

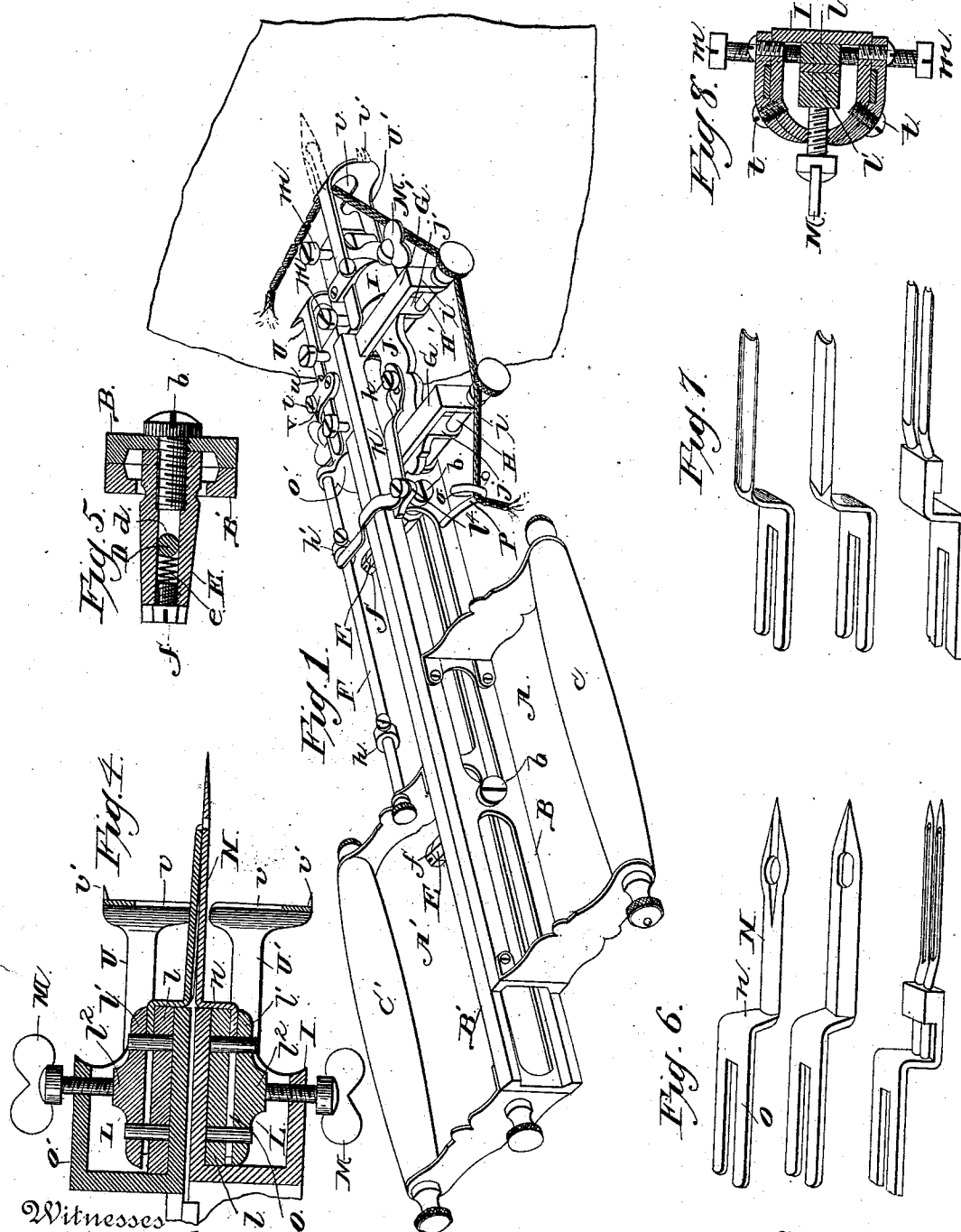
(No Model.)

2 Sheets—Sheet 1.

R. L. SIMONS.
FABRIC TURFING IMPLEMENT.

No. 358,490.

Patented Mar. 1, 1887.



Witnesses
M. E. Fowler
Edward G. Siggers

By *his* Attorneys

Inventor
R. L. Simons
C. A. Snow

(No Model.)

