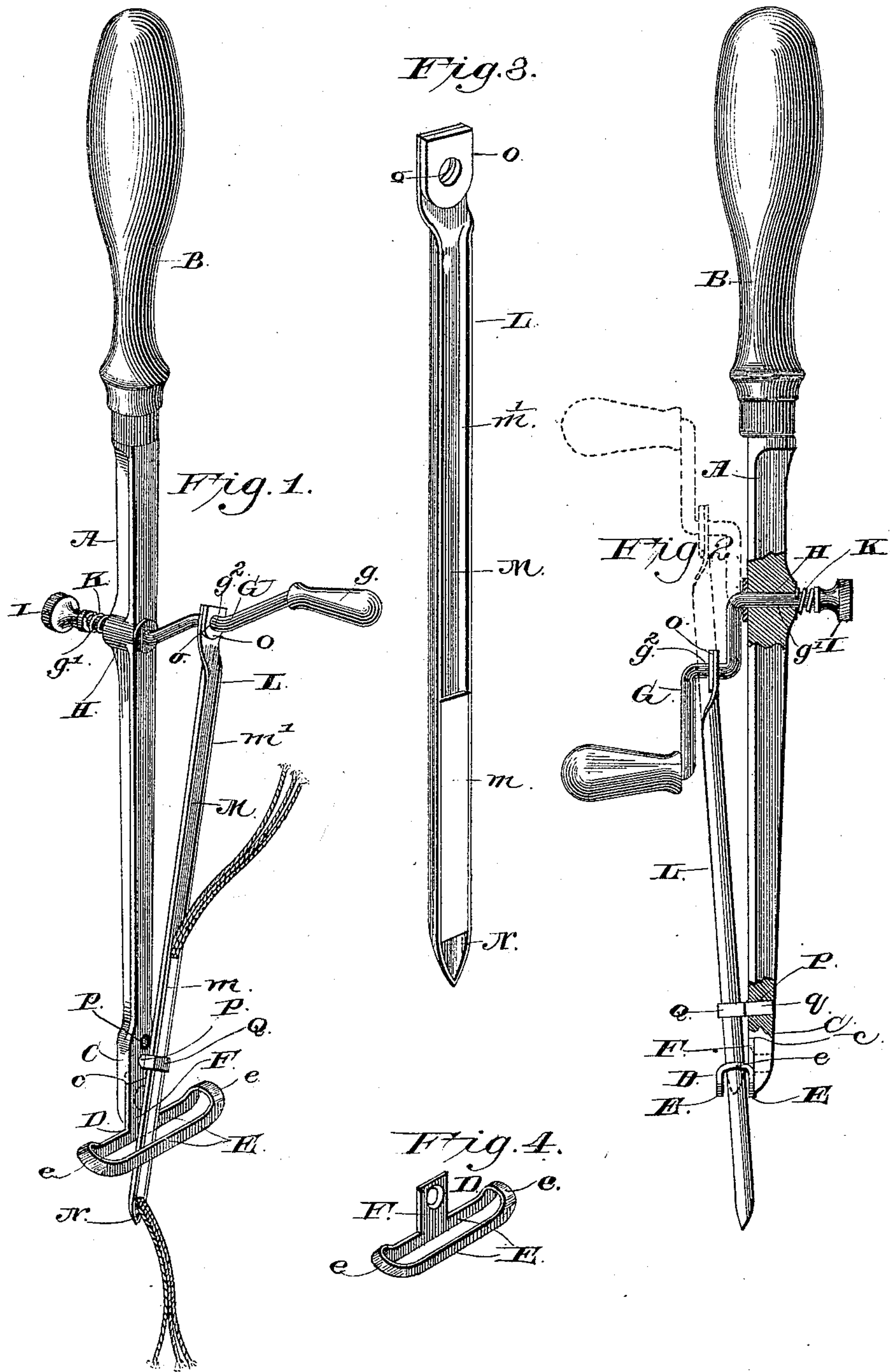


(No Model.)

