No. 793,074. PATENTED JUNE 27, 1905.

F. H. HODGKINS.

CARPET SEWING MACHINE.

APPLICATION FILED JUNE 10, 1904.

6 SHEETS—SHEET 1.

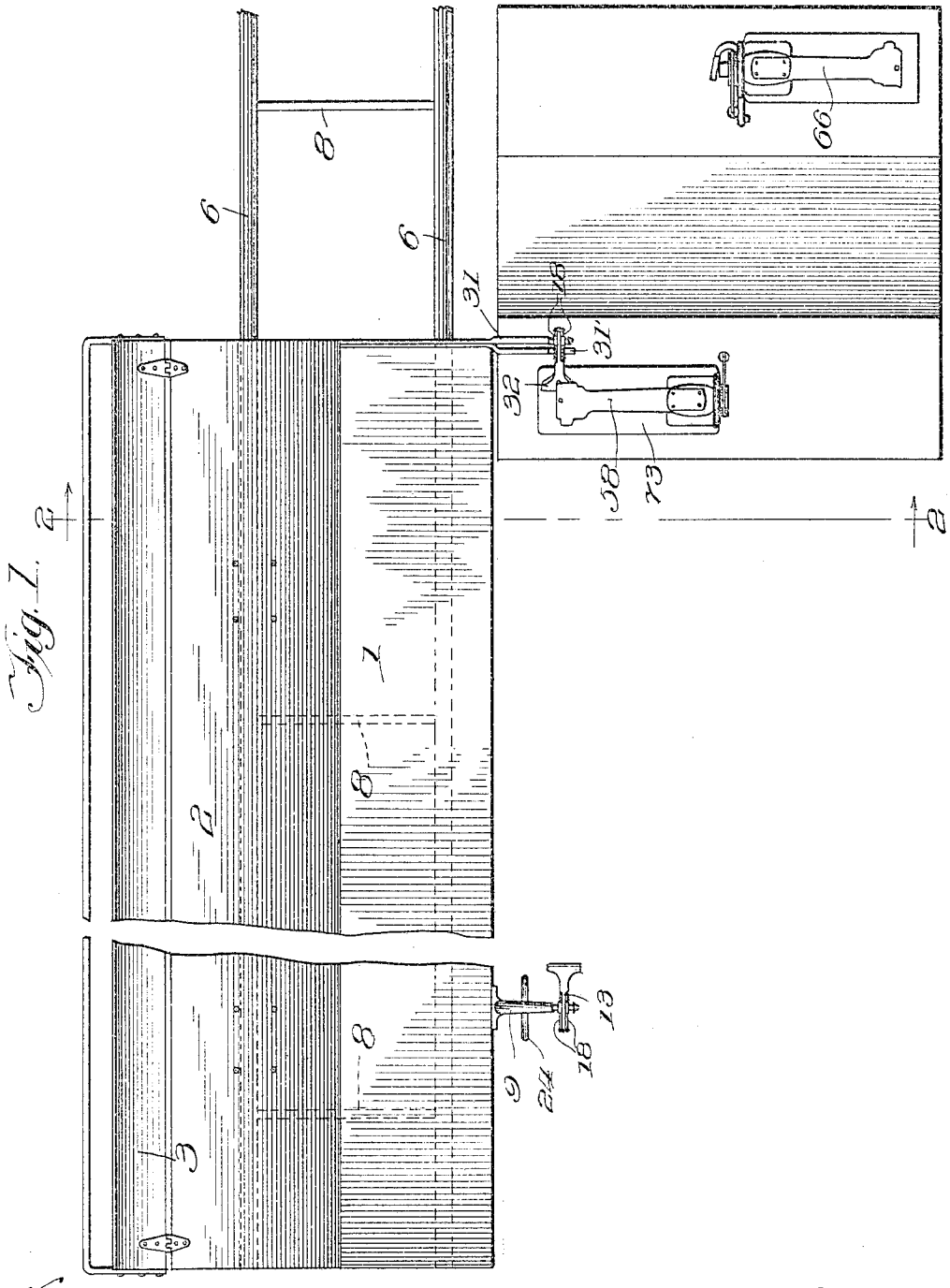


Fig. 1.