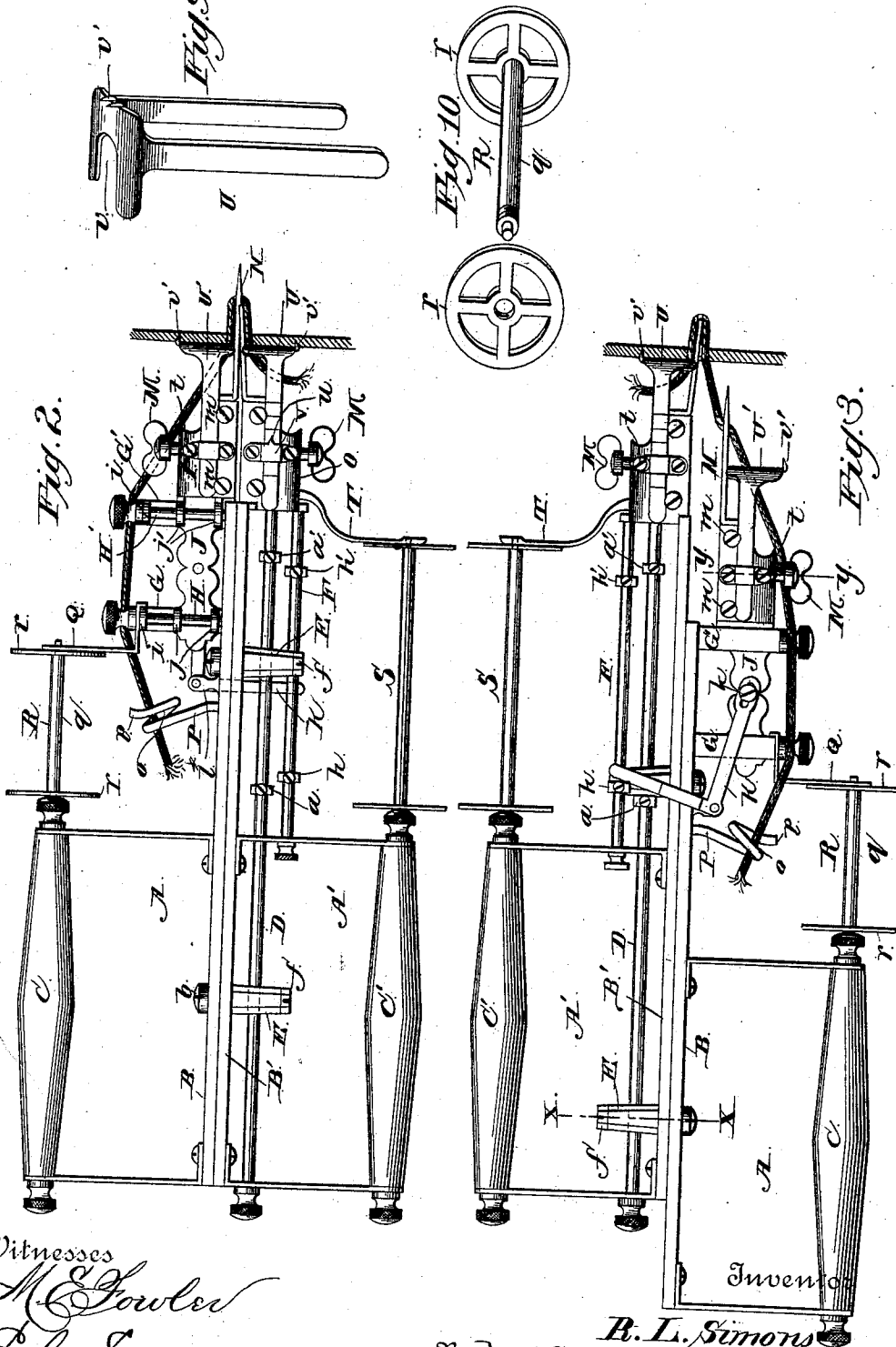
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UNITED STATES PATENT OFFICE.

RICHARD L. SIMONS, OF TOLEDO, OHIO, ASSIGNOR OF ONE-HALF TO JOHN ANDERSON, OF SAME PLACE.

FABRIC-TURFING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 358,490, dated March 1, 1887.

Application filed February 4, 1886. Serial No. 190,829. (No model.)

To all whom it may concern:

Be it known that I, RICHARD L. SIMONS, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Improvement in Fabric-Turfing Implements, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to embroidery-machines, or that class of devices which are employed in turfing fabric, so as to make raised ornaments on rugs, mats, tidies, and the like.

Heretofore in this art it has been customary to employ two sliding blocks provided with handles, one of the blocks carrying the needle, and the other having a spring loop-holder, which is pressed constantly against the needle.

