



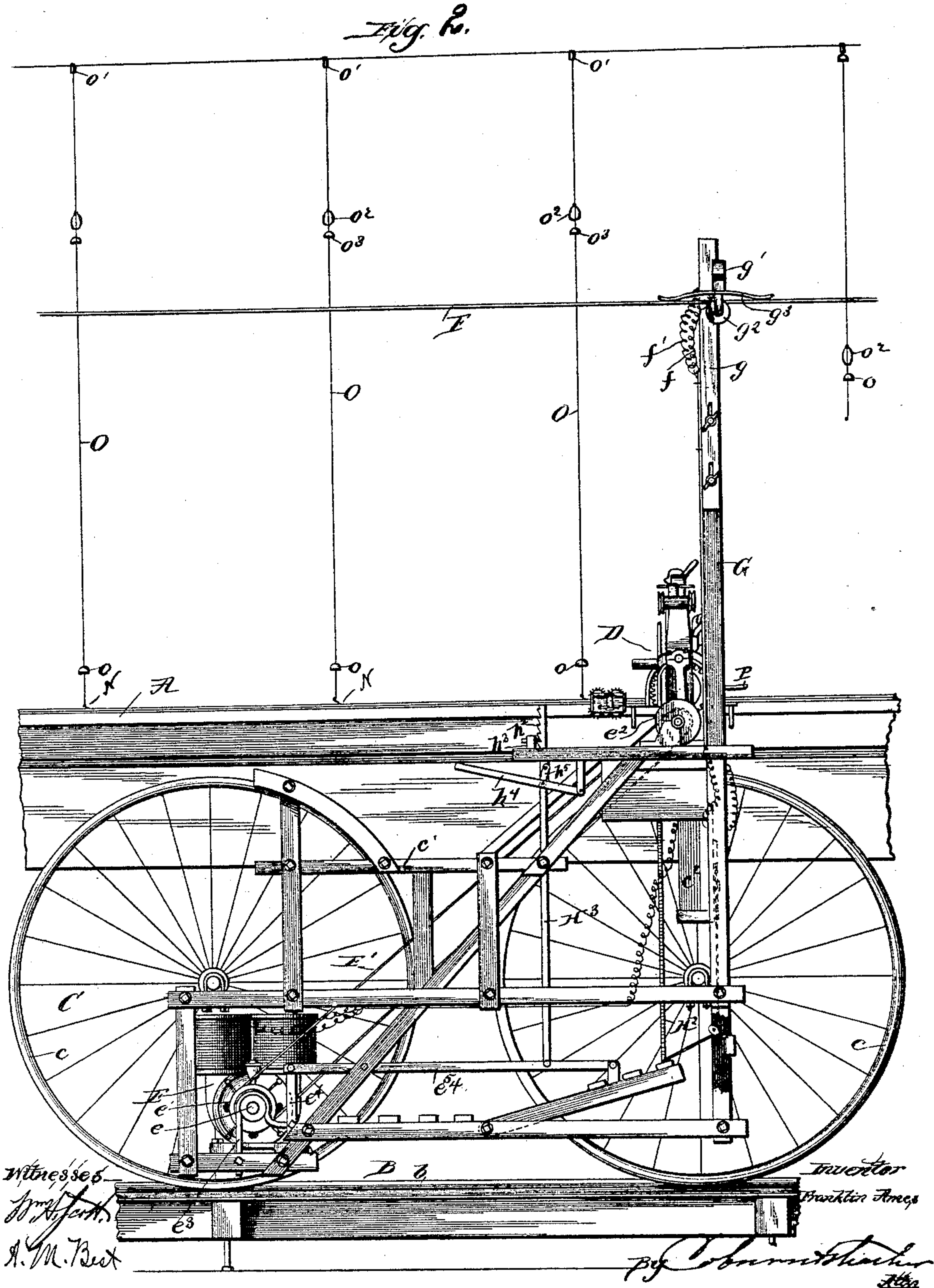
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7 Sheets—Sheet 2.

F. AMES.  
APPARATUS FOR SEWING CARPETS.

No. 454,404.

Patented June 16, 1891.





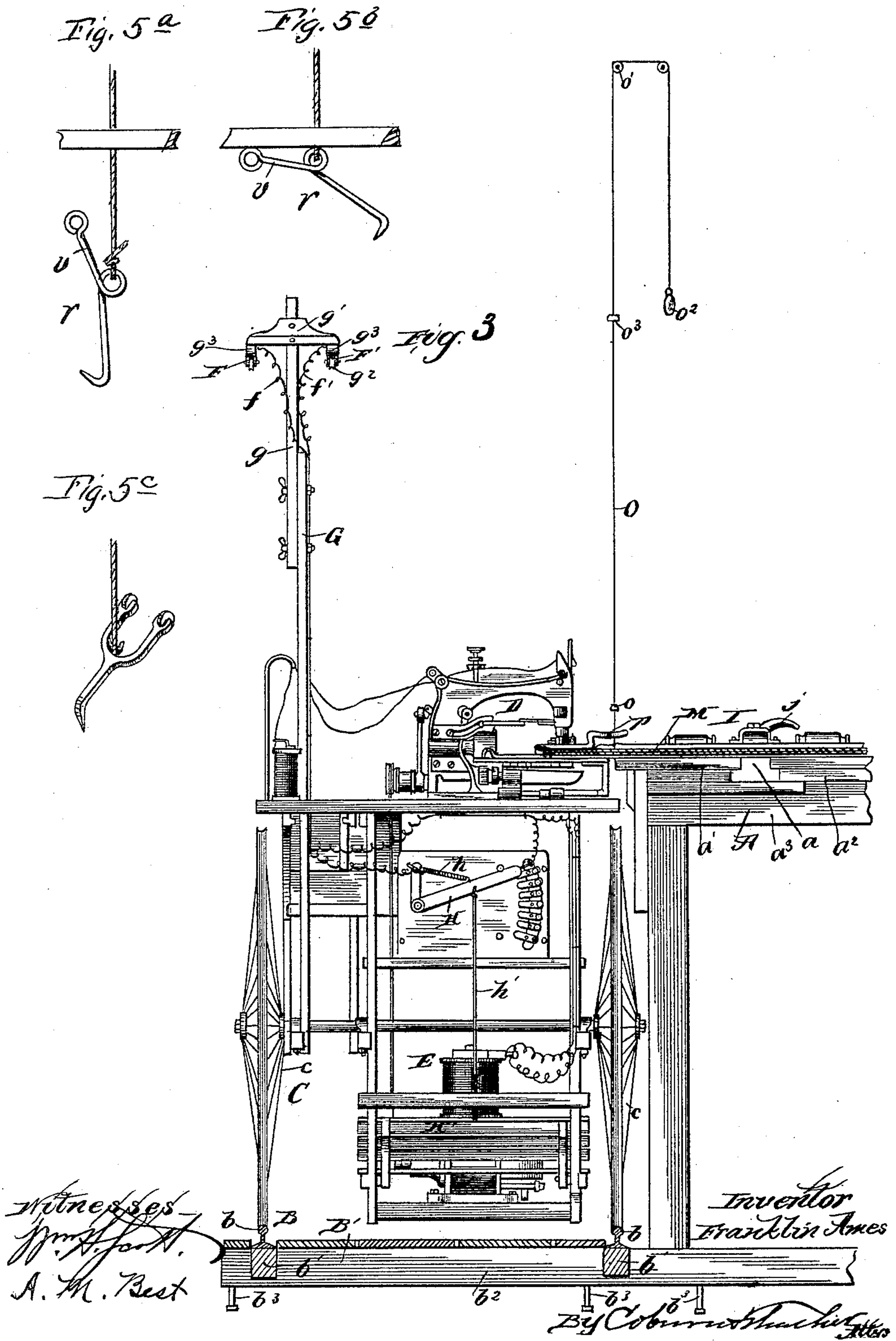
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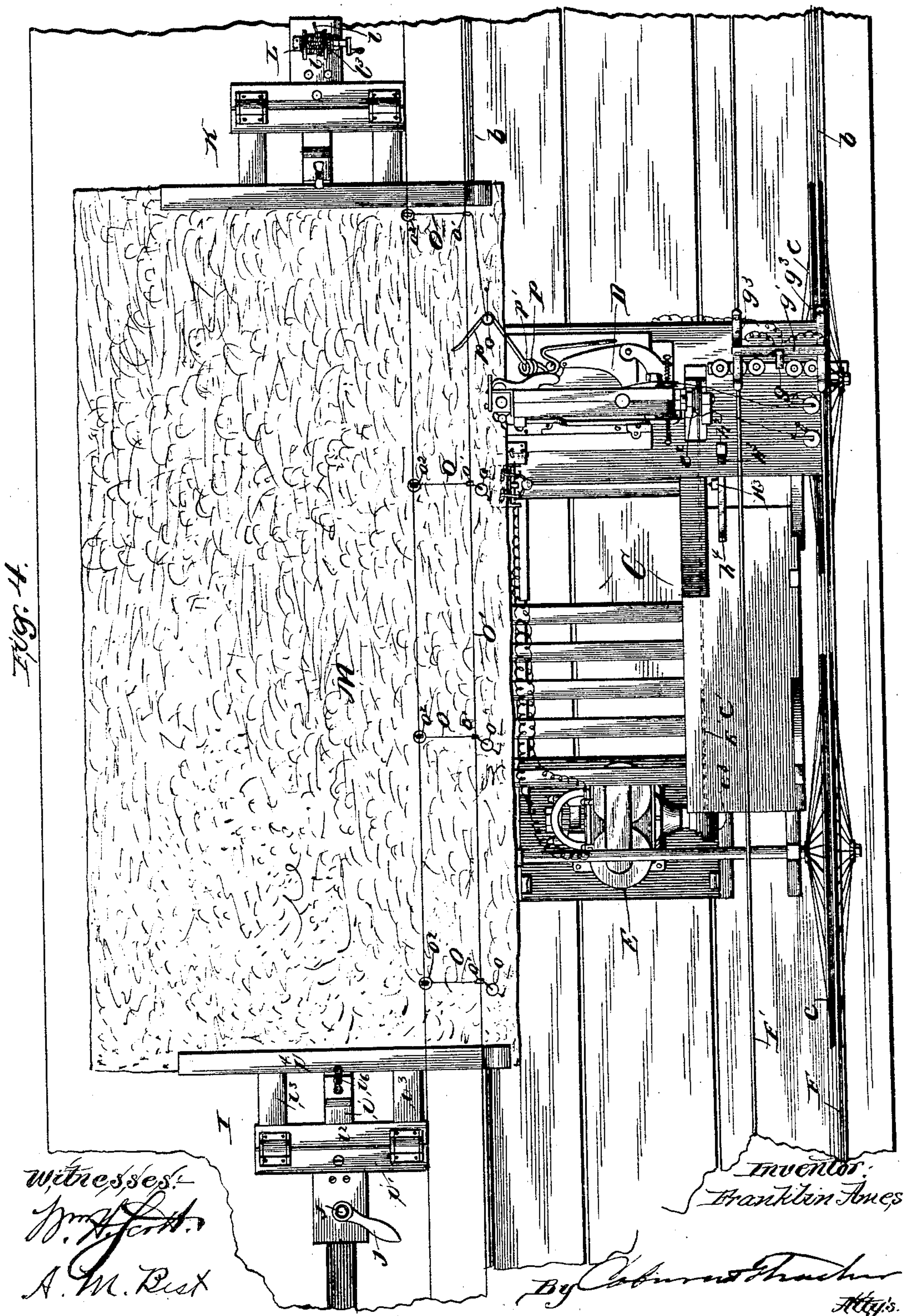
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7 Sheets—Sheet 4.