Witnesses:
H. S. Gaither
J. Bayard Kirkpatrick

Inventor:
Frederick H. Hodgkins
by Wm. G. Bell
Attorney

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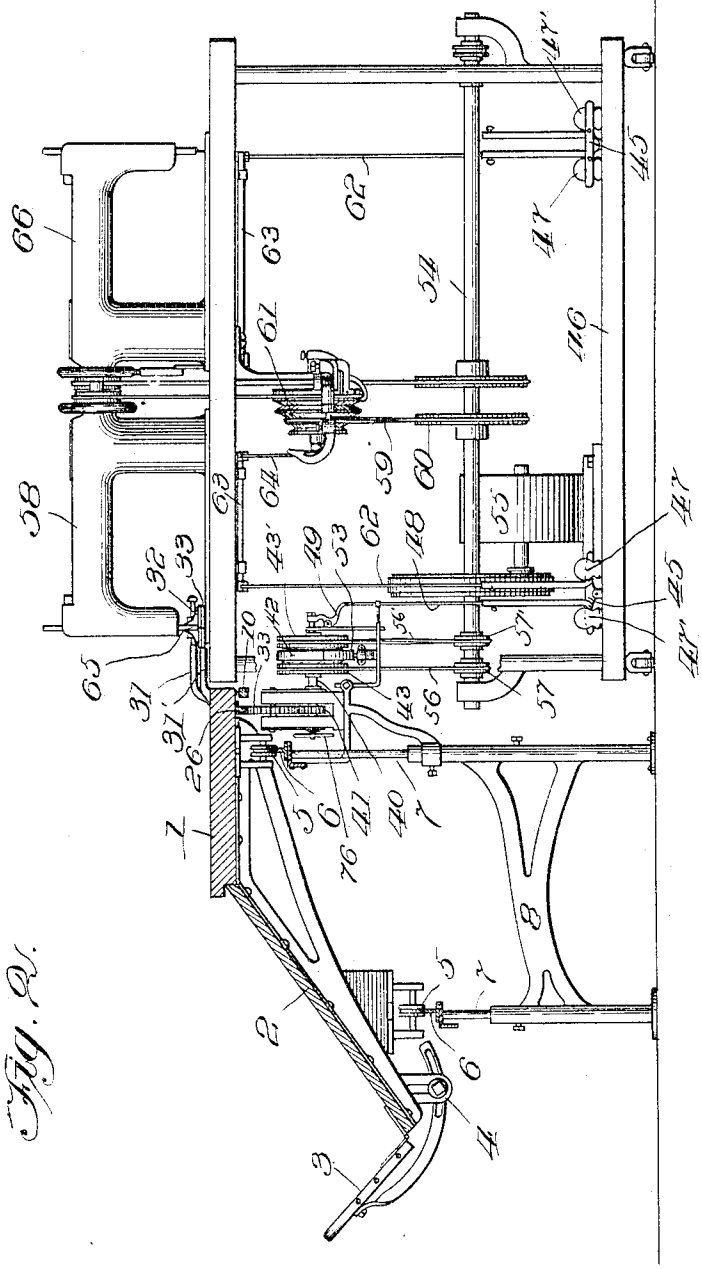


Fig. 2.

Witnesses:
H. S. Gaither
J. Sayad Kirkpatrick

Inventor:
Frederick H. Hodgkins
by Wm. C. Bell
Attorney

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Fig. 3.

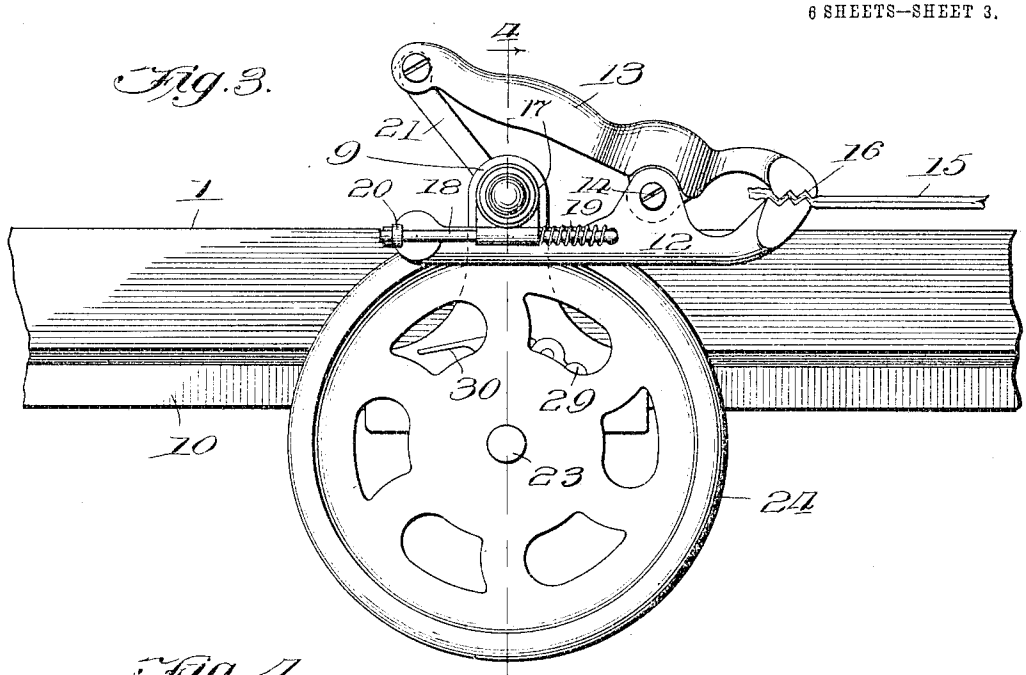


Fig. 4.