In the operation of this machine the needle, which has been previously threaded with the desired color of yarn or rags, is forced through the material to be ornamented, carrying a portion of the yarn with it to form a loop. The spring loop-holder is then forced into the same opening made by the needle, so as to catch the loop and hold it during the withdrawal of the needle. As soon as the needle is withdrawn the loop-holder, which is still in the material holding the last loop made, is sprung laterally to give room along the goods for the needle in making the next stitch or loop. The springing of the loop-holder has been found objectionable in practice, inasmuch as it caused the hole in the material made by the needle, and in which the loop holder is received, to be enlarged, and also tended to tear the goods. While the loop-holder is being thus sprung laterally, as stated, the needle is forced into the goods again to make the second loop or stitch, when the loop-holder is withdrawn from the goods and by its spring action, is thrown suddenly against the needle, causing the portion of the loop previously made to be drawn out and the material between the loop-holder and the needle worked or compressed in a mass, along with said loop, against the needle in the sliding of the loop-holder backward, thereby causing the loops to be made short and irregular and the goods tangled. In consequence of this it has been found that the machine mentioned (known as the "Ross") makes imperfect work, especially when sewing with yarn or fine threads, inasmuch as the holes

made in the goods are enlarged to such an extent that the yarn does not fill them, and thus the loops or stitches of the ornaments are loose and otherwise imperfect. Again, these machines cannot be used to ornament silk or other light goods, as the spring lateral action of the loop-holder in making the stitches tends to tear or mutilate the work; neither can the machines sew with silk, as the needles are not detachable or interchangeable, and the needle which could work properly with thick yarn or rags would not answer for fine embroidery when employing silk threads.

There is another style of machine on the market which embodies the essential features of the one before mentioned, differing therefrom in that the loop-holder is made rigid, and the needle is hinged and spring-pressed, so as to be thrown out from the loop-holder to make the next stitch by the contact of a screw along the length of the needle-bar. This last improvement has been found to possess greater disadvantages than the first-mentioned contrivance, and this arises from the fact that the hard contact of the screw binding along the length of the needle-bar makes it very laborious to work, causing the operator at times to bring the needle back but half the required distance, when he should carry it back entirely, because the farther the needle is drawn out the tighter the screw binds, making the operation hard, and hence it is but natural that the operator will, either unintentionally or otherwise, neglect to draw the needle out the required distance. Now, if this is not done the result is that the needle is not thrown laterally a sufficient distance to accord with the stitches previously made, and uneven work is the inevitable consequence. Furthermore, the hard contact of the screw opposing against the face of the needle causes the two sliding parts to bind at times, and to continue the operation it is required to use extra effort, making the operation jerky and irregular, the result being that the thread or yarn is either broken or disarranged, or that the goods itself becomes torn or mutilated. This last machine possesses the disadvantages hereinbefore alluded to—that the needle is not capable of detachment to provide for the varying circumstances of the use of the machine and enable it to be employed in ornamenting silk or working with silk ar-

titles, where a large needle would do irreparable injury. These are the main points of disadvantage possessed by the two styles of hand-embroidery machines now on the market, and it is to avoid such objections and provide a machine which will be perfect and complete in every respect that the present invention is designed.

Therefore, the object of the present improvements when combined is to construct a machine which will do all the work that the present class of machines are designed to perform, and in addition provide a greater field of usefulness by enabling it to be employed in ornamenting silk or other light fabrics without any possibility of tearing the goods.

To this and other ends the several improvements are aimed at, and they may be stated in detail, as follows: First, a laterally-movable head carrying the needle, which head is positively acted upon at regular intervals to cause the needle to be thrown laterally outward and drawn in without the employment of any spring-actuated means, all the movements being positive, direct, and easy; second, a series of stops or means, substantially as described, to act upon the laterally-movable needle-head and cause it to be thrown out and drawn into its normal position, said stops being adjustable at varying distances apart, so as to regulate the lateral throw or pitch of the needle to accord with the desired width of stitch; third, another series of stops adjustable at varying distances apart to regulate the forward-and-backward movement of the needle and loop-holder, and enable the length of loop to be adjusted, so that no longer movement will be made than is requisite to make the required sized loop, thereby saving all unnecessary lost motion; fourth, the employment of an improved form of handle in this class of machines, consisting of an open frame which will allow the hands of the operator to grasp and work the machine in an easy comfortable manner, so as to enable the work to be performed more expeditiously and with less probability of becoming tired or the hands cramped by the strained position of the fingers; fifth, the employment of detachable reels or bobbins to be carried by either one or both of the two sliding parts of the machine, which reels or bobbins are made detachable, and are to be employed when it is desired to use two or more colors in the work; sixth, the use of a spring or other cushion at the coupling-connection of the two sliding parts or members, which cushion will serve to take up the lost motion or slack between the parts; seventh, an improved form of yarn-guide consisting, essentially, of an open ring, which will allow the passage of the thread or yarn into the ring without the expenditure of unnecessary time in threading the yarn through the guide, as when a solid eye or ring is used; eighth, the adaptation of the machine whereby I am enabled to use different sizes and shapes of needles and loop-holders to suit the varying circumstances of

the particular use to which the machine is put. Thus, in working with silk or other fine thread, I can detach the loop-holder and needle which was previously used with yarn or rags, and substitute therefor finer needles and a smaller sized loop-holder, and this can be done in a very short time without requiring the separation of any other part of the machine than the clamping devices which hold the foot or shank of the needle; ninth, screws or other suitable means for adjusting the needle and loop-holder laterally, so as to retain them in alignment with each other; tenth, adjustable feet for the heads which carry the needle and loop-ladder, said feet being provided with prongs or teeth to engage the material.

