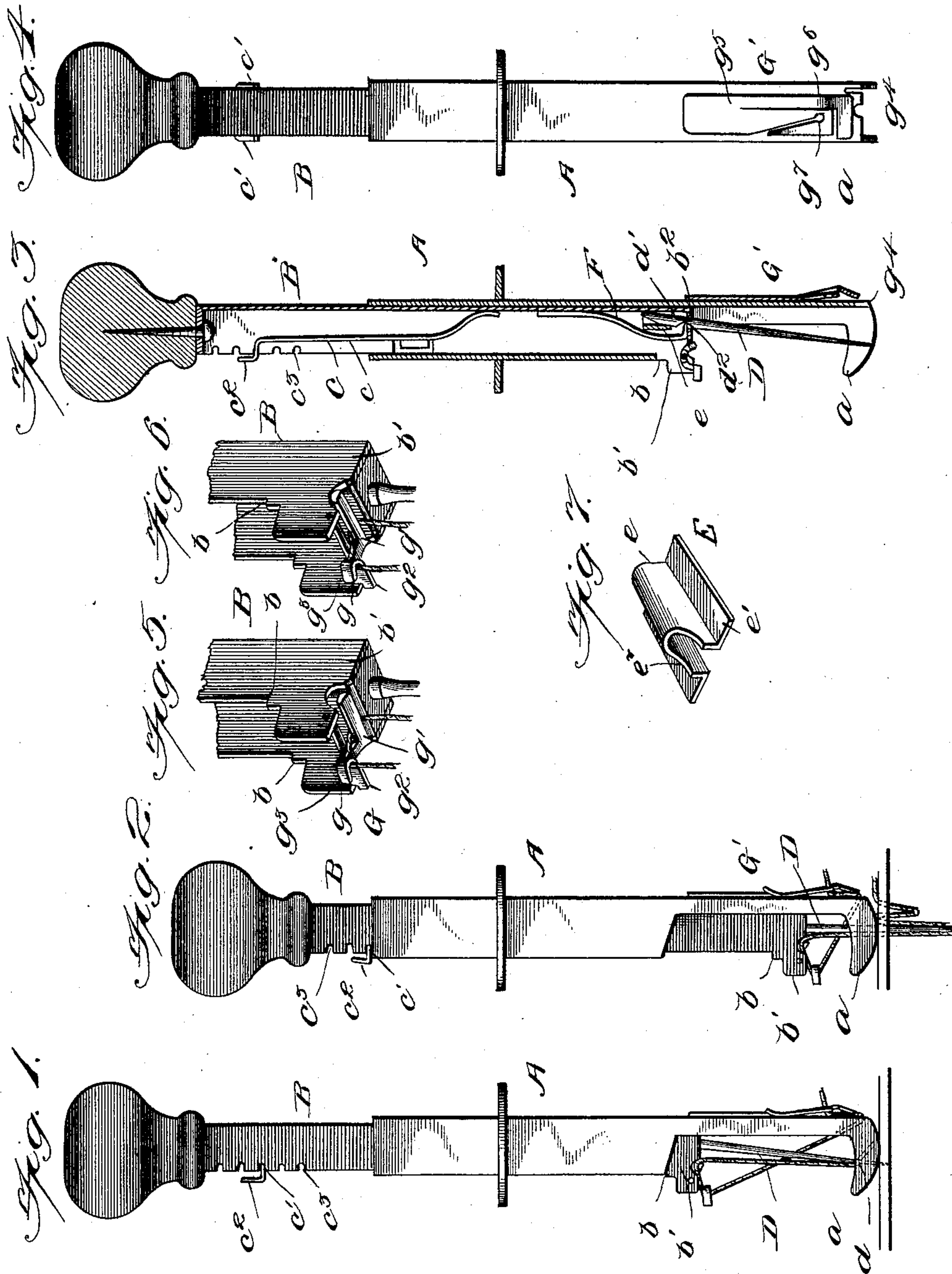
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M. F. CONNETT.
FABRIC TURFING IMPLEMENT.