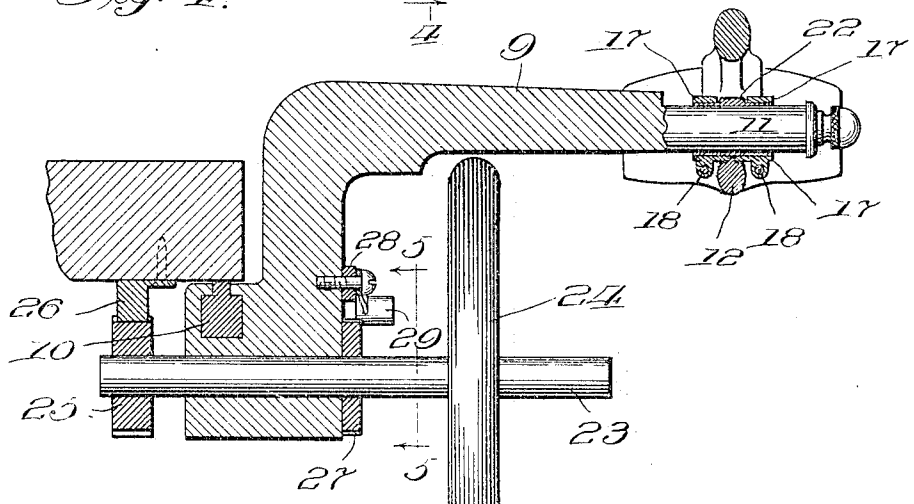
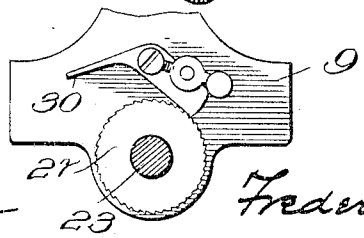


Fig. 5.



Witnesses:

H. S. Gaither

J. Bayard Kirkpatrick

Inventor:

Frederick H. Hodgkins

by Wm. O. Belt

attorney

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6 SHEETS—SHEET 4.

Fig. 7.