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Patented June 16, 1891.





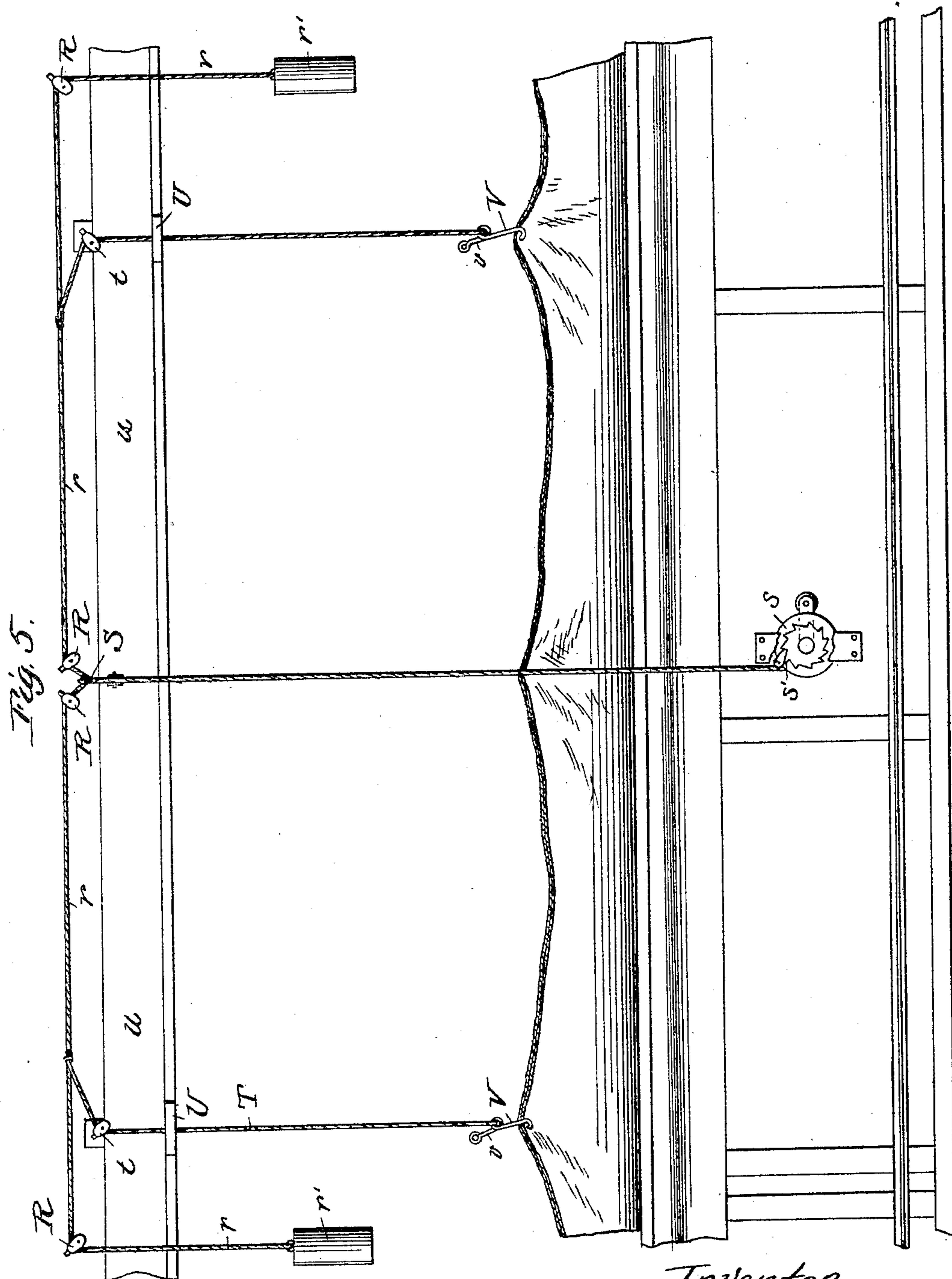
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7 Sheets—Sheet 5.

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No. 454,404.

Patented June 16, 1891.