(Application filed Jan. 10, 1898.)

(No Model.)



Witnesses

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FABRIC-TURFING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 606,707, dated July 5, 1898.

Application filed January 10, 1898. Serial No. 666,135. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW F. CONNETT, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, 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 of reference marked thereon, which form a part of this specification.

15 This invention relates to fabric-turfing implements.

The object of the invention is to provide an implement of simple and cheap construction, easily operated by an unskilled person, and not liable to get out of order or wear in use, by which, by imparting a reciprocating movement to parts of the device, a thread may be carried through a fabric at each reciprocation, leaving each time a loop of predetermined length on the opposite side of the fabric to that on which the implement is placed in order that by a continuance of the reciprocations a turf of uniform height throughout may be produced.

30 Further, the object of the invention is to provide a turfing implement of the kind referred to in which the thread of which the turf is to be made shall be drawn through a tension device before being passed through the fabric, thus insuring the uniformity of the work done.

Further, the object of the invention is to provide a turfing implement of the kind referred to in which the thread shall automatically be positively clamped between the eye of a needle and a tension device after a needle has been withdrawn a distance to draw through the tension material for a loop of predetermined length on the face of the fabric opposite to that on which the implement is placed.

Further, the object of the invention is to provide a turfing implement of the kind described whereby a series of loops of uniform

length may be formed upon one side of a fabric, and in the operation of which the thread of which each loop is formed shall be drawn but once through the eye of the needle by which the thread is carried through the fabric, thus avoiding withdrawing the loop left in rear of the implement when the needle is withdrawn.

Further, the object of the invention is to provide a fabric-turfing implement comprising a needle having an eye near its point, having simple means for retaining the needle in the implement in such a way as to prevent its removal or displacement in the use of the device.

With these objects in view the invention consists of a fabric-turfing implement comprising a sheath or casing, a reciprocating needle-bar, a needle carried by the needle-bar, a tension device through which the thread passes from the supply, and a thread-clamping device carried by the needle-bar, whereby as the needle-bar ascends the clamp is operated by the tension imposed upon the thread by the tension device to supply sufficient slack in the thread for the formation of the succeeding loop.

Further, the invention consists of a turfing implement comprising a sheath or casing, a needle-bar, a needle carried by the needle-bar and designed to carry a thread through a fabric, a thread-clamping device having a pivoted member and carried by the needle-bar, and a tension device through which the thread passes before passing through the clamp, whereby when the thread is drawn through the tension device the clamp will be closed and passage of the thread through the eye of the needle on the upward movement of the needle will be prevented and a quantity of thread sufficient to form a succeeding loop will be drawn from the supply.

Further, the invention consists of a fabric-turfing implement comprising a sheath or casing, a needle-bar, a needle carried by the needle-bar and adapted to carry a thread through a fabric, a thread-clamping device attached to and moving with the needle and through which the thread passes, a tension

device arranged on the sheath or casing, and an adjustable stop by which the length of movement of the needle-bar is determined.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of an implement constructed in accordance with my invention, the parts being shown in position ready for the downward movement of the needle-bar to introduce the thread carried by the needle through the cloth on which the turfing is to be done. Fig. 2 is a view similar to Fig. 1, the parts being shown in the positions assumed as the needle is withdrawn to leave a loop on the under side of the cloth. Fig. 3 is a central longitudinal sectional view of the implement. Fig. 4 is a rear face view of the implement, particularly showing the tension device. Fig. 5 is an enlarged perspective view of the lock on the needle-bar, showing its position as the needle-bar descends and as it completes a part of its upward movement. Fig. 6 is a view similar to Fig. 5, the parts being shown in the position assumed in the latter part of the upward movement of the needle; and Fig. 7 is a perspective view of the movable socket by which the needle is received.

In the drawings, A represents a sheath or casing, which may be of any desired material and form, it being here shown as square in cross-section and composed of sheet metal. The sheath or casing is provided at its lower end with a pressure-foot a , which is designed to rest on one face of the cloth on which the work is to be done.