With these and other minor improvements in view the said invention consists in the novel construction, combination, and arrangement of parts, as will be hereinafter set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of my machine, showing the first movement thereof, the needle being pushed forward to penetrate the goods or material and carry the yarns along with it, forming the first stitch, the bobbins or reels not being shown. Fig. 2 is a bottom plan view showing the second movement, looking at the bottom or other side of the machine, the loop-holder having penetrated the same opening in the goods made by the needle, and, catching the loop, serves to hold the same during the withdrawal of the needle. Fig. 3 is a top plan view similar to Fig. 1, showing the third movement, the needle-head having been thrown out laterally to one side to give room along the cloth for the needle to make the next stitch. Fig. 4 is a central longitudinal section of the forward part of the machine. Fig. 5 is a transverse section on the line $x x$, Fig. 3. Fig. 6 is a detail view representing different forms of needles. Fig. 7 is a similar view of various styles of loop-holders used in connection with the several needles. Fig. 8 is a transverse section on the line $y y$, Fig. 3. Fig. 9 is a detail view of one of the impaling-feet. Fig. 10 is a detail view of one of the bobbins or reels.

Like letters are used to designate corresponding parts in the several figures of the drawings.

Referring to the drawings, it will be seen that my machine comprises, essentially, two parts or members, one sliding upon the other, a needle and loop-holder being carried by the respective members. For purposes of illustration, I shall designate the part or member which carries the needle by the letter A and the other member by the letter A'. The main part of each member consists of a straight flat bar, B B', of cast metal, which bar is cut out or left open along its length, except at such points where it is necessary to attach the other parts of the machine, this construction reducing the amount of metal necessary to form these parts and also making the machine so much lighter, the last consideration being a promi-

5 nent factor in the successful working of a hand-machine for this purpose. These two flat bars B B' slide or work face to face against each other, the surfaces being made very smooth and hard, so as to reduce the friction to a minimum. At the rear or inner ends of the bars B B', I provide handles C C', the two end bars of which handles have their inner ends flanged or bent down and attached by screws to the outer side faces of the bars B B'. This construction provides a simple and efficient attachment of the handles to be so disposed with relation to the other parts as will allow a natural and easy position of the hands without cramping the fingers or causing them to assume a strained position.

20 The handles each consists, essentially, of two end bars and a side bar, the latter, which forms the hand-grasp, being constructed of hard polished wood and located at such a distance from the bars B B' as to leave sufficient space to allow the grasping of the said side bar by the fingers without coming in contact with the two sliding parts of the machine. It will be observed that in operating my machine it is not necessary to tightly clasp the handles in order to obtain a firm hold thereon, as in some styles of machines now on the market, which employ solid ogee-shaped handles. On the contrary, the fingers of the operator may rest loosely in the handles and still propel or work the machine to the proper degree, and for this reason one can operate my machine without having their fingers become cramped, as was usually the case heretofore.

35 D designates a circular rod arranged on the loop-holder side of the machine and passes through openings in the end bars of the handle C', one end of the rod being threaded to screw into the base or inner end of the head which carries the loop-holder, and the other end having a cap or enlarged head, by which the rod may be turned to attach it in position. This rod D is arranged parallel with and at some distance from the bar B'; and located on said rod, above or beyond the handle C', is a pair of stops, *a a'*, which consist of a sliding collar and a set or thumb screw, said stops being thereby adjustable at varying distances apart along the rod, for the purposes presently described.

50 To connect the two parts or members A A', I employ screws *b b*, which work through the bar B of part A into one end of short tubes E, the latter having a central perforation, *d*, longitudinal with the machine, to allow the passage of the rod D. Within the tubes E, on one side of the rod, is located a coiled spring, *e*, or other suitable elastic or spring cushion, which bears or presses against the rod and is held in position by a screw, *f*, which works through the outer end of the tubes against the spring.

65 By withdrawing the screws *b b* the two parts or members A A' of the machine may be separated from each other when desired. The springs *e*, pressing against the rod D, serve to

draw the bar B of part A against the bar B' of part A', holding the parts from any slight lateral play, which would detract from the freedom of longitudinal movement. The springs thus take up the lost motion, should there be any such, thereby reducing the friction and enabling the parts to work true and regular.

70 The tube E at the lower or inner end of the machine performs no other function than that of a coupling-connection between the two parts of the machine; but the other tube E, at the upper or outer end, by reason of its working over the rod D, abuts or strikes the stops *a a'*, so as to limit the throw of the sliding parts or members. In this class of machines, where it is required to make two movements for every stitch or loop, it is necessary, in the interests of speed and economy of both time and material, that the sliding parts or members shall make a throw just sufficient for the purposes, and no more.