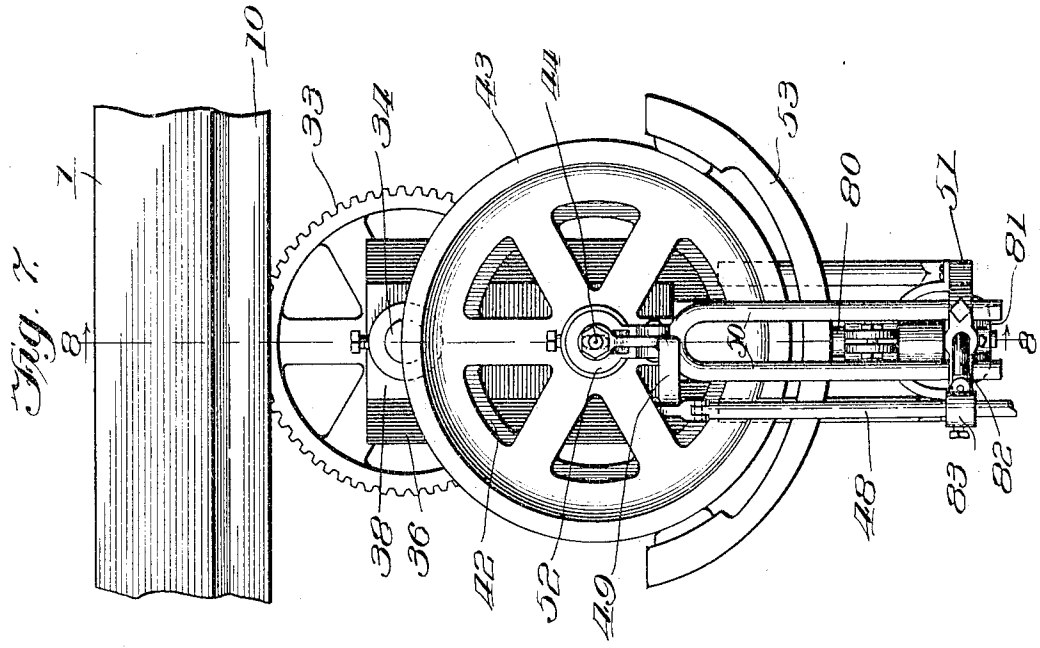
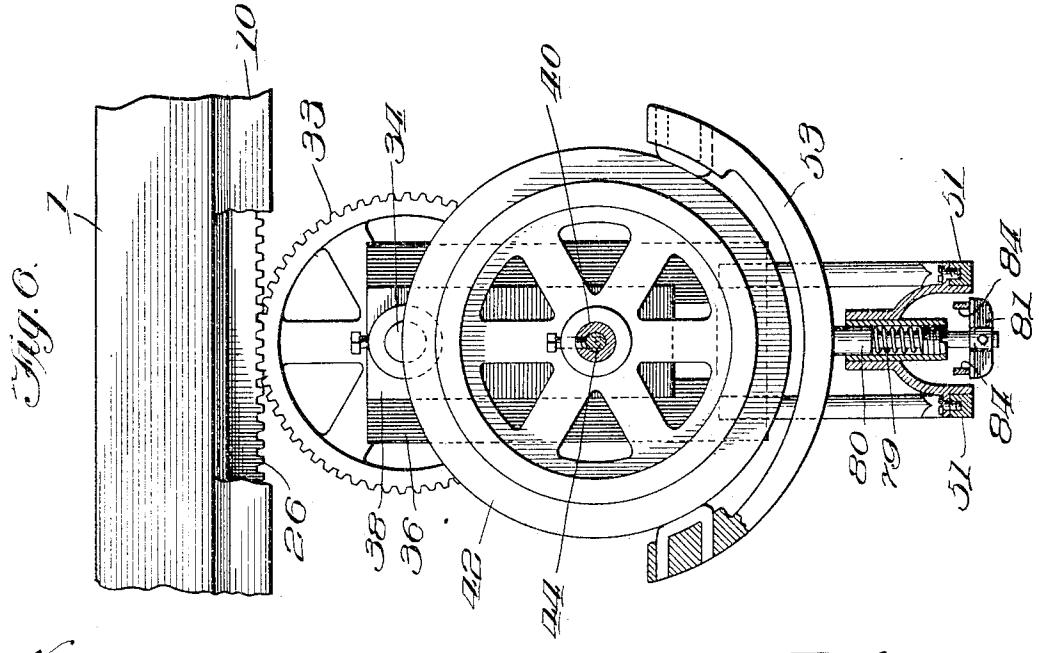


Fig. 6.



Witnesses:

H. S. Gaither

J. Bayard Kirkpatrick

Inventor:

Frederick H. Hodgkins

by Wm. G. Bell

Attorney

No. 793,074. PATENTED JUNE 27, 1905.

F. H. HODGKINS.

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APPLICATION FILED JUNE 10, 1904.