B represents a needle-bar, which is of a size and shape to be received by the sheath or casing to move longitudinally in the same and at the same time to be prevented from rotating independently of the sheath or casing. The needle-bar is provided near what in the use of the device is the lower end with offsets b , which come in contact with the lower end of the sheath, and thus limit its upward movement. The downward movement of the needle-bar is limited by an adjustable stop C. This stop consists of the spring portion c , which is retained in place by lugs c' on the inner face of the needle-bar and the head c^2 , which is slightly wider than the spring portion. The edges of the head are designed to rest in the indentations c^3 , which are arranged in pairs, the members of each pair being on opposite sides of the needle-bar. When the stop is adjusted to any one of the pairs of notches, the head will be in a position to receive the impact of the upper end of the sheath as the needle-bar is moved downward. The spring portion of the stop is so arranged with its end bearing on the inner face of the needle-bar and its upper face bearing on the lugs that the resiliency of the spring will be utilized to retain the head in any position to which it may be moved. By the described arrangement of parts it will be seen that the stop governing

the upward movement of the needle-bar is fixed, while that governing its downward movement is movable, thus allowing adjustment of the parts to regulate the length of the turf formed in the operation of the implement.

The lower end of the needle-bar is provided with a head b' , having therein an opening b^2 , into which projects the upward end of the needle D. Arranged within the needle-bar is a movable socket E, consisting of the upper curved portion e and the flanges e' , integral with the curved portion and designed to bear against the respective inner side faces of the needle-bar. The curved portion of the socket is for the reception of the inner end of the needle, and when the latter is in place it will be seen that it will be prevented from having any side movement, thus insuring the accuracy of its downward plunge.

The needle D is for the purpose of automatically feeding the implement forward in its operation, normally held at an angle to the needle-bar. To accomplish this, the socket is capable of a slight lateral movement in the needle-bar, the needle is fulcrumed in the sides of the opening b^2 , and is held by a spring F in the inclined position shown in Fig. 1 of the drawings before being passed into the fabric on which the work is to be done. The spring F is soldered or otherwise secured at one end to the inner face of the needle-bar and its lower free end is bent at substantially right angles to the body of the spring and bears on the needle, the socket being cut away at the point e^2 to allow the end of the spring to bear on the needle. The spring bearing on the needle keeps the latter normally inclined and it also forms the function of retaining the socket in place to receive the upper end of the needle.

The needle D is provided with an eye d near its point, and it is provided at its upper end on one side with a bevel d' , at the lower end of which is a notch d^2 , which is entered by the bent end of the spring F. This form of needle allows of its being introduced by simply pushing it under the end of the spring until the end of the latter enters the notch, when it will be retained for operation. When it is desired to remove the needle, the latter is first rotated to cause the end of the spring to bear on a smooth side of the needle. When this is done, no other obstruction to the withdrawal of the needle is afforded.

The means for automatically clamping the thread between the needle and the supply for imposing a tension on the thread for the purpose of insuring the uniformity of the loops formed and for rendering the operation of the clamp certain will now be described.

Projecting from opposite sides of the needle-bar are the wings g , in which is pivotally mounted a vibrating clamp G, having at its lower end an arm g' , the lower face of which is parallel to the face of the plate b' and is designed to bear against the plate to confine a

thread passed between the two parts or to be moved away to release the same. At the upper end of the clamp, on the outside of the point at which the clamp is pivoted, is an arm g^2 , having its end g^3 bent at right angles there-
 5 to for the purpose of holding the thread in place when the implement is threaded, as hereinafter described.

The lower end of the needle-bar between
 10 the arms forming the presser-foot is provided with a notch g^4 , forming a guide for the thread.

On the rear face of the sheath is a tension G' , which may be of any suitable construction. In the present embodiment of the invention
 15 a spring-plate g^5 is so attached to the sheath as to leave its lower end free, and in its lower portion is an eye g^7 , from which eye extends a slot or groove extending to the edge of the plate and providing for the insertion of the
 20 thread. A spring-finger g^6 is arranged adjacent to the plate g^5 , and its lower end, extending at right angles from the main portion of the plate, is parallel to the lower edge of the plate g and is in close proximity thereto.