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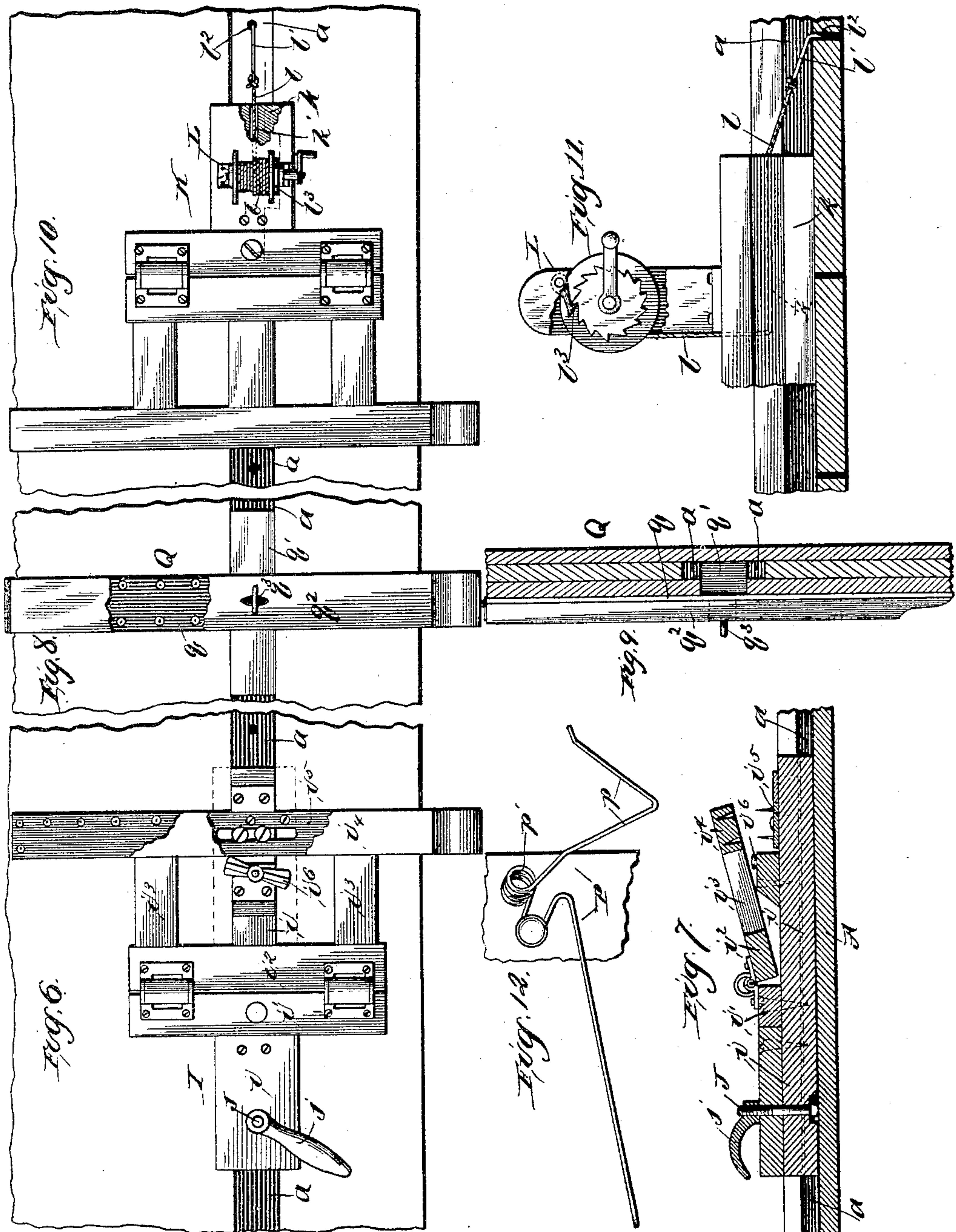
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7 Sheets—Sheet 6.

F. AMES.  
APPARATUS FOR SEWING CARPETS.

No. 454,404.

