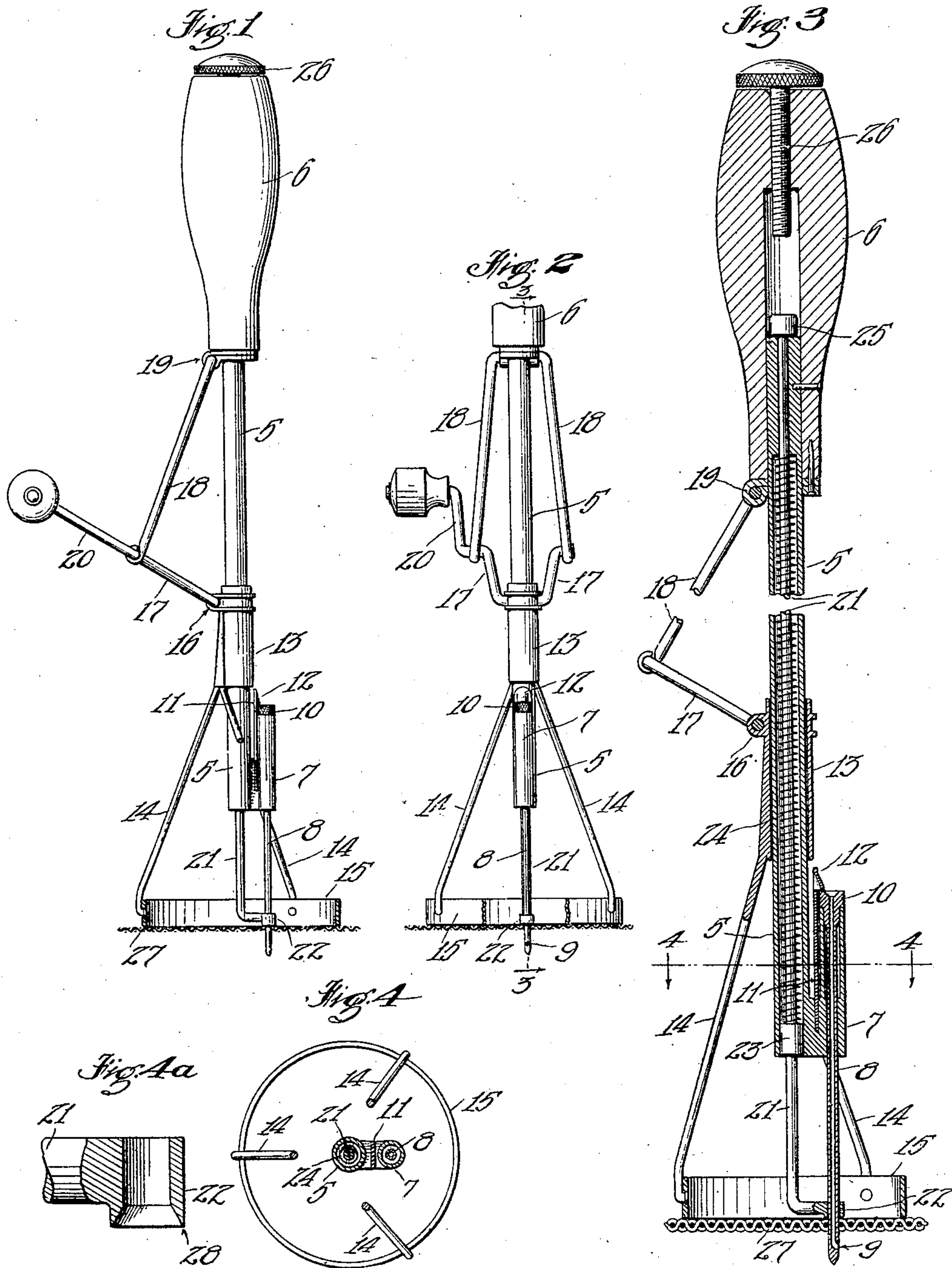


No. 868,521.

PATENTED OCT. 15, 1907.

J. J. BAIRD.
TURFING MACHINE.
APPLICATION FILED NOV. 23, 1906.



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UNITED STATES PATENT OFFICE.

JAMES J. BAIRD, OF LOS ANGELES, CALIFORNIA.

TURFING-MACHINE.

No. 868,521.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed November 23, 1906. Serial No. 344,689.

To all whom it may concern:

Be it known that I, JAMES J. BAIRD, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Turfing-Machines, of which the following is a specification.

My invention relates to a machine operatable by hand and consisting of two parts which are operated by the different hands of the operator in which thread may be tufted into loosely woven fabric; and the object thereof is to produce a machine of simple construction for that purpose.

I accomplish this object by the machine described herein and illustrated in the accompanying drawings in which:—

Figure 1— is a side elevation of my turfing machine with a portion of the stepper foot broken away. Fig. 2— is an end view of my improved machine with parts broken away. Fig. 3— is a section on the line 3—3 of Fig. 2. Fig. 4— is a section on the line 4—4 of Fig. 3. Fig. 4^a— is an enlarged section of the presser foot.

In the drawings 5 is a hollow needle bar, to the upper end of which is secured a hollow handle 6. On one side of the lower end of the needle bar is secured the needle socket 7 through which passes the hollow needle 8 having an eye 9 on one side thereof near the point. The needle has a head 10 which rests upon the upper end of the socket, the upper part of which extends a short distance above its point of union with the needle bar. A spring 11 is preferably secured to the needle socket as best shown in Fig. 4 and has a head 12 which is adapted to spring over the head of the needle to retain it in place in the socket. This head can be sprung over against the needle bar, thereby clearing the head of the needle and permitting it to be removed from the socket when desired.