In threading the implement the end of the thread of which the turf is to be formed is passed through the eye of the needle, and the thread between the needle and the supply is first passed between the arm g' and the plate
 30 b' , thence upward over the arm g^2 , upon which it is held by the bent end g^3 , thence around the lower end of the needle-bar, being held in place by the notch g^4 , thence between the plates g^5 and g^6 , and finally through the slot
 35 in the plate g^5 to the eye g^7 .

The operation of the implement when constructed as described and threaded for operation is as follows: The implement is placed with its presser-foot resting on the cloth on
 40 which work is to be done, the sheath being held by one hand and the top of the presser-foot being grasped by the other hand, and the needle-bar is given a downward movement. As the needle enters the cloth, carrying with
 45 it the thread, the whole implement will, on account of the inclination of the needle, be moved forward a step—that is, to a point at which the next introduction of the needle will take place. After the needle has been moved
 50 downward the distance allowed by the stop C it is moved upward, and in this way a loop of the thread carried by the needle will be formed on the outer side of the cloth, there being sufficient friction on the thread by the clutch
 55 to prevent the withdrawal of the loose part thereof. When the needle in its upward movement reaches the point where the slack of the thread between the clamp and the tension is taken up and begins to draw on the supply,
 60 sufficient strain is imposed upon the thread to draw the upper end of the pivoted lock downward, thus pressing the arm g' against the edge of the plate b' , engaging the thread between these parts and preventing its being
 65 drawn back through the eye of the needle. Inasmuch as the thread after passing through the tension passes around the extreme lowest

part of the sheath and thence to the clamp, a strain is imposed upon the thread immediately upon the beginning of the upward move-
 70 ment of the needle-bar, because the clamp on the needle-bar is at all times above the lower end of the sheath. Thus the strain on the thread by which the clamp is operated is produced immediately on the beginning of the
 75 upward movement of the needle-bar. A continuance of the upward movement of the needle-bar results in drawing through the tension device a length of thread corresponding to that necessary to form a succeeding loop.
 80 On a second downward movement the drawing of the thread through the tension ceasing at once on the beginning of this movement the clamp is released, and the thread confined between the tension device and the
 85 clamp on the upward movement is drawn through the clamp and furnishes material for the loop about to be formed. The described movements of the parts are continued by the reciprocation of the needle-bar, and a turf of
 90 uniform length is formed. The length of the loops may of course be varied at will by the regulation of the length of the stroke by the stop C.

The device covered in the present applica-
 95 tion is carefully to be distinguished from implements of the kind in which a lock operated by the mere reciprocation of the needle-bar is relied upon to withdraw the thread by locking the same on beginning of the up-
 100 stroke and holding it in a fixed position relative to the needle as the latter is withdrawn. In my construction the tension performs the function of the lock in the device referred to. It is not possible, however, to construct an
 105 implement having a tension alone to regulate the withdrawal of the thread, for the reason that it is not practicable to produce a tension device which will exert a strain corresponding to the varying friction on the thread by
 110 reason of introducing the same into fabrics of varying density. If the tension alone were used and should be of a form to exert more strain on the thread than was exerted by the fabric, then not only would the loop forward of
 115 the needle be withdrawn, but so, also, would the loop in rear of the needle be withdrawn, thus destroying the practicability of the device. Should the pressure of the tension device on the thread be less than that exerted
 120 by the fabric, the withdrawal of the needle would result in leaving the material of both the forward and rear loops projecting through the goods and would draw through the tension device a quantity of thread in excess of
 125 that required. In my device, to insure the withdrawal of the forward loop only and also the withdrawal through the tension of the material of a succeeding loop, I so construct the tension device that it will exert a pres-
 130 sure on the thread as great as the maximum tension the goods will ever exert on the thread and arrange a locking device so that it will be operated by excess of tension in the ten-

sion device, and thus cause it to grasp the thread between the tension device and the needle, insuring the perfect operation of the device under all conditions. Another material difference between the class of devices referred to and mine is that in the former the lock is operated by a part which is moved in advance of the needle-bar, while in the latter the clamp is operated solely by the thread.