85 Speed is attained and time saved by a less movement of the two parts, as will be obvious without further explanation, while material is economized, in that oftentimes it is desired to make only a three-eighths-inch loop on machine which usually makes a three-fourths-inch loop. The usual practice heretofore was to make the three-fourths-inch loop and shear or cut it down to the required size, thereby wasting three-eighths of an inch of yarn or silk for each loop, which would amount to an item if continued. My practice is to adjust the stops *a a'* along the rod D, so that the needle in working forward to make the next stitch is limited in its movement to the required degree, the precise length of the loop being regulated by means hereinafter explained.

95 F designates a supplemental rod, similar to rod D, connecting one of the end bars of handle C' with the base or inner end of the head carrying the loop-holder. On this rod F are located two stops, *h h'*, comprising two sliding sleeves or collars held by set-screws, the purpose of which stops will be hereinafter set forth.

I will now leave this side of the machine and proceed to describe the construction of the opposite side or part.

100 Projecting laterally from the bar B of the part or member A are a pair of posts, G G', the extreme ends of which are flanged or turned down to provide ears or lugs *i*, which are perforated to allow the passage of one end of the cross-rods H H', which are headed at their outer ends, and screw at their inner threaded ends into the outer side face of the bar B. The head I, which carries the needle, is provided with a shank or body portion, J, formed with perforated ears *j j'* at the inner and outer ends, the rod H passing through the lugs *j*, and the rod H' receiving the lugs *j'*. By this construction the shank of the needle-head is allowed a lateral sliding movement on the rods H H'; the motion being exceedingly easy and devoid of any unnecessary friction or hard contact. Projecting outward from

one face of the shank J is a screw or headed stud, *k*, and connecting with the latter is a bell-crank lever, K, one arm of which is slotted to fit around the screw or stud *k*, and the other arm extends transversely over the bars B B' and has its extreme end resting on the supplemental rod F, so as to be acted upon by the stops *h h'*. The lever K is pivoted by a screw to a lug, *l'*, projecting from the bar B.

The distance between the stops *a a'* determines the longitudinal throw or pitch of the two parts or members A A'. The distance between the stops *h h'* regulates the particular point of the movement at which the needle-head is acted upon—that is, forced out or drawn in—and the distance between the stops *a h* and *a' h'* enables the adjustment of the degree of lateral pitch of the needle-head to be effected. The particular method of adjustment will be set forth hereinafter.

The head I, which carries the needle, is made hollow to receive a clamping device, L, which comprises two oblong-shaped blocks, *l l'*, the block *l* having projecting pins or studs to pass through openings in the block *l'*, the latter having a raised contact portion, *l''*, between the two openings. The two blocks *l l'* are fitted together side by side within the hollow head I, the bottom of the blocks resting on the bottom or inner closed end of the head. These blocks, when combined, do not fill the entire space within the head, but leave room around the same for the blocks to work in adjusting them.

Screws *m*, two on each side, work into the head I and bear against the sides of the block *l*, at different points on the length thereof, to keep the clamping device in a true position within the head I. A single thumb-screw, M, works through the outer side of the head against the contact portion *l''* of the block *l'*, so as to force the latter against the block *l* and make the clamping device perfect and secure in every respect.

N designates the needle, having its shank made oval, diamond-shaped, or otherwise in cross-section, the eye of the needle forming a perfect ellipse and the shank being bulged or enlarged at the eye portion. The needle is provided with a slotted foot, O, connecting with the shank by an angular bend, *n*, whereby the shank and foot of the needle stand in different horizontal planes. The needle N is introduced into the head I by passing the slotted foot O down between the blocks *l l'*, the pins of block *l* fitting in the slot of the foot, and the bend *n* resting upon the top or outer end of the block *l*. The thumb-screw M is then operated to force the block *l'* against the foot O and clamp the latter upon the block *l*. By loosening the thumb-screw the contact of block *l'* is lessened, so that the needle may be withdrawn without separating the blocks from each other. The screws *m* may be turned from one side to press the clamping device and the needle over farther toward the opposite side of the head, so as to align the needle with the loop-holder.

The loop-holder head O' is constructed similarly to the head I, being made hollow and provided with the clamping device L M for the slotted foot of the loop-holder, and having the adjusting-screws *m m* to keep the loop-holder in alignment. Inasmuch as these parts are but a duplication of those employed by the needle-head I, a repetition here of the same is unnecessary.

It will be understood that by means of the adjusting-screws *m* the clamping devices for both the loop-holder and the needle may be adjusted laterally to cause the said needle and loop-holder to align with each other; and since the proper alignment of these parts is a necessary feature to the correct working of the machine, I therefore wish it understood that I lay especial stress on this part of my invention.