C. E. COE.
TURFING IMPLEMENT.

No. 448,845.

Patented Mar. 24, 1891.



WITNESSES
M. Fowler
E. E. Wayle

Fig. 5.
F. q.
c. e.
By *C. A. Snowdon*
His Attorneys

INVENTOR
Charles E. Coe

UNITED STATES PATENT OFFICE.

CHARLES EDWIN COE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO
T. J. CHENEY, OF SAME PLACE.

TURFING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 448,845, dated March 24, 1891.

Application filed December 13, 1888. Serial No. 293,480. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EDWIN COE, a citizen of the United States, residing at St. Louis and State of Missouri, have invented new and useful Improvements in Turfing Implements, of which the following is a specification.

My invention relates to improvements in turfing implements, having for its objects to simplify and cheapen their construction and render their operation easier and more effective. Heretofore devices of this character and for this purpose have been complicated in construction, thereby rendering their operation laborious and uncertain and also to some extent irregular. This objection of complicated construction applies more particularly to the feeding devices heretofore used, which are usually provided with sliding spring-actuated loop-holders (or heads carrying loop-holders) or needles. These means are objectionable for various reasons, but principally because they operate in jerks, and therefore are liable to tear or twist the material which is being operated upon, and, further, because the said feeding devices are liable to need frequent repair and adjustment, and, further, because the said devices cause friction which must be overcome by the operator, and the additional exertion necessary to accomplish this renders the operation of the machine uncertain.

In the improved machine the feed is automatic and direct and is governed entirely by the operation of the needle.

The invention is more fully described hereinafter in connection with the accompanying drawings, and specifically pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a turfing implement embodying my improvements. Fig. 2 is a side view, partly in section. Fig. 3 is a detail view of the needle. Fig. 4 is a similar view of the presser-foot; and Fig. 5 is a cross-section of the ear of the handle, showing the guide-loop journaled therein.

Referring by letter to the drawings, A designates the shank of the improved device, provided at one end with a handle B and provided at the other end with a flattened ear C, having a shoulder *c* at its upper end.

The presser-foot D consists of the parallel separated bars E E, curved upwardly at their ends and connected by the curved end bars *e e*. One of the side bars E is provided with an upwardly-extending ear F, which is riveted or otherwise firmly secured to the ear C and bears against the shoulder *c*. The lower edges of the side bars are rounded and smoothed, in order to slide freely on the surface of the material being worked.

The operating-crank G is provided at its outer end with a knob *g* and at its inner end with a spindle *g'*, which is mounted in a transverse opening or bearing H in the shank, and the projecting threaded end of the said spindle is engaged by a thumb-nut I, which bears against the outer end of a coiled spring K, arranged on the spindle between the nut and the shank. This spring prevents lost motion in the crank and allows free rotation thereof. The crank is provided at a suitable distance from its inner end with an offset *g''*, to which is connected the rear or upper end of the needle L. This needle is semicircular in cross-section, being flat on one side and rounded on the other, and is hollow or bored longitudinally. The lower portion of the bore M of the needle is covered, as seen at *m*, and the upper portion of the said bore is open, as seen at *m'*, thereby allowing the insertion of the yarn into the needle. A small eye or aperture N is formed in the flat side of the needle at the tip thereof, through which the yarn after passing through the covered portion of the bore projects. The upper end of the needle is flattened to form an ear O, provided with an aperture *o*, which engages the offset of the operating-crank. A series of perforations P are formed in the shank near its lower end to receive the guide-loop Q. This loop is formed, preferably, of a strip of metal which conforms to the shape of the needle, and the ends or arms *q q* thereof are fitted in one of the said perforations and turn therein as the needle is operated to accommodate the movements of the latter. The lower end of the needle operates between the side bars of the presser-foot, and when in its retracted position, as shown in dotted lines in Fig. 2, its tip is between the said side bars, but is raised above their lower edges. This prevents the free end of the needle from being drawn outward

to remove the guide-loop from its perforation.