Upon the outside of the needle bar is a sleeve 13, to the lower end of which are secured arms 14, which arms are preferably resilient and three in number and equally spaced apart. Secured to the lower end of these arms is a circular band 15 which constitutes the stepper foot. To the upper end of the sleeve is secured a bearing 16 in which is mounted a crank 17 which is preferably formed of heavy wire. This crank is pivotally connected to a U-shaped link bar 18 which is mounted in bearings 19 secured to the needle bar just below the handle. One side of crank 17 extends through the link and is then bent to form an operating handle 20. Extending through the needle bar is the presser foot shank 21, the lower end of which is L-shaped and has secured thereto presser foot 22. The bore of the needle bar is enlarged from near the top thereof to the bottom and the shank of the presser foot is provided with a collar 23 which snugly fits the enlarged bore and normally is held at the bottom thereof

as shown in Fig. 3. Above this collar is a spiral spring 24 which rests upon the collar and the other end thereof bears against the upper end of the needle bar. On the upper end of the shank of the presser foot is screwed a round nut 25 which holds the shank in place in the needle bar. In the top of the handle is a regulating screw 26 to regulate the length of stroke of the presser foot, thereby regulating the depth of penetration of the needle through the fabric 27.

In the operation of my machine the thread which it is desired to use in tufting (not shown) is threaded downwardly through the hollow needle and through the eye thereof in the usual manner. The operator then takes the handle in his left hand and forces the needle through the fabric, and then takes hold of the operating handle 20 with the other hand and rotates the crank. During the rotation of the crank a part of the time the stepper foot will rest on the fabric and support the other parts and keep the canvas taut so that the lines of the pattern can be readily followed, and a portion of the time the presser foot will rest on the fabric and support the parts. During a portion of the time that the presser foot supports the parts, the stepper foot is above the canvas and during a portion of the time that the stepper foot supports the parts the presser foot and needle are above the canvas, at which time by a slight movement of the left hand the needle may be carried in any direction the distance required to form a new stitch, as the resiliency of the fabric and of the arms which carry the stepper foot will permit of this movement of the needle. As the needle descends it passes through the fabric a little in advance of the time at which the presser foot rests upon the fabric. As shown in Fig. 4^a the bottom portion of the presser foot is brought to an edge 28 which is as sharp as it can be made without cutting the thread. The purpose of this construction is to hold the thread so tightly against the canvas that it will not slip and pull on the last stitch when the thread is drawn through the needle to form a new stitch. If the lower edge of the presser foot were a flat smooth edge there would be a greater tendency for the thread which formed the last stitch to be drawn up during the process of forming a new stitch, thereby rendering the tufting loops uneven, but by forming a blunt edge on the lower portion of the presser foot as shown in Fig. 4^a this edge will sink into the canvas a certain depth and carry the thread with it, thereby absolutely preventing the thread which was formed into the last loop from being drawn upon when a new loop is formed. It will be understood that the fabric being tufted is stretched upon a frame, thereby giving it the necessary resiliency to permit the needle to be deflected or moved in any direction when in its elevated position above the fabric. The distance between the loops which project on the under side of the fabric I term stitches and are regulated by the side

pressure of the hand holding the handle and as this pressure can be exerted in any direction it is very easy for the operator to follow a pattern stamped on the fabric.

5 Having described my invention what I claim is:—

1. The combination of a hollow needle bar having a hollow handle on the upper end thereof; a needle socket secured to the lower end of said bar; a hollow needle having a head, said needle being adapted to pass downwardly through said socket until the same contacts therewith; a spring catch secured to said socket and having a head adapted to pass over the head of the needle and hold the same in the socket and to be sprung away from the needle head to permit the needle to be removed; a presser foot having the bottom thereof brought to an edge surrounding said needle; a shank secured to said presser foot and extending upwardly within and through the needle bar; a collar secured to said shank within the needle bar; a spiral spring surrounding said shank within the needle bar; a nut on the top of said shank; a sliding sleeve having a plurality of arms secured thereto slidably mounted on said needle bar; a stepper foot secured to the lower ends of said arms; a bearing secured to the upper end of said sleeve; a crank pivotally mounted in said bearing, one of the ends of said crank being extended to form an operating handle; a bearing secured to said needle bar adjacent to the handle; and a U-shaped link bar mounted in said bearing and pivotally connected with said crank.
2. In a turfing machine, the combination of a needle bar with a stepper foot slidably mounted thereon; a crank secured to said stepper foot; and a U-shaped link secured

to said bar, said crank and link being pivotally secured together.

3. In a turfing machine, the combination of a hollow needle bar; a stepper foot slidably mounted thereon; means to reciprocate said stepper foot on said needle bar; a presser foot having the lower portion thereof brought to a blunt edge; a shank secured to said presser foot and extending upwardly within and through said needle bar; a spring surrounding said shank within said needle bar; and a hollow needle removably secured to said needle bar, said needle being adapted to pass through the stepper foot.

4. In a turfing machine, the combination of a hollow needle bar having a hollow handle secured to the upper end thereof; a hollow needle removably secured to the lower end thereof; a presser foot having the lower edge thereof brought to a blunt edge and surrounding said needle; a shank secured to said presser foot extending through said needle bar; and a regulating screw in the top of said handle adapted to regulate the length of movement of the presser foot shank in the needle bar and handle.

5. In a turfing machine, a hollow needle bar having a hollow handle secured to the top thereof; a spring pressed presser foot having a shank passing through said needle bar; and means adjustably secured in the handle to limit the longitudinal movement of said shank.

In witness that I claim the foregoing I have hereunto subscribed my name this 16th day of November, 1906.

JAMES J. BAIRD.

Witnesses:

G. E. HARRHAM,
EDMUND A. STRAUSE.