P designates a yarn or thread guide attached to the bar B of part A and projecting outward therefrom, said guide being made of a single piece of wire twisted at its outer end into a single open coil, *o*, the extremity of the wire being bent or turned outward beyond the coil, as at *p*.

Attached to the post G by the head of rod H is an angular flat spring-plate, Q, the outer end of which is perforated. A bobbin or reel, R, consisting of a rod, *q*, threaded at both ends, and heads or disks *r*, screwing over the threaded ends, has one of the extended ends of rod *q* entering the perforation of the plate Q and the other extended end fitting in a recess in the handle C. Another but larger bobbin or reel, S, similarly constructed, has one of its extended ends fitting in the handle C' and the other end received in a perforation provided at one end of a spring-plate, T, attached to the loop-holder head O'. By this construction the bobbins or reels may be detached from the machine by springing the plates Q T laterally out of engagement with the end of the bobbins or reels, when the latter may be withdrawn in a very short time without separating any of the parts. The reel or bobbin itself may be packed together in a very small space, when not in use, by unscrewing or separating both the disks or heads from the rod *q*.

When it is desired to supply the bobbins or reels with silk or other thread which comes in spools, one of the heads or disks is withdrawn, and the spool is slipped on the rod *q*, when the head may be fitted in place again. Of course this saves the trouble of rewinding the silk from the spool to the bobbin; but when using yarn (which is sold in skeins) it will be necessary to wind it onto the reel or bobbin.

Two spools of silk or varieties of yarn may be placed on the large bobbin or reel S, and one on the small bobbin R, and thus the machine will have at command three different colors to draw upon, as desired. Of course all three colors may be used at the same time, if desired; hence my arrangement will save the necessity of having balls of yarn dragging over the floor, and avoid the trouble of disconnecting each ball from the machine whenever a change of

the color of yarn is desired. The yarn or thread from each bobbin is passed through the thread-guide P by slipping it around the open ring or link *o* until it is received within the latter, when the thread rests upon the extended arm *p* and is supported thereon. The thread or yarn then passes over the heads of the rods H H' and around the needle head I through the eye of the needle N. The open eye or link *o* of the thread-guide I claim to be decidedly superior to the closed eye-guides now in use, in the fact that the yarn or thread may be inserted laterally through the opening of the eye without taking time in threading it, as is now done.

U U' designate impaling-feet, the former, U, for the loop-holder, and the latter, U', for the needle, said feet being made U-shaped in form, so as to provide two parallel arms, which extend on each side of the heads. A set-screw, *t*, works through the clasps, so as to hold the feet U U' from further movement after they have been adjusted. The foot U is provided with index-marks on the arms thereof, which marks are one-eighth of an inch apart, and the clasp V is formed with a pointer or finger, *u*, to indicate on the foot U the necessary adjustment. Each of the feet U U' is provided with an opening, *v*, and two or more teeth or prongs, *v'*.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the annexed drawings.

The feet U U' are designed to press against the material or goods with the teeth or prongs thereof entering the same. To set the machine the foot U is drawn out until the index-finger *u* on the clasp V gives the desired adjustment—say three, four, or five eighths, according to the size of loop to be made on the fabric. The set-screw *t* is then tightened to hold the arms of the foot U to the adjustment effected. The members or parts of the machine are then worked to cause the curve in the end of the loop-holder to come on a line with the lower or inner curve in the eye of the needle, and when this is done the foot U' of the needle is adjusted to come on a direct line with the foot U, which latter was previously adjusted to make a certain-sized loop. The machine is now in such a shape that the needle cannot penetrate the goods any greater distance than the loop-holder, for, as has been stated, the notch in the outer end of the latter was adjusted to come on a line with the eye of the needle, and the two feet U U', which abut or strike the cloth or goods, limit the outward or forward movement of the two parts. Since the abutting forward ends of the two feet are on a line with each other, the loop-holder catches the loop and holds it at the point where such loop was carried by the needle. To set the width of the stitch, the machine in the condition just stated is threaded with yarn or other thread, and the part A is operated to force the needle into the cloth, along with

the yarn, to form the first stitch. The loop-holder is then operated or forced into the same hole made by the needle, so as to hold the loop first made during the withdrawal of the needle. Upon the withdrawal of the needle, as soon as its point leaves the outer edge of the cloth, the part A is held stationary until the block *h* on the rod F can be adjusted along the same to and against the contact end of the bell-crank lever K. When this has been done the part A is moved backward farther, (the bell-crank lever abutting against the stop *h*,) until, by the action of the stop *h* against the lever K, the needle-head I is thrown laterally a sufficient degree to make the desired width between the stitches or loops, when the stop *a* is adjusted on the rod D up to and against the tube E, thus limiting the farther backward movement of the part A. It will thus be seen that the needle-head I is thrown out laterally, not merely by the contact of lever K with the stop *h*, but by the subsequent movement of the part A after and during the contact, and the degree of this lateral throw of the needle-head is determined by the distance the part A travels after the bell-crank lever abuts against the stop *h*, and this is regulated by the stop *a*, so that the distance between the stops *a h* regulates the width between the stitches or loops. To set the return movement of the loop-holder after it leaves the last completed loop, as soon as its point leaves the cloth the part A' is held stationary until the stop *h'* can be set up against the bell-crank lever K, which is then near the forward end of the bar, when the stop *a'* is set against the tube E to limit the farther backward movement of the part A'.