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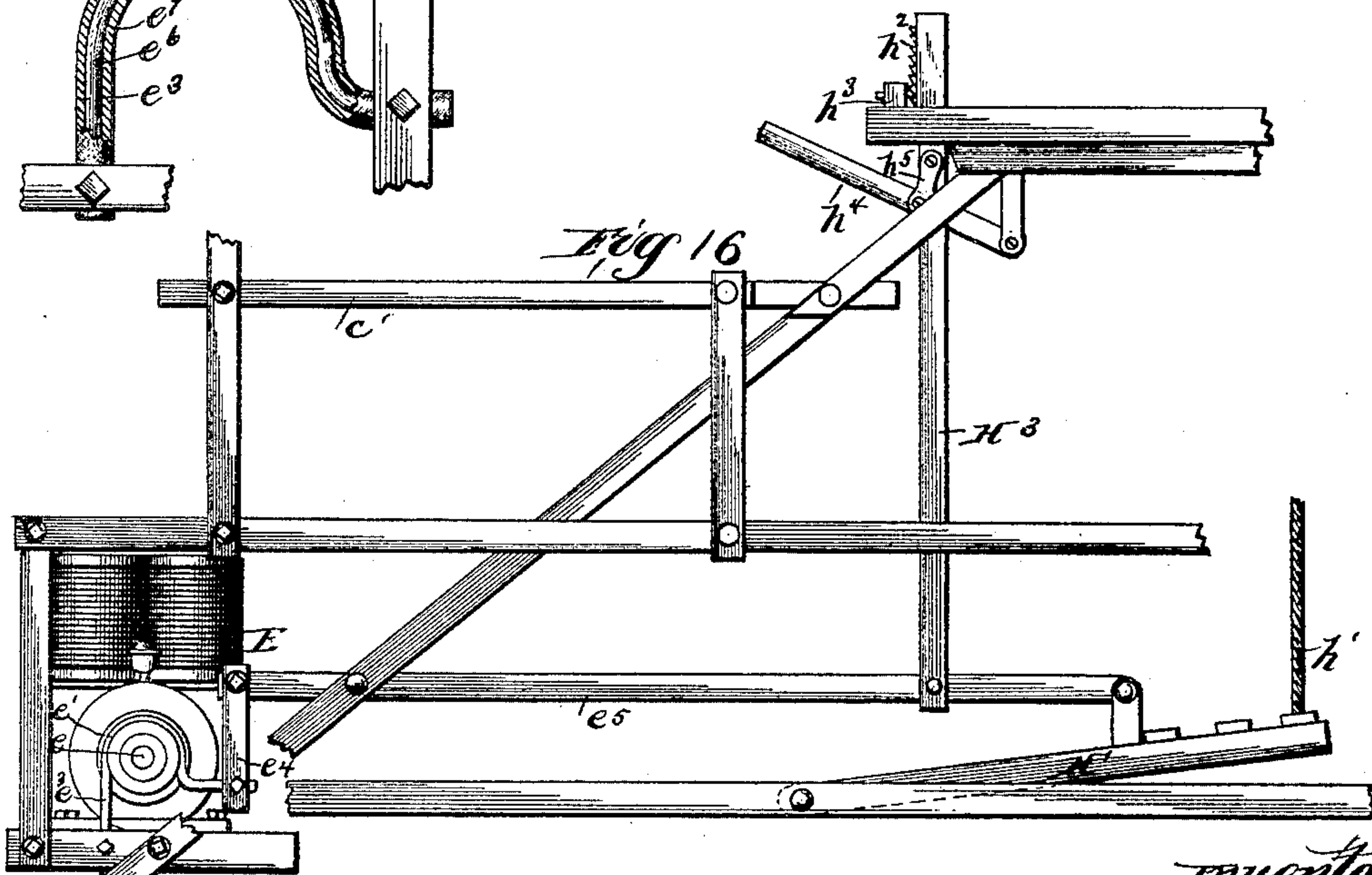
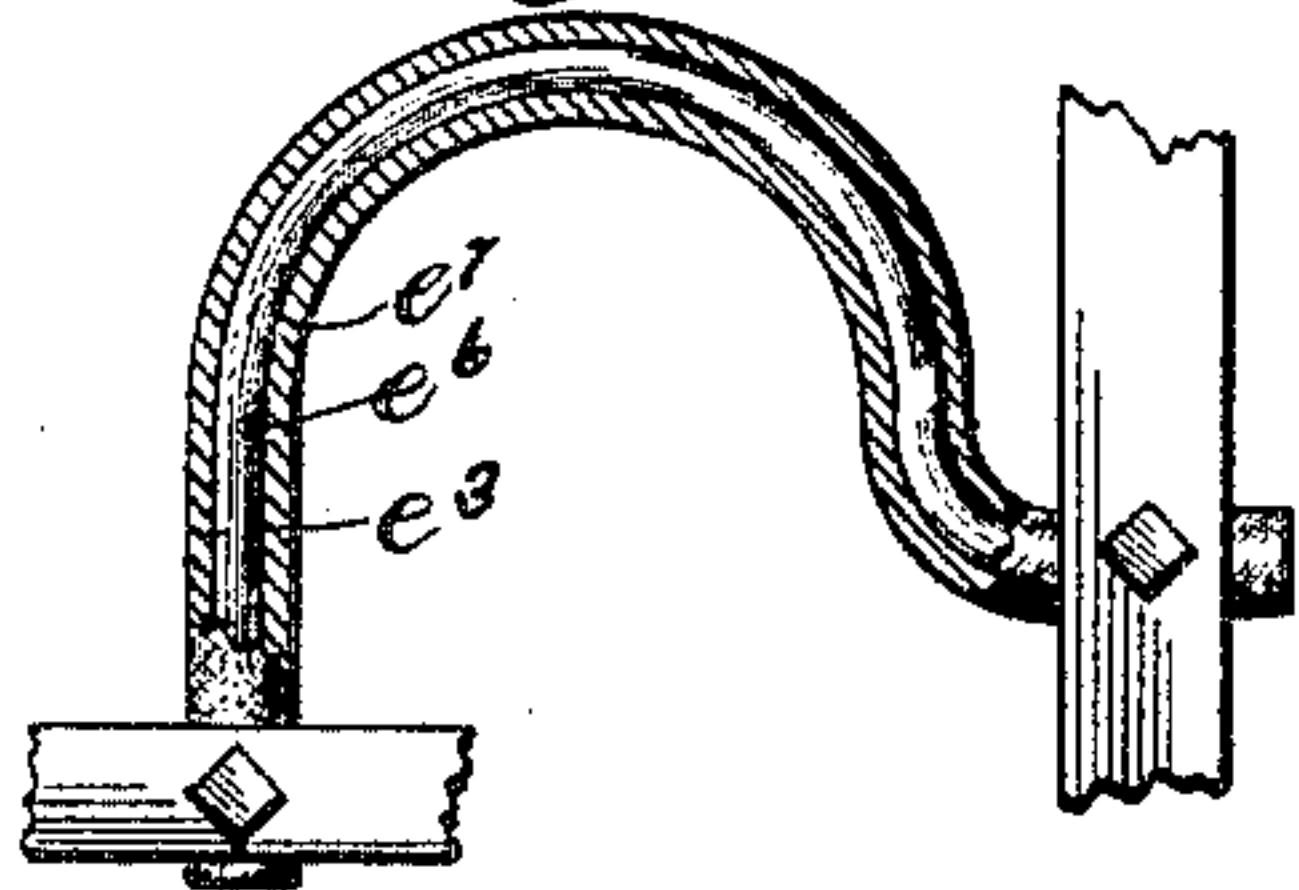
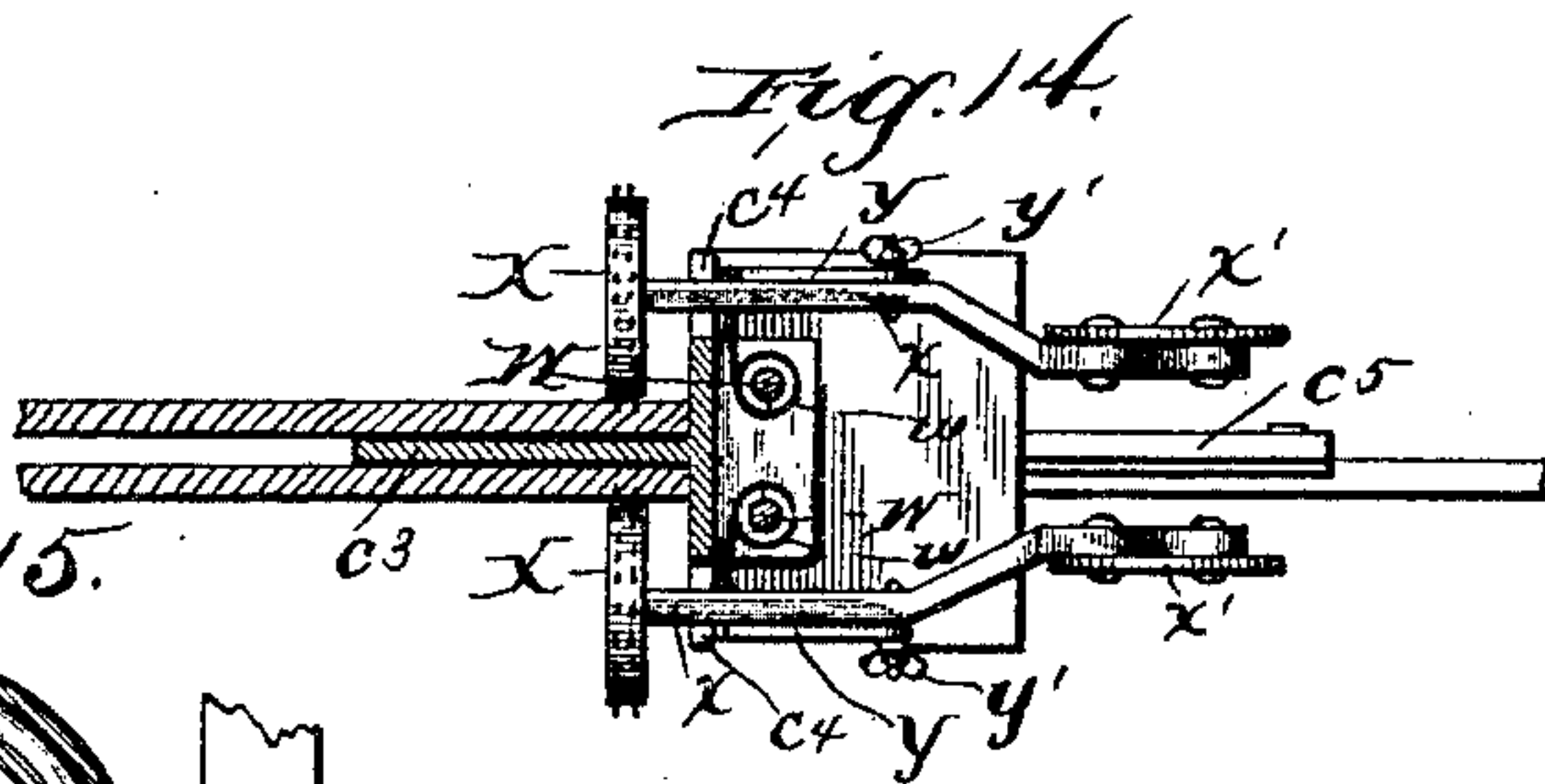
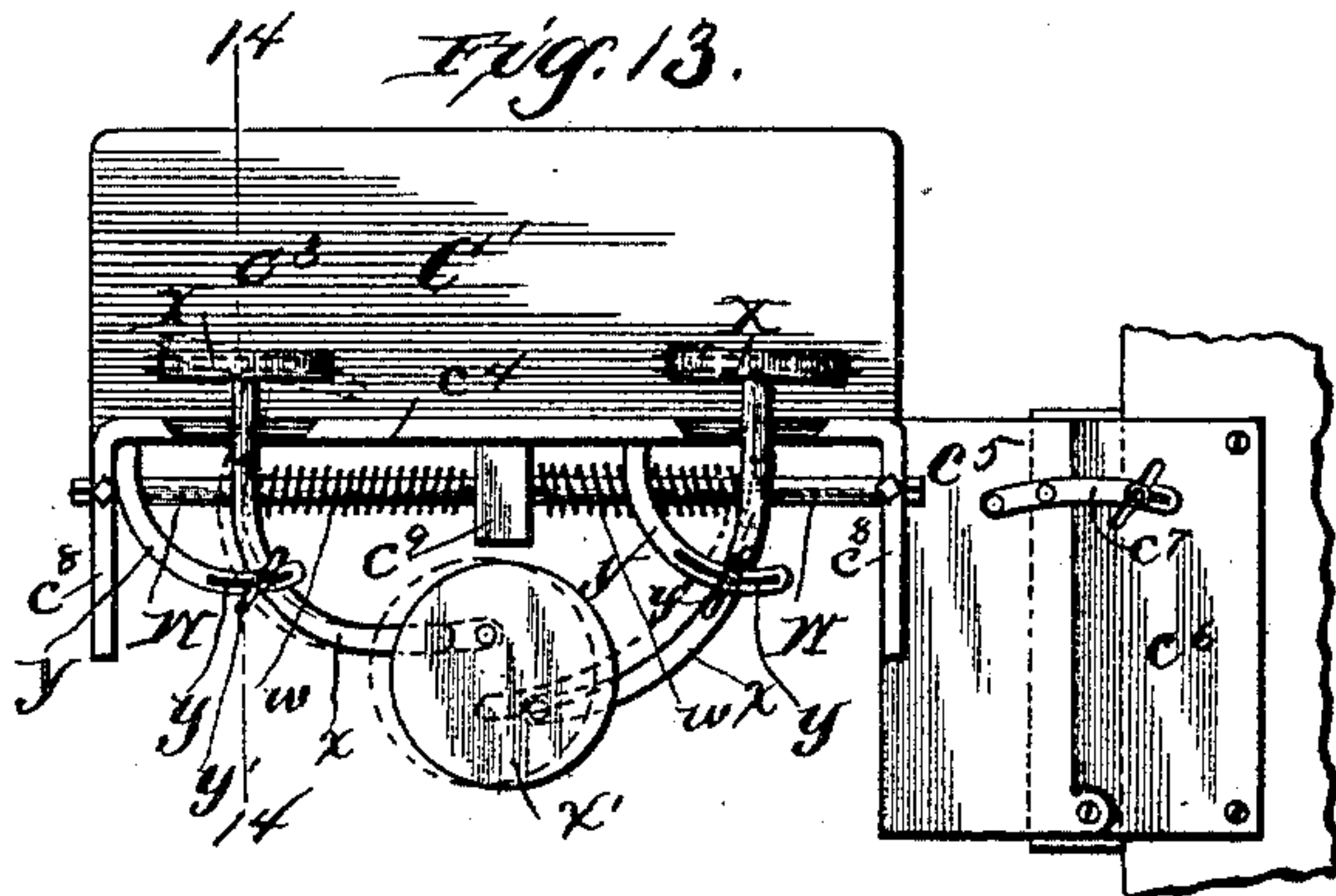
(No Model.)