Various-sized needles may be used in this implement, and in order to adjust a different one therein the thumb-nut is removed from the end of the spindle, and the offset of the crank is disengaged from the aperture in the upper end of the needle then on the machine, after which the said offset may be engaged in the aperture of the desired needle. The guide-loop is also substituted by a loop which fits the needle.

In operating the device the presser-foot is placed against the surface of the material to be ornamented with its side bars on opposite sides of the line-marking thereon which is to be followed. The crank is then rotated, thereby causing the needle to alternately advance and retreat, thereby carrying the yarn through the material and forming loops on its reverse side. It will be seen that the needle advances and retreats on different lines—namely, when it advances its rear end is on one side of the shank and when it retreats its rear end is on the other side of the shank, the movement of the operating-crank causing this lateral vibration of the needle. This lateral vibration of the rear end of the needle causes a corresponding vibration of the front end thereof, and therefore when the needle is drawn back (out of the material) and before it commences to advance it swings laterally over the material, and consequently enters the said material at a different point from which it left it. This feeds the machine laterally and causes the stitches to be of uniform length. To alter the length of the stitch, arrange the guide-loop in different perforations P P, thereby altering the length of the lower arm of the needle or the portion below the guide-loop, and consequently altering the length of the lateral swing of the said lower end.

It will be obvious that the length of the stitch in this machine cannot vary with one adjustment of the guide-loop, and it is governed entirely by the lateral vibration of the rear end of the needle, and this is governed by the direct movement of the crank, which cannot vary.

It will be seen that in the operation of this implement the material cannot be torn or strained, as the needle is drawn straight out of the same, and it is not until the top thereof is out of contact with the material that it swings laterally, and this lateral swing is completed before the advance of the needle commences. When the needle is at the extremity of its forward movement, it is swung laterally in the opposite direction to that in which it swings when removed from the ma-

terial, thereby sliding the presser-foot a certain distance over the surface of the material.

Having thus described my invention, I claim—

1. In a turfing implement, the elliptical-shaped foot D, consisting of the parallel separated bars E, curving upwardly at their ends, where they are joined by the curved end bars e, the whole forming an unobstructed guide-way for the needle, said presser-foot being constructed of flat metal set edgewise and having an ear F extending from one of the bars E, by means of which the presser-foot is removably secured in place.

2. In a turfing implement, the combination, with a shank provided with a suitable presser-foot, of the crank provided with a spindle mounted in a bearing in the shank, the thumb-nut engaging the threaded projecting end of the said spindle, the spring coiled on the said spindle between the thumb-nut and the shank, and the needle connected at its rear end to the crank, substantially as specified.

3. The combination, with the shank A, provided with a presser-foot on its outer end and a handle on its inner end, of the crank G, provided with an offset g^2 and a spindle g' , mounted in a bearing in the shank, the tension-spring connected to the projecting end of the said spindle and bearing against the rear side of the shank, and the needle provided at its inner end with an aperture engaging the offset g^2 , substantially as specified.

4. The combination, with the shank A, provided with a presser-foot on its outer end and a handle on its inner end, of the crank G, formed of a single piece of wire provided with an offset g^2 and a spindle g' , which is passed through and mounted in a bearing in the shank, and the needle provided at its inner end with an aperture engaging the offset g^2 , substantially as specified.

5. In a turfing implement, the shank combined with the actuating mechanism, the hollow turfing-needle connected with the actuating mechanism and made substantially semicircular in cross-section, with the flat inner side and the round outer side, and having the lower or outer portion of the bore of the needle covered, as at m , and terminating in the eye or aperture N, the upper or inner portion being open, as at m' , substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CHARLES EDWIN COE.

Witnesses:

A. J. ADKINS,
W. GALVAN.