6 SHEETS—SHEET 5.

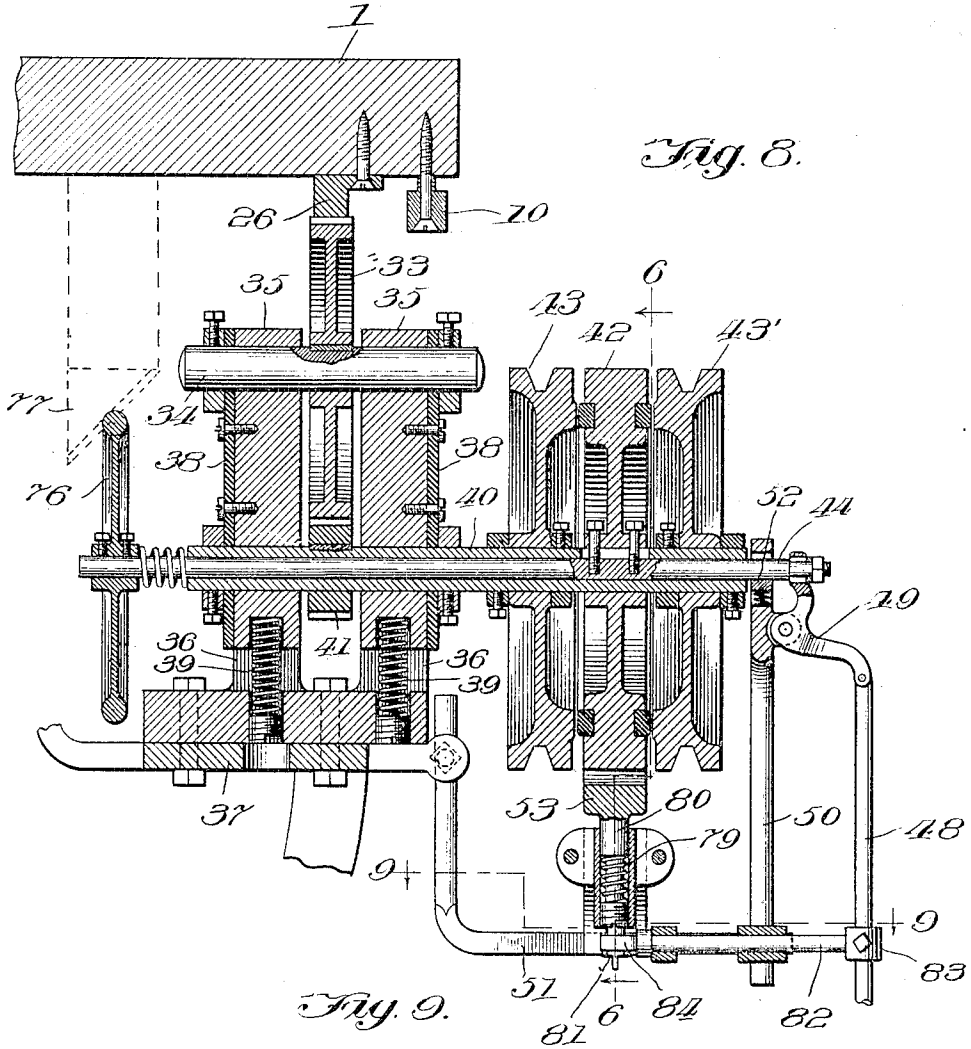
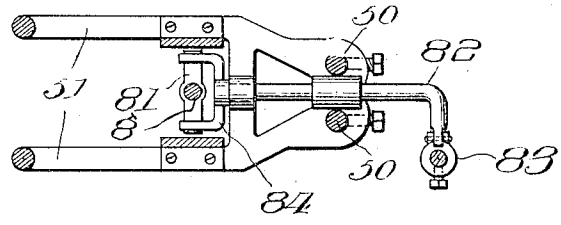


Fig. 8.

Fig. 9.



Witnesses:

W. L. Gaither

J. Bayard Clarkson

Inventor:

Frederick H. Hodgkins

by Wm. O. Belt

Attorney.

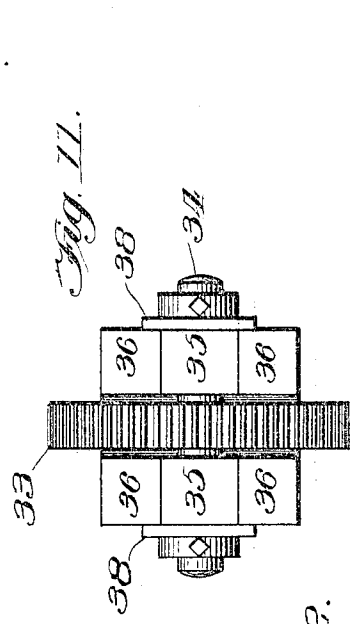
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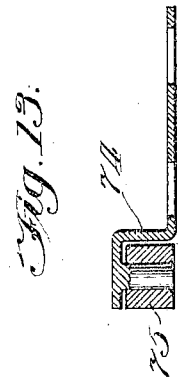
F. H. HODGKINS.

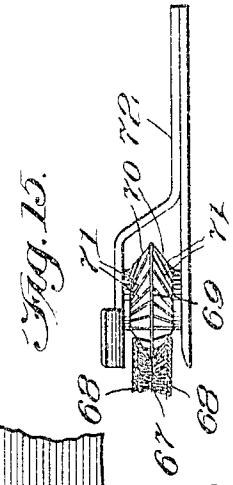
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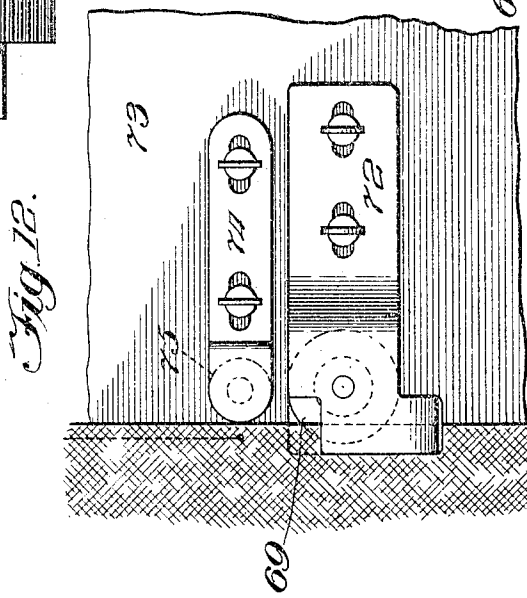
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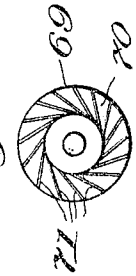
6 SHEETS—SHEET 6.