7 Sheets—Sheet 7.

F. AMES.  
APPARATUS FOR SEWING CARPETS.

No. 454,404.

Patented June 16, 1891.



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# UNITED STATES PATENT OFFICE.

FRANKLIN AMES, OF CHICAGO, ILLINOIS.

## APPARATUS FOR SEWING CARPETS.

SPECIFICATION forming part of Letters Patent No. 454,404, dated June 16, 1891.

Application filed February 20, 1890. Serial No. 341,235. (No model.)

*To all whom it may concern:*

Be it known that I, FRANKLIN AMES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for Sewing Carpets, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

10 Figure 1 represents a front elevation of an apparatus embodying my invention, a portion being broken away at each end thereof; Fig. 2, a similar view of the same, but showing a smaller portion thereof; Fig. 3, a rear end elevation of the same; Fig. 4, a plan view of the same, the ends being broken away; Fig. 5, a front elevation showing only a part of the table and devices for turning the carpet, Figs. 5<sup>a</sup>, 5<sup>b</sup>, and 5<sup>c</sup> being detail views of the hooks; 20 Fig. 6, a detail plan of the rear end of the table, showing the clamping device by which the lengths of carpet are fastened to the table at this end; Fig. 7, a longitudinal section of the same, taken on Fig. 6; Fig. 8, a detail plan showing a clamping device for connecting carpet lengths together endwise; Fig. 9, a cross-section of the same, taken on Fig. 8; Fig. 10, a detail plan of a portion of the table near its front end and the clamp by which 30 the front ends of the length of carpet are here secured to the table; Fig. 11, a vertical section of the same, taken on Fig. 10; Fig. 12, a detail plan of the device for drawing out the pins which temporarily fasten the edges of the carpet together; Fig. 13, a detail plan of a device for setting the edges of the carpet in proper position for sewing; Fig. 14, a section of the same, taken on the line 14-14 of Fig. 13; Fig. 15, a detail elevation of the motor-brake; and Fig. 16, an elevation showing a part of the carriage, the motor-brake, and its connections.

In the drawings, Fig. 1 is upon a scale by itself. Figs. 2, 3, 4, 5, and 16 are all upon the 45 same scale enlarged from that of Fig. 1. Figs. 6, 7, 8, 9, 10, 11, and 12 are upon one scale, but still further enlarged, and Figs. 13, 14, and 15 upon a scale still more enlarged than the latter.

50 In making up carpets heretofore the breadths have been usually sewed together by hand. This mode of sewing carpets is

very unsatisfactory, for it requires considerable time and adds very materially to the expense of the carpet. I am aware that some 55 attempts have been made to do this work by machine, but I am not aware that it has ever been satisfactorily accomplished.

It is the object of my present invention to provide machinery which will readily and successfully do the entire work of making up 60 carpets, and I have found by actual and very considerable use for several months past of the apparatus which I have devised for this purpose that my invention is thoroughly practical and entirely successful in operation. 65

I will proceed to describe in detail an apparatus in which I have embodied my invention in one practical form, and will then point out definitely in claims the improvements 70 which I believe to be new and wish to protect by Letters Patent.

In the drawings, A represents a long table. It may be of any desired length, but should be at least as long as carpets of large size, 75 and it will be found convenient to make it of even greater length, so that two or more carpets of ordinary size may be sewed at the same time. This table may be set up in the room in any suitable way, but should be firm 80 and level. At one side of the table, which may be called the "front," there is laid a track B, consisting of two small light rails b, which extend along the entire length of the table, and which also must be level, the 85 same as the table. This arrangement of the table and track so that both will be level is important, as will be seen in the description farther on. The track should also be in a fixed position, so that its relation to the table 90 will be unchanged. The track and the table may be entirely separate from each other, each being supported by independent structures; but as a matter of convenience for the purpose of maintaining these two parts in a 95 level and constant relative position I have shown them in the drawings mounted upon the same base-support, which is made adjustable for leveling purposes. To accomplish this base-frame B' is constructed, which is as 100 long as the table and of sufficient width to accommodate both the latter and the track. The table is mounted on supporting-posts set along one side of this frame, and at the other



side in front of the table stringers  $b'$  are run to receive the two rails, being set in the cross-bars  $b^2$  of the base-frame. The table and track are both set level on this frame.

5 It will be seen, then, that if this base is level the table and track will also be level and that they will be maintained in a fixed relation to each other. This base-frame is not mounted in a fixed position, but is set upon

10 the floor on adjusting-screws  $b^3$ , which are of a sufficient number to support the whole frame-work steadily and at the same time provide means for setting the base, so that it will be practically level, and may be kept

15 so by such adjustment as may be required. A carriage C is constructed to run upon this track. Preferably the carriage is provided with four wheels  $c$ , which are adapted to run upon the rails  $b$ , some or all of them having

20 grooved fellies adapted to fit the rails, so as to keep the carriage in place. Upon the carriage I mount a sewing-machine D and arrange it so that the needle will be on the inside of the carriage next to the table, but a

25 little way from the edge of the latter, so that when the lengths of carpet are stretched upon the table in position for sewing the double edges may be extended out over the front edge of the table and brought under

30 the needle in proper position for sewing. This sewing-machine may be of any known construction suitable to the heavy work of sewing carpets. I prefer, however, a machine which will make a well-known zigzag

35 elastic stitch, substantially like that shown in Letters Patent No. 167,492, of September 7, 1875, for the carpet will then present an even surface at the seams when laid. It is not necessary to describe the particular construction of the sewing-machine, for, as just

40 stated, it may be of any known construction, and the machine for making the particular stitch referred to is old and well known. The sewing-machine is preferably mounted on the

45 top of the carriage-frame and at its rear end, though this is a mere matter of choice for convenience; but the machine must of course be as high as the table. There is also mounted on the carriage an electric motor E, which, as

50 shown in the drawings, is arranged on the lower part of the carriage-frame and at the front end, though this, also, is a matter of choice and convenience. This motor may be of any known construction adapted for light work,

55 and a special description is not necessary, for there are several well known and in common use for various purposes. The shaft  $e$  of this motor is provided with a band-pulley  $e'$ , from which a band  $E'$  runs to a similar pulley  $e^2$  on the main shaft of the sewing-machine, so that the latter is driven by this motor. Current is supplied to the motor by any of the well-known means in use for this purpose. As shown in the drawings, there are

65 two wires F and F' strung along about over the outer track and the carriage and a sufficient distance above the latter to be entirely

out of the way. These wires are the two main wires of an electric circuit, and they are connected to the necessary devices on the

70 carriage by means of a post G, rising from the outside of the carriage-frame and carrying at its upper end an adjustable section  $g$ , on which is a cross-head  $g'$ , carrying on its ends small pulleys  $g^2$ , which are held up in contact with the circuit-wires by the cross-heads, as seen in Figs. 2 and 4 of the drawings.