It will thus be seen that the stops *a h* limit the backward movement of the needle part A so that as soon as the needle is wholly withdrawn from the fabric it is thrown laterally ready to make the next stitch, thus avoiding the necessity of drawing the needle entirely back. The stops *a' h'* limit the backward movement of the loop-holder part A', and thus as soon as the loop-holder is entirely withdrawn from the fabric it is in position ready to pass into the goods again to catch the loop just made. Since the parts A A' do not have to work any farther backward than is necessary, and the feet U U' limit the forward movement, it will be seen that one can work much faster with my machine and do equally as good work, inasmuch as all lost motion is avoided.

The size of the loop is to be determined by the foot U on the loop-holder, which foot regulates the position of foot U' on the needle. By means of these feet U U' the adjustment can be changed in a very short time. Oftentimes in making these raised ornaments it is desired that one portion of the ornament should be raised above the other, to give proper effect. In my machine I adjust the feet U U' farther in or out, as desired, so that said feet when they strike the fabric will bind the for-

ward movement of the needle through the fabric, which movement will be decreased or diminished accordingly as the outer ends of the feet recede or come closer to the eye of the needle and point of the loop-holder. Since the distance between the outer end of the feet and the eye of the needle determines the length of the loop, and the precise distance is indicated on the foot U, the adjustment is made easy and effective. The teeth or prongs on the foot U' engage the cloth or fabric, so that on the backward movement of the loop-holder the needle will not be thrown in laterally, so as to make an irregular or uneven stitch. The teeth on the feet U likewise engage the cloth, and thus on the backward movement of the needle the loop-holder will not be shifted laterally so as to loosen the hold on the last loop. The teeth on foot U also serve to bite against the yarn or thread and prevent the loop previously made from being partially drawn out when the loop-holder is inserted to catch the loop or stitch formed by the needle.

In Figs. 6 and 7 are shown different styles of needles and loop-holders, which may be used in connection with my machine for different varieties of work.

The double needle is employed when it is desired to mix two varieties of fine silk thread together in a design. All of the needles and loop-holders have the angular bend *n* to allow their feet to be fitted in the clamping device and cause the loop-holder and needle to project over in a common line. The foot-piece of each needle should be shaped to readily fit the clamping device employed, so that no time be wasted in adjusting new needles.

I do not wish to be limited to the particular construction of the clamping device herein shown, nor to the particular method of fitting the feet U U' to the heads I N, nor to the precise method of throwing the head I laterally, as such may be changed at will without departing from the spirit of my invention.

Having described my invention, I claim—

1. The sliding parts or members carrying the needle and loop-holder, in combination with clamping or attaching devices for the needle and loop-holder at the outer or front ends thereof, said clamping devices being capable of lateral adjustment independent of each other, so that the needle may be caused to align with the loop-holder, as set forth.
2. The sliding parts or members carrying the needle and loop-holder and having hollow heads at their outer or front ends, in combination with clamping devices fitted in the heads to receive the feet of the needle and loop-holder, and devices for adjusting the clamping devices laterally in the heads, as set forth.
3. The sliding parts or members A A' and clamping or attaching devices carried by the said members, in combination with the needle and the loop-holder provided with a slotted foot, the slot of which is open at one end

to allow the insertion of such foot without withdrawing the clamping means, as set forth.

4. The sliding parts or members, which are provided with needle and loop-holder clamping devices, in combination with the needle and the loop-holder provided with an angular bend, *n*, at an intermediate point, as and for the purpose set forth.

5. The sliding parts or members provided with needle and loop-holder clamping devices, in combination with the needle and the loop-holder having an angular bend, *n*, at the junction of the shank with the foot, and a slot provided in the foot, which slot has one open end, for the purpose set forth.

6. The sliding parts or members provided at their front ends with hollow heads, in combination with clamping-blocks fitted within the heads, and the needle and the loop-holder provided with a bend, *n*, to fit over the front end of the head and having their feet fitting between the clamping-blocks, as set forth.

7. The sliding parts or members carrying the needle and loop-holder and provided with hollow heads, in combination with clamping-blocks *l l'* and screw M, working against the blocks, whereby the foot of the needle or of the loop-holder may be clamped between the blocks, as set forth.