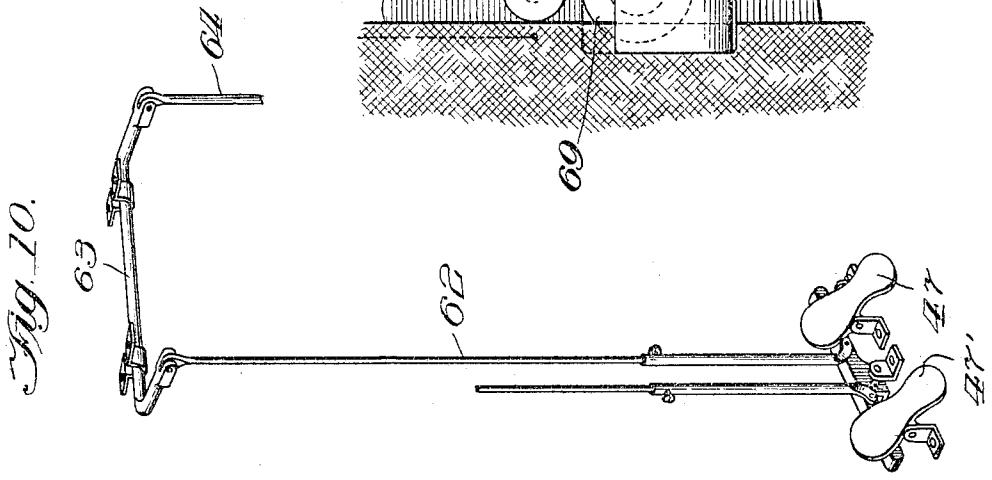












Witnesses:
H. S. Gaither
J. Hayward Kirkpatrick

Inventor:
Frederick H. Hodgkins
by Wm. P. Bell
Attorney

No. 793,074. Patented June 27, 1905.

UNITED STATES PATENT OFFICE.

FREDERICK H. HODGKINS, OF CHICAGO, ILLINOIS.

CARPET-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 793,074, dated June 27, 1905.

Application filed June 10, 1904. Serial No. 211,969.

To all whom it may concern:

Be it known that I, FREDERICK H. HODGKINS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Carpet-Sewing Machines, of which the following is a specification.

This invention relates to carpet-sewing machines; and its object is to provide an automatic machine for sewing together lengths or pieces of carpet which can be run by a single operator.

A further object of the invention is to stretch the carpet evenly and feed it to the needle at a speed uniform with the movement of the needle.

The invention also has for its objects to provide simple and improved carpet-stretching devices, to operate the means for feeding the carpet and the needle synchronously from the same power-shaft, to provide a convenient table for carrying the carpet, and to push back the pile away from the needle, so that the needle may sew together the edges of the ground or back of the carpet lengths and make a seam which will be very largely concealed by the pile when it springs back into place after leaving the needle.

The invention has other objects in view, which will be fully and clearly pointed out hereinafter in the following description.

To enable others to readily understand the invention, I have shown it embodied in one form in the accompanying drawings, in which—

Figure 1 is a plan view. Fig. 2 is a sectional view on the line 2 2 of Fig. 1. Fig. 3 is an enlarged view of the adjustable clamp. Fig. 4 is a sectional view on the line 4 4 of Fig. 3. Fig. 5 is a detail view of the locking-dog for the adjustable clamp. Figs. 6 and 7 illustrate the transmitting means, the former being a partly-sectional view on line 6 6 of Fig. 8. Fig. 8 is a sectional view on the line 8 8 of Fig. 7. Fig. 9 is a sectional view on the line 9 9 of Fig. 8. Fig. 10 illustrates the treadle and its connections to the transmitter for the needle-operating mechanism. Fig. 11 is a plan view of the table-feeding gear and its yielding support. Fig. 12 is a plan view of the pile-pusher and carpet-guide. Fig. 13 is a sectional view of the carpet-guide. Figs. 14 and 15 are detail views of the pile-pusher.

The carpet is supported on a table which comprises a flat top 1, an inclined side 2, and a hinged flap 3, Figs. 1, 2. The top of the table is designed to form a support for two lengths of carpet which are being sewed together, and the inclined side 2 is provided to support the carpet while other lengths are being sewed together. The hinged flap 3 holds the carpet in place on the inclined side, and it is adjusted by adjustable brackets 4 of suitable construction.