75 Springs  $g^3$  are also arranged above and rest on the wires, which serve to maintain the circuit if by accident contact should be broken between the wires and the pulleys.

80 The pulleys and springs are both in circuit, it will be seen; but of course each set must be insulated from the one at the other end of the cross-bar. Connecting-wires  $f$  and  $f'$

85 lead, respectively, from the supports of the springs and pulleys down the post to the carriage, where they are properly connected up with the motor to give current to it, as required. At the rear of the machine is

90 a switch-lever H for opening and closing the circuit, to which a spring  $h$  is applied, which tends to hold the lever up in its highest position, as shown in Fig. 3 of the drawings, in which position the circuit is open.

95 A rod or cord  $h'$  extends from this lever down to a treadle or foot-lever H', which is pivoted at one end to the base of the carriage-frame, as seen in Fig. 2 of the drawings. When this lever is forced down, it will of course pull

100 down the switch-lever, thereby closing the circuit and setting the motor in operation. A rheostat is also arranged in the circuit and connected with the switch-lever, so that the degree of current to the motor may be regulated as required, the adjustment being such that, as shown in the drawings, the more the switch-lever is depressed the greater the force sent to the motor. In order to aid the spring

110  $h$  in lifting the lever and treadle connected to it, a supplementary spring H<sup>2</sup> may be connected directly to the treadle and arranged to operate to lift the latter, as seen in Fig. 2 of the drawings.

The carriage is provided with a seat  $c'$ , conveniently arranged toward its rear end, on which an attendant sits and manages the movements of the carriage by operating the treadle-lever and attends to the work of the sewing-machine and the proper arrangement

120 of the carpet. This seat is arranged for the attendant to sit facing to the rear, and when in this position there is just in front of him a box  $c^2$ , in which the rheostat is placed and upon the back of which the switch-lever is

125 arranged.

The table is constructed so that the clamps to which the ends of the carpet are attached may be applied thereto and held down to the table, but at the same time may be moved

130 back and forth thereon. This is accomplished by making a groove  $a$  running the entire length of the table and of irregular shape in cross-section. This groove or chan-



nel may be conveniently provided, as shown in the drawings, in which the top boards  $a'$  of the table are separated slightly at their inner edges and below them are middle boards  $a^2$ , the corresponding edges of which are separated a little more widely, and a bottom board  $a^3$  is arranged immediately below these middle boards and closes the bottom of the channel, as seen in Fig. 3 of the drawings. Clamps I and K are applied, respectively, to the rear and front ends of the table. The clamp I consists of a longitudinal strip  $i$ , having a tongue adapted to fit the groove in the table, so that it may be slipped into the latter at the end of the table and be moved back and forth therein lengthwise of the latter. A cross-bar  $i'$  is attached to this piece and has hinged to it a second cross-bar  $i^2$ , from which arms  $i^3$  extend forward and carry upon their outer ends the movable clamping-bar  $i^4$ , which has a series of small holes made in its under side. The hinges by which this bar is connected to the cross-bar  $i$  are preferably double-acting spring-hinges, which will tend both to throw up and to hold down the clamping-bar, as seen in Fig. 7 of the drawings. Immediately below the bar  $i^4$  is a strip  $i^5$ , attached to the sliding bar  $i$ , arranged transversely thereto and provided with a series of short teeth corresponding to the holes in the movable bar above. The ends of the carpet lengths are fixed to the clamp by catching them over the teeth on the lower bar and then bringing down the upper bar upon them, and the latter is fastened in place by means of a button  $i^6$ , mounted on a block rising from the sliding bar. This clamp is set at any point desired by means of a bolt J, having its head embedded in the under side of the slide  $i$ , passing up through the same, and having a thumb-nut  $j$  applied to its upper end. It is evident that when this nut is turned down upon the bolt the slide will be tightly clamped to the table, so that it will remain in the position in which it is fixed.

The clamp K is constructed in all respects like the clamp I, except the device described for fastening the clamp to the table at any desired point. Instead of the fastening-bolt, there is mounted on the sliding bar a small windlass L, to which is fastened and on which is wound a rope  $l$ . The slide  $k$  of this clamp is provided with a longitudinal passage  $k'$ , and the rope is carried down from the windlass into this passage and thence out at the front end of the clamp, where it is provided with a hook  $l'$ , which is adapted to enter any one of a series of holes  $l^2$  in the bottom board of the channel formed in the table. The windlass is provided with a ratchet and pawl  $l^3$ , so that it is fastened when required to hold the carpet taut.

Now, to prepare the carpet for sewing, two lengths are laid together, the right side of each being inward, and in this position the carpet M is fastened at its respective ends in the respective clamps I and K, as described,

being placed in these clamps so that the outer edges will be extended over the front edge of the table to the needle of the sewing-machine and in proper position with reference to the latter for the operation of sewing, as seen in Fig. 4 of the drawings. The clamp  $l$  is fastened to the table, as already described. The cord on the clamp K is hooked into a hole some little distance in front of said clamp, and the windlass is then turned, thereby drawing the clamp back and so straightening out the carpet and giving it the required tension. When the carpet is sufficiently taut, the pawl is let into the ratchet on the windlass, thereby holding the latter from turning backward, and so the clamp will be held in its position by the rope and the carpet will be held taut.

In order to secure the edges of the two lengths of carpet together to match the figure, as required for sewing, a number of large long pins N are provided, by means of which the two lengths are fastened together near their edges, as shown in Fig. 4 of the drawings. It is desirable to remove these pins automatically, and for this purpose the pins are preferably made with eyes, so that cords O may be fastened to them. These cords have attached to them a short distance from the pin small disks or buttons  $o$ , of wood or any other suitable material, and the cords run up over pulleys  $o'$ , suspended on a wire O', arranged above the carpet, and at the other ends of the cords are attached light weights  $o^2$ . These weights are just sufficient to pull up the pins when released from the carpet, and in order to prevent the latter from being drawn up to the pulleys a second series of buttons  $o^3$  is provided for the cords some distance above the first series, which act as stops when they reach the pulleys and prevent the cords from running farther over the latter.

In order to remove the pins automatically from the carpet, I provide a spring-hook P, which is fastened to the carriage just back of the sewing-machine. This hook extends inward over the edge of the carpet and beyond the line of the pins, so that its bent end  $p$  will be brought by the movement of the carriage into contact with the pin-cords just below the buttons  $o$ , as seen in Fig. 4 of the drawings. The forward movement of the hook with the carriage will then of course pull out the pins, and the latter will be immediately drawn up out of the way by the action of the weights attached to the cords, as seen in Fig. 2 of the drawings. The hook is provided with a coil  $p'$ , so as to be somewhat elastic.

The operation of the apparatus described above is as follows: Two lengths of carpet laid as described are placed upon the table and fastened at their respective ends to the clamps I and K. The clamp I is fastened to the table at the desired point, and the clamp K is moved on the table by means of the windlass until the lengths of carpet are perfectly taut and stretched as required. The windlass be-



ing secured against turning by means of the ratchet and pawl, the clamp K will be thereby held in the position to which it is adjusted, and the carpet will be retained in a fixed position on the table. Either before or after the fastening of the ends of the carpet in the clamps the two edges are secured together by the pins, as described, and the carpet is in readiness for sewing. The carriage is run back sufficiently far to bring the sewing-machine in front of the front end of the carpet. The attendant mounts the carriage and sets in operation the electric motor by the movement of the treadle-lever, as already described. The first slight movement of the carriage must be by a little pull or push of the attendant until the edge of the carpet enters the feed devices of the sewing-machine. I have found, however, that with the level arrangement of the table and track and the light friction attending the running of the carriage, constructed as described, upon the rails the ordinary feed of the sewing-machine is entirely sufficient to give the required progressive movement forward of the carriage, and that, too, with the attendant riding on the machine. The duties of the attendant are very simple and light, so that a small boy or girl of ordinary intelligence can attend to everything required. This, of course, lightens the weight on the carriage and makes it easier to run, and the carriage being progressed by the feed of the sewing-machine will of course always move exactly at the speed demanded for properly doing the work of sewing. The speed of the sewing-machine, and consequently of the carriage, is regulated by the amount of current supplied to the motor, which is adjusted by the switch and rheostat lever, as already explained.