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

1. A fabric-turfing implement comprising a sheath or casing, a reciprocating needle-bar, a needle carried by the needle-bar, a tension device attached to the sheath or casing and through which the thread passes from the supply, and a thread-clamping device carried by the needle-bar, whereby as the needle-bar ascends the clamp is operated by the tension imposed upon the thread by the tension device to supply sufficient slack in the thread for the formation of the succeeding loop, substantially as described.

2. A fabric-turfing implement comprising a sheath or casing, a tension device on the sheath or casing, a reciprocating needle-bar, a needle carried by the needle-bar, a thread-clamping device having a pivoted member and carried by the needle-bar, and in contact with which the thread passes, whereby when the thread is drawn through the tension device the clamp will be operated and the passage of the thread through the needle on the upward movement of the needle will be prevented, and a quantity of thread sufficient to form a succeeding loop will be drawn from the supply, substantially as described.

3. A turfing implement comprising a sheath or casing, a reciprocating needle-bar, a needle carried by the needle-bar, a thread-clamping device attached to and movable with the needle-bar and through which the thread passes, a tension device on the sheath or casing, and an adjustable stop arranged on the sheath or casing by which the movement of the needle-bar is determined, substantially as described.

4. A fabric-turfing implement comprising a reciprocating needle-bar having a transverse perforated plate at its lower end, a movable socket arranged adjacent to the plate, a spring-plate adjacent to the socket, and a needle projecting through the plate, received by the socket, and borne upon by the spring whereby the needle will be normally kept in an inclined position, and will be prevented from displacement in use, substantially as described.

5. A turfing implement comprising a reciprocating needle-bar having a transverse perforated plate at its lower end, a socket ar-

anged adjacent to the plate and carried by and movable with respect to the needle-bar, a spring having one end attached to the needle-bar, and having its other end bent, a needle having a beveled end and also a groove adjacent to the bevel, the groove being designed to receive the bent end of the spring, substantially as described.

6. A turfing implement comprising a reciprocating needle-bar having a transverse plate at its lower end, the plate being provided with an opening, a socket arranged on the needle-bar adjacent to the plate, the socket being movable with respect to the needle-bar and having a curved portion and lateral wings, the lower end of the curved portion being removed, a spring attached to the needle-bar at one end and having its other end bent and a needle designed to enter the socket and having its upper end beveled, and having a notch adjacent to the beveled portion, the notch being designed to receive the bent end of the spring, substantially as described.

7. A fabric-turfing implement comprising a sheath or casing, a reciprocating needle-bar having a transverse plate at its lower end, a lever pivoted adjacent to and adapted to bear against the transverse plate and provided with thread-receiving arms on opposite sides of the pivot, a needle, and a tension device arranged on the sheath or casing, substantially as described.

8. A turfing implement comprising a sheath or casing, a reciprocating needle-bar having a transverse plate at its lower end, a pivoted clamp arranged adjacent to the plate and provided with two arms, the arms being arranged on opposite sides of the point at which the clamp is pivoted, one arm being placed adjacent to and parallel with the transverse plate, and the other arm being provided with an arm bent at an angle to the arm, a needle, and a tension device on the sheath or casing arranged between the thread-supply and the clamp, substantially as described.

9. A fabric-turfing implement comprising a sheath having a presser-foot formed at its lower end, a notch in the lower end of the sheath between the parts of the presser-foot, a tension device attached to the face of the sheath, one end being bent parallel with the lower end of the sheath and bearing against the face thereof, and the other being formed into an open eye, a needle-bar having a clamp thereon, and a needle attached to the needle-bar, substantially as described.

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

MATTHEW F. CONNETT.

Witnesses:

L. Y. HANCOCK,
S. L. MCADOO.