On the under side of the table are a suitable number of grooved rollers 5, which travel on tracks 6, supported on adjustable standards 7, carried by the end frames 8, and these tracks are of sufficient length to enable the table to feed long carpet lengths to the needle. The carpet lengths are stretched and held in place on the top of the table by suitable clamps, one of which is shown in detail in Figs. 3 to 5. The clamp is mounted on an arm 9, which is adjustably arranged on a rail 10, fastened to the table. This arm is turned down at its outer end 11 to receive the slidable clamping-jaw 12, and the jaw 13 is pivoted on the jaw 12 at 14. The ends of said jaws which are clamped upon the carpet 15 are serrated or toothed at 16. The jaw 12 is arranged to slide in a collar 17 on the arm, and rods 18 slide in openings in said collar and carry springs 19 in front of the collar and are connected at their rear ends 20 to the rear end of the sliding jaw 12. The pivoted jaw 13 is arranged at an inclination to the jaw 12, and its rear end is connected by link 21 to a sleeve 22 on the arm 9. A shaft 23 is journaled in the arm and carries a hand-wheel 24 and a pinion 25, which engages a rack 26 on the table. A ratchet-wheel 27 is fast on the shaft 23, and a dog 28 is pivoted on the arm 9 to engage said ratchet-wheel. A weighted pivoted arm 29 holds the dog 28 normally in engagement with the ratchet-wheel, and the dog can be released from this engagement by swinging the weighted arm back against the heel 30 of the dog, Fig. 5. The springs 19 operate to push the jaws for-

ward, and when it is desired to clamp the jaws on the carpet they are opened by pressing downward upon the elevated end of the jaw 13, which retracts the jaws against the tension of springs 19 and swings the jaw 13 on its pivot.

The clamping device which I have thus described is the one located at the rear end of the table, and I may employ a similar clamping device at the forward end of the table; but it is unnecessary to make the forward clamping device adjustable longitudinally of the table, and I therefore dispense with this adjusting means and fasten the arm 31, carrying the clamping-jaws 32 33, directly to the table. Both of the clamps are pivotally mounted on their arms, and I provide a supporting-arm 31′ on the table, which projects between the forward clamp to hold it up in horizontal position, so that it will always travel over the table. The collar 17 and sleeve 22 are of less length than the turned-down end 11 of the arm, so that the jaws can be adjusted toward or away from the table. The two lengths of carpet are first properly registered and clamped in the forward clamp, and then the other ends are registered and clamped in the rear adjustable clamp. The hand-wheel 24 is then operated to move the arm 9 rearward on the table to stretch the carpet evenly until the design on the two lengths is brought into proper registration. If it is found necessary, one length may be stretched in this manner considerably more than the other, as it is only essential to first register the ends of the lengths and clamp them and then move the adjustable clamp until the edges to be sewed are stretched taut. It will be observed that the link 21 operates as part of a toggle, and the farther back the arm 9 is adjusted the tighter will the jaws be clamped upon the carpet. The table is moved back and forth by a gear-wheel 33, which engages the rack 26, and this gear-wheel is mounted on a revoluble shaft 34, which is journaled in bearing-blocks 35. These blocks are held in place between the standards 36 on the bracket 37 by plates 38, and they are supported yieldingly on springs 39, Fig. 8. A hollow shaft 40 is also journaled in these bearing-blocks, and it carries a pinion 41, which drives the gear 33. This shaft also carries a friction-wheel 42 between the belt-pulleys 43 43′. These pulleys are fast on the hollow shaft 40, and the friction-wheel is fast to a rod 44, slidably arranged in said hollow shaft. A pedal-lever 45 is mounted on the base 46 and operated by the pedals 47 47′. A rod 48 is fastened to the pedal-lever and one arm of a crank 49, which has its other arm fastened to one end of the rod 44. This crank is pivotally mounted on an upright rod 50, which is supported on an arm 51, carried by the bracket 37. The rod 50 is provided with a yielding arm 52 for the rod 44, and the bracket 51 carries a spring-pressed brake-shoe 53, which engages the friction-wheel 42.

The power-shaft 54, Fig. 2, is driven by a motor 55 of any suitable character, and a belt 56, traveling on the pulleys 57 and 43, moves the table forward, and a belt 56′, traveling on the pulleys 57′ and 43′, is adapted to move the table in the reverse direction accordingly as the friction-wheel 32 is moved in frictional engagement with pulleys 43 43′ by depressing one or the other of the pedals.