8. The sliding parts or members provided with hollow heads at their front ends, in combination with clamping-blocks fitted in the heads, pins to hold the blocks together, and screws M, to clamp the blocks, the needle and loop-holder having their feet each provided with an open-ended slot to permit the detachment of the same without entirely separating the clamping-blocks, as set forth.

9. The sliding parts or members provided with hollow heads at their front ends, in combination with clamping-blocks fitted in the heads, the needle and the loop-holder, screws M, for clamping or holding the blocks together, and screws *m*, for adjusting the blocks laterally in the heads, as set forth.

10. The sliding parts or members, which are provided with separable clamping devices, in combination with the needle and loop-holder, which are adapted to be held in place by the said clamping devices, the separable construction of the latter allowing the ready insertion and withdrawal of the needle and loop-holder, as set forth.

11. The sliding parts or members, in combination with the adjustable feet carried by the sliding members or parts and stitch-forming mechanism, one of the feet having index-marks by which the proper adjustment can be ascertained, the other foot being adjusted to accord with the first, as set forth.

12. The sliding members or parts, one of which members is provided with guide-rods and the loop-holder, in combination with the needle-head working laterally on the rods and means for operating the needle-head, as set forth.

13. The sliding parts or members, one carrying the loop-holder head and the other the needle-head, provided, respectively, with the loop-holder and needle, in combination with means for bodily moving one of the said heads laterally on a straight line, as set forth.

14. In a fabric-turfing implement, the laterally-movable needle head, in combination with means for bodily moving the same and the loop-holder, as set forth.

15. The needle-head provided with the needle, in combination with means for bodily moving the same laterally throughout its entire length, and the loop-holder, as set forth.

16. The sliding parts or members, one of which is provided with guide-rods, in combination with the needle-head movable laterally on the guide-rods, the loop-holder, the bell-crank lever connected to the needle-head, and devices for acting upon the bell-crank lever, as set forth.

17. The sliding parts or members A A', in combination with the rod D, the stitch-forming mechanism, tube E, fitted on the rod, the spring or cushion located within the tube and bearing against the rod, and a screw passing through the sliding parts or members and working into the tube, as set forth.

18. The sliding parts or members A A', in combination with stitch-forming mechanism, the rod D, and the tubes E, carrying the spring or cushion and connecting the rod with the member A, the spring or cushion acting against the rod, as set forth.

19. The sliding parts or members, in combination with stitch-forming mechanism, a rod, D, stops adjustable on said rod, and coupling devices connecting the parts to the rod, said coupling devices abutting against the stops, as set forth.

20. The sliding parts or members, in combination with the stitch-forming mechanism, the rod D, stops adjustable on said rod, and projections on the parts or members working on the rod to abut against the said stops, as set forth.

21. The laterally-movable needle-head and the loop-holder, in combination with the sliding parts or members carrying adjustable stops h, to limit the lateral throw of the needle-head, as set forth.

22. The laterally-movable needle-head and the loop-holder, in combination with the sliding parts or members carrying a double set of adjustable stops, one set limiting the longitudinal movement of the parts or members and the other set the lateral throw of the needle-head, and means for moving the head laterally, as set forth.

23. The laterally-movable needle head, in combination with the sliding parts or members, the stitch-forming mechanism, means for operating the said head, and stops to actuate the means, said stops being adjustable to lessen or increase the lateral throw of the head, as set forth.

24. The sliding parts or members, in combination with stitch-forming mechanism, adjustable feet carried by the same, the adjustable stops to limit the longitudinal movement of the parts or members, the laterally-movable needle-head, and the adjustable means for actuating the same, as set forth.

25. The sliding parts or members, in combination with adjustable feet carried by the same, stitch-forming mechanism, and adjustable stops to limit the longitudinal throw of the parts or members, as set forth.

26. The sliding parts or members, in combination with adjustable feet carried by the same and stitch-forming mechanism, said feet being made substantially in the shape of a letter U, as set forth.

27. The sliding parts or members, in combination with adjustable feet carried by the same, stitch-forming mechanism, and adjustable stops to limit the longitudinal throw of the parts or members, the laterally-movable needle-head, means for actuating the same, and another set of adjustable stops to limit the lateral movement of the said head, as set forth.

28. The sliding parts or members, in combination with the laterally-movable needle-head, the loop-holder, means for actuating the same, a set of adjustable stops which abut against the means for actuating the head, and another set of adjustable stops to limit the longitudinal throw of the parts or members, the distance between the two sets of stops determining the lateral throw of the head, as set forth.

29. The sliding parts or members, in combination with the laterally-movable needle-head, the loop-holder, the bell-crank lever connecting with the head, adjustable stops against which the lever abuts, and adjustable means for limiting the throw of the sliding parts or members after the contact of the lever with the stops has taken place, as set forth.

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

RICHARD L. SIMONS.

Witnesses:

EDWARD G. SIGGERS,
WM. NELSON MOORE.