The operation of the machine and movement of the carriage may be very rapid. I have had this apparatus in almost daily practical operation for several months past and have found it practicable to work the devices up to a speed of eight yards per minute. As the carriage moves along, it withdraws the pins which fasten the two lengths of carpet together, as already explained. It will be understood, of course, that the thread spools or balls are mounted on the carriage in any convenient place, and the threads are run to the sewing-machine in the usual way. When the carriage is run the length of the carpet, it will of course stop as the latter passes out from the feed of the sewing-machine, and at this point current should be shut off from the motor. The carriage is run back by hand to the front portion of the table and new lengths of carpet prepared, as described, for sewing, when the same operation is repeated.

It is desirable to provide means for stopping the operation of the sewing-machine instantly. This is accomplished by applying a brake to the shaft *e* of the motor. The brake which I use is shown enlarged in Fig. 15 of the drawings. It is a spring *e*<sup>3</sup> bent

somewhat in U shape and inverted, so as to be fitted upon and over the shaft *e*, as seen in Figs. 1 and 16 of the drawings, or, more correctly speaking, it is fitted over an enlargement or pulley on the shaft, which may be an extension of the hub of the pulley *e*'. One end of the brake is fastened rigidly to the frame of the carriage. The other end is bent outward about at right angles and is connected by a link *e*<sup>4</sup> to the end of a long lever *e*<sup>5</sup>, which is pivoted to the carriage-frame at a point quite near the motor-shaft, as seen in Figs. 1 and 16 of the drawings. This lever extends back to the treadle, with which it is connected by a pivot, so that the movement of the latter will vibrate the lever. The tension of the spring-brake is sufficient to set it upon its bearing on the shaft, so that when free to act it will operate as a brake to the latter, and this will occur, it will be seen, when the treadle is let up, which is the action that stops the current, so that the moment the supply of current to the motor is interrupted the brake acts to stop the motor-shaft, and thus stops the operation of the sewing mechanism; but when the treadle is depressed to start the motor again the corresponding vibration of the lever *e*<sup>5</sup> will draw upward the end of the spring-brake connected thereto, and thus take the brake off from the shaft. The particular construction of this spring-brake is not material, provided it is adapted to the purpose described. As shown in the drawings in Fig. 15, it is composed of an interior metal spring *e*<sup>6</sup> and a covering *e*<sup>7</sup> of some suitable fabric, and may be made in any convenient way.

I have mentioned above that an attendant may ride on the carriage. This is not absolutely necessary, however. The carriage will be run forward and the work of sewing satisfactorily done without an attendant sitting on the carriage. To accomplish this, however, it is evident that there must be some device for setting the apparatus in operation and fixing it at the degree of power and speed desired. For this purpose a standard or post *H*<sup>3</sup> is pivoted at its lower end to the long lever *e*<sup>5</sup> a short distance from the connection of the latter with the treadle. This post extends upward a little above the table of the carriage and is provided at its upper end with a series of notches *h*<sup>2</sup>, the perpendicular faces of which are uppermost, as seen in Fig. 16 of the drawings. A suitable stop or catch *h*<sup>3</sup>, mounted on the table, is arranged to engage with this notched section of the post, as shown in Fig. 16 of the drawings, so that when the said post is depressed it will be held in any position desired by the engagement of the stop with some one of the notches; but it will be seen that the depression of this post will necessarily depress the treadle, which, as already described, is the movement of the latter required to close the circuit and set the motor in operation. Now the teeth of the notches are arranged to correspond with the different



adjustments of the rheostat or switch lever, so that the setting down of the post one notch will produce a corresponding movement of the said lever to the first degree of adjustment, and so on with the remaining notches. It will be seen then that the apparatus will be started by depressing the said post  $H^3$ , and that it may be set at the speed desired by engaging the stop with the proper notch, when the carriage will proceed automatically along the track at the same rate of speed and the sewing of the carpet will be accomplished, as already explained. For convenience of adjustment a small hand-lever  $h^4$  is provided, which is pivoted at one end to a suitable support under the carriage-table and is connected by a link  $h^5$  or any other suitable device to the post, as seen in Fig. 16 of the drawings. It is obvious that the post is readily adjusted by means of this lever, thereby easily starting and stopping the apparatus or adjusting its speed as desired, so that the carriage will run and the work of sewing be done without an attendant riding on the machine.

If the room in which the apparatus is set up is of sufficient size, the table may be made long enough to accommodate two or more carpets to be sewed at the same time, or in case the carpets are short this may be done, and it is desirable whenever possible, as the longer the one continuous movement of the carriage and sewing-machine the more economical is the work. When this can be done, it is desirable to connect the adjoining ends of the lengths of two carpets instead of having two sets of independent clamps, like those already described. In order to do this, I provide a connecting-clamp  $Q$ , which consists of a transverse bar or plate  $q$ , provided with two rows of projections running lengthwise of the bar and on opposite edges, as seen in Figs. 8 and 9 of the drawings. This bar is attached to a plain straight-edged block  $q'$ , which is adapted to be set into the channel in the table from the surface or upper side of the latter. An upper bar  $q^2$  is hinged at one end to the lower bar  $q$  and is provided with holes adapted to receive the projections in the lower bar. The upper bar is also provided with an oblong slot about its center, so that when it is closed down the oblong head of a fastening-key  $q^3$ , which is on the block below, may pass up through and then be turned around across the bar, as seen in Fig. 8 of the drawings, whereby the two parts are locked together. In sewing two or more carpets at the same time this connecting-clamp is set on the table between the two clamps  $I$  and  $K$ , its block entering the channel in the table. The two adjoining ends of the carpet lengths are then fastened, respectively, to the lower bar by catching them over the respective rows of points, and the upper bar is brought down into place and secured, as described. The forward end of one carpet and the rear end of the other are secured, respectively, to the clamps  $I$  and  $K$ , as already described. It is evident that with

this arrangement the two can be sewed by one trip of the carriage.

In making up carpets it is necessary to turn the carpet. I have devised means for this purpose also in connection with the apparatus already described, and have shown the same in Fig. 5 of the drawings. Over each end of the table I arrange a pulley  $R$ , over which a rope  $r$  is run, and weights  $r'$  are attached to its respective ends, depending from the pulleys. About the center of the rope it runs over two small pulleys  $r^2$ , arranged only a little distance apart. A cord  $S$  is attached to the rope  $r$  between these two last-named pulleys and extends thence outward over the track and then down to a windlass  $s$ , mounted in any suitable support outside of the track, so as to be entirely out of the way of the movement of the carriage back and forth. This cord  $S$  is run over pulleys arranged suitably to give it the direction required. The windlass is also provided with a ratchet and pawl  $s'$  to hold it from turning backward whenever desired. A series of cords  $T$  are fastened at one end to the rope  $r$  and run thence over pulleys  $t$  down to the table, in the course of their direction downward passing through guides  $U$  in a bar  $u$ , running lengthwise of the table and arranged a little below the supports for the pulleys  $t$ . Hooks  $V$  are attached to the free ends of the cords  $T$ , which are adapted to hook into the edges of the carpet, as seen in Fig. 5 of the drawings. The windlass is then turned so as to wind up the cord  $S$ , which will of course pull the rope  $r$  inward, thereby pulling up the cords  $T$  and raising the carpet. When raised sufficiently high to hang free, or nearly so, the other edge of the carpet is readily brought forward to the front of the table with the next breadth to be sewed, and then upon pulling up the hooks still farther a projecting tail  $v$ , extending beyond the point of attachment at each hook, will be brought against the bar  $u$ , and thereby turn the hook, so as to release the carpet, as seen in Fig. 5<sup>b</sup> of the drawings, when of course it drops upon the table, and is then easily straightened out by attendants. With this device heavy carpets may be easily handled and much more readily manipulated in arranging them for the sewing required in completely making up the carpet. The hooks  $V$  may be made either as shown in Figs. 5<sup>a</sup> or 5<sup>c</sup>, the latter being preferable. It is also necessary that the edges of the carpet lengths should be kept in proper adjustment or alignment with the needle of the sewing-machine. In Figs. 13 and 14 I have shown a device for this purpose. A gage-plate  $C'$  is attached to the table of the carriage a little in front of the sewing-machine. This gage consists of a horizontal plate  $c^3$  and a vertical plate  $c^4$  at one edge thereof and projecting both above and below the former, as seen in Fig. 14 of the drawings. The horizontal plate is placed between the two lengths of carpet and the gage is arranged in proper alignment with



the needle, so that when the edges of the carpeting are brought up against the vertical flanges above and below the horizontal plate, as seen in Fig. 14, they will be in the proper position for sewing. The gage is secured to the table of the carriage by means of an arm  $c^5$  at one end thereof and standing out at right angles back from the horizontal plate. This is hinged at its corner to a corresponding bracket-plate  $c^6$ , which is securely fastened to the carriage-table, as seen in Fig. 13, and the former may be adjusted upon the latter by means of a curved guide  $c^7$  and set-screw for fastening it in any position desired. This device provides for turning the gage out and in slightly, as may be required to secure the proper alignment. Two rods  $W$  are mounted at the back of the gage in wings  $c^8$  at the ends and a lug  $c^9$  at the middle thereof. These rods are arranged one above the other, and on each of them are two coiled springs  $w$ , one end of said springs being fastened to the central lug and the other free ends at the outer ends of the springs being turned upward and downward, respectively, as seen in Fig. 14 of the drawings. Small toothed wheels  $X$  are mounted loosely on the inner ends, respectively, of four shafts  $x$ , which are separately and independently mounted on the free ends of the springs by passing the latter through the shafts, thereby providing a pivotal mounting. The outer ends of these shafts are bent inward toward each other back of the gage and are joined in pairs to buttons  $x'$ , the upper pair being secured to one plate and the lower pair to another. Each shaft  $x$  is provided with a gage-stop  $Y$ , which is fastened at one end to the shaft and thence curves forward and inward, so that its free end will strike against the back of the gage, as seen in Fig. 13 of the drawings. The inner end of each stop is provided with a slot  $y$ , through which a clamping-screw  $y'$  is passed to fasten the stop to its shaft. This fastening device permits the adjustment of the stops, as desired. In the operation of the apparatus the horizontal plate of the gage sets in between the two lengths of carpeting, as seen in Fig. 14 of the drawings, and the design is to keep the edges of the carpeting out against the vertical portion of the gage. This is accomplished by means of the toothed wheels, one set of which will run upon the upper face of the upper length and the other set upon the under side of the under length, and the action of the springs on which the shafts of the wheels are mounted will tend to hold said wheels to their work. The stops on the respective shafts are adjusted so that the shafts may be turned slightly from a perpendicular to the upright portion of the gage when the stops strike the back thereof, thereby bringing the wheels into a position slightly diagonal to the line of motion, and the preferable adjustment is such as to give the forward wheels a little more inclination than the rear ones, as seen in dotted lines in Fig. 13

of the drawings. Now as the carriage moves forward these wheels will of course be revolved by reason of their contact with the carpet, and, owing to their diagonal position, will draw the latter inward toward the gage, thereby bringing the edges up snug to the upright plate, as seen in Fig. 14. At the same time these wheels, especially the rear pair, hold the two edges of the carpeting closely together just in front of the needle, so that they are in required position for the action of the latter. Whenever it is desired to disengage these toothed wheels from the carpeting for any reason whatever, it is effected simply by pressing the two buttons together, when the outer ends of the wheel-shafts will be brought toward each other, thereby moving the wheels away from the carpet.

With this apparatus I am enabled to do the sewing on carpets with great rapidity and with comparatively little expense, so that a large amount of this work can be done in a single day and the cost of making up carpets greatly lessened. It is seen, of course, that the carpet is stationary, while the sewing-machine travels; but the relation of the two is fixed and practically unchanging, and for the successful working of the apparatus, the supports of the two must be practically level.

I do not wish to be understood as limiting my invention to all the special devices and details of construction which have been described above and are shown in the drawings, for it must be obvious to any good mechanic that many changes may be made in these minor details without departing from the main characteristics of my invention.

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

1. In an apparatus for sewing carpets, a table on which the carpet is stretched, in combination with a track extending along one side of the table, a carriage mounted on said track, a sewing-machine mounted on the carriage, and a motor for operating the sewing-machine, also mounted on the carriage, substantially as and for the purposes specified.

2. In an apparatus for sewing carpets, a level table on which the carpet is laid and to which it is fastened, in combination with a level track extending along one side of the table, a wheeled carriage mounted on said track, a sewing-machine mounted on said carriage and arranged to operate upon the edges of the carpet projecting over the front of the table, and a motor also mounted on the carriage for driving the sewing-machine and under the control of an attendant riding on the carriage, whereby the sewing-machine is operated by said motor and the carriage moved forward by the feed devices of the said machine, substantially as and for the purposes specified.

3. In an apparatus for sewing carpets, a movable and vertically-adjustable base-frame  $B'$ , in combination with a table  $A$ , mounted



on said frame, a track B, also mounted on the same base-frame at one side of the table and in a plane substantially parallel to the surface of the latter, a carriage C, arranged to run on said track, a sewing-machine D, mounted on the carriage, and a motor for driving the machine, also mounted on the carriage, whereby the table and track may be adjusted together to a level position, substantially as and for the purposes specified.

4. The table A, on which the carpet is laid and secured, in combination with the track B, the carriage C, the sewing-machine D, mounted on the carriage, an electric motor E, also mounted on the carriage, a rheostat, the switch H, and the treadle-lever H', substantially as and for the purposes specified.

5. In an apparatus for sewing carpets, the table A, in combination with the clamps I and K, secured to the table and adjustable thereon, whereby the carpet is fastened to the latter, and the sewing-machine D, mounted on a carriage movable back and forth at one side of the table, substantially as and for the purposes specified.

6. The table A, on which the carpet is laid for sewing, provided with a channel *a*, running lengthwise thereof, the clamp I, applied to said channel in the table and adapted to be secured therein at any point desired, and the clamp K, also applied to the said channel in the table and movable therein, the windlass L, mounted on the clamp K, and the rope *l*, applied to the windlass and adapted to be secured at the other end to the table, whereby the carpet may be secured to and stretched upon the table in position for sewing, substantially as and for the purposes specified.

7. The table A, having a channel *a* running its entire length, in combination with the carpet-clamp I, provided with bottom bar *i*, fitting into said channel, the cross-bar *i'*, the hinged bar *i''*, clamping-bar *i'''*, and toothed strip *i''''*, attached to the bar *i*, substantially as and for the purposes specified.

8. The table A, on which the carpet is stretched for sewing, in combination with pins N, which fasten the edges of the carpet together, the cords O, attached to said pins and provided with buttons *o*, the sewing-machine carriage C, and the hook P on said carriage, arranged to engage with the cords O and remove the pins as the carriage progresses, substantially as and for the purposes specified.

9. The table A, on which the carpet is

stretched for sewing, in combination with the carriage C, the sewing-machine D, mounted on said carriage, the pins N, which fasten the edges of the carpet together, cords O, attached to said pins, running freely over pulleys, and weighted at their free ends, and the hook P, mounted on the carriage and arranged to engage with the cords O as the carriage moves forward, substantially as and for the purposes specified.

10. In an apparatus for sewing carpets, a table on which the carpet is stretched, in combination with a track extending along one side of the table, a carriage mounted on said track, a sewing-machine mounted on the carriage, a motor for operating the sewing-machine, also mounted on the carriage, and mechanism for starting the motor and fixing it at a certain rate of speed, substantially as and for the purposes specified.

11. The table A, on which the carpet is laid, in combination with the track B, the carriage C, the sewing-machine D, mounted on the carriage, an electric motor E, also mounted on the carriage, a rheostat, a switch H, a treadle-lever H', and a standard H<sup>3</sup>, connected to the treadle and provided with a stop, whereby the standard may be set at any point desired by the depression of the treadle, substantially as and for the purposes specified.

12. The track B, arranged at the side of the table, in combination with the carriage C, a sewing-machine D, mounted on the carriage, an electric motor E, also mounted on the carriage, the brake *e*<sup>3</sup>, the brake-lever *e*<sup>5</sup>, and the treadle, substantially as and for the purposes specified.

13. The table A, on which the carpet is laid and secured, in combination with the carriage C, a sewing-machine D, mounted on the carriage, the gage C', also mounted on the carriage, and the toothed adjusting-wheels X, substantially as and for the purposes specified.

14. The table A, on which the carpet is laid and secured, in combination with the carriage C, carrying the sewing-machine, the gage C' on the carriage, the toothed wheels X, mounted loosely on shaft *x*, the springs *w*, and the gage-stops Y, adjustably attached to the shafts *w*, substantially as and for the purposes specified.

FRANKLIN AMES.

Witnesses:

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