I have found it convenient to mount the sewing-machine 58 on a frame 59. The machine is also driven from the power-shaft 54 by the belt 59, traveling on pulleys 60, and the transmitting mechanism 61. It will not be necessary to describe specifically the construction of the transmitting mechanism, for that is a well-known article of commerce and forms no part of this invention. I may employ transmitting mechanism 61, or the same may be located in the head of the sewing-machine, as well known in the art. The pedal 47 is depressed to move wheel 42 into engagement with pulley 43 to cause the table to move forward, and the rod 62 swings the crank-rod 63 and causes the transmitter operating rod 64 to throw the transmitting mechanism into active operation and operate the needle 65. Thus the needle and the pedal are operated synchronously from the same power-shaft, and when it is desired to reverse the movement of the pedal depressing-pedal 47′ not only reverses the pedal-operating mechanism, but also releases the transmitting mechanism 61 and stops the needle.

I have found it convenient to mount a serging-machine 66 for overcasting raw edges on the frame 59 also, and this frame can readily be turned around to bring machine 66 in operative relation to the pedal by simply disconnecting some of the parts. In this machine the power-transmitting mechanism is located in the head. I also provide a device for pushing the pile 67 away from the needle, so that the seam can be made through the ground or back of the carpet, and this device consists of a disk 69, having both sides beveled to form a wedge-shaped edge 70 and provided with grooves 71, which are tangential to the hub of the disk and extend to its edge. This disk is supported in a frame 72, which is adjustably secured on the bed 73 of the sewing-machine, and the beveled edge of the disk is arranged to operate between the grounds or backs of the two lengths of carpet and push the pile to one side, as shown in Fig. 15. When the seam is made and the carpet is opened up, the pile will work back into its normal position and to a very large extent conceal the seam. A plate 74 is adjustably mounted on the bed 73 and carries a guide-roller 75, which is located opposite the needle and serves as a guide for the edge of the carpet.

The operation of the machine is very simple and will be readily understood from the foregoing description of the construction. The two lengths of carpet are properly clamped and stretched on the table, and the pedal 47 is depressed. This starts the table-feeding mechanism to move the table forward and also starts the needle to operate. When the table has reached the end of its forward movement, the pedal 47′ is depressed, and this reverses the movement of the table-operating means and stops the needle. It will be observed that a single operator can very easily attend to this machine, and as the carpet is fed to the needle automatically the attention of the operator is only required to start and stop the machine at the proper time.

I may construct the machine to stop automatically at the end of the forward movement of the table, and I have illustrated such a construction in the drawings, Fig. 8. The rod 44 carries a wheel 76, which is arranged to engage an inclined stop 77 on the end side of the table, and a spring 78 on the rod 44 has its ends connected, respectively, to the wheel 76 and the hollow shaft 40. The brake-shoe is normally pressed into engagement with the disk by a spring 79, operating on the post 80, and this post is provided outwardly with an extending arm 81, Figs. 6 to 8. A rocking lever is supported in the bracket 51 and swiveled at one end to a collar 83 on the rod 48, and the other end of this lever 82 is provided with a yoke 84 to engage the arms 81. When the pedal is operating to throw the friction-disk into engagement with either the pulley 43 or the pulley 43′, the lever 82 will be rocked and one or the other arm of the yoke 84 will bear upon an arm 81 of the post 80 and release the brake-shoe from the wheel 42. When the wheel 76 engages the stop 77, the shaft 44 will be moved endwise sufficient to release the wheel 42 from engagement with the pulley 43 of the pulley 43′, and immediately the brake-shoe will be pressed against the wheel 42 by the spring 79. The spring 78 operates on the rod 44 to center the wheel 42 between the pulleys.

Without limiting myself to the precise construction and arrangement and proportion of parts herein shown and described, what I claim, and desire to secure by Letters Patent, is—

1. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle and having a flat top and a downwardly and outwardly inclined side, a flap on the table at the bottom of said inclined side, means carried by the flat top for stretching the carpet taut, means for feeding the table to carry the carpet horizontally to the needle, and a single means connected with and operating said feeding means and the needle synchronously.

2. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle, said table having a flat top to support two lengths of carpet being sewed together and a downwardly and outwardly inclined side to support the carpet previously sewed, a flap on the table at the bottom of said inclined side, means carried by the table for stretching the carpet, and means for moving the table to feed the carpet to the needle.

3. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle, said table having a flat top for supporting in horizontal position two lengths of carpet to be sewed together and a downwardly and outwardly inclined side to support the carpet previously sewed, a flap on the table at the bottom of said inclined side, means carried by the flat top of the table for stretching the carpet, means for moving the table to feed the carpet to the needle, and a single means connected with and operating said feeding means and needle synchronously.

4. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle and provided with an inclined side and a hinged flap at the bottom of said side.

5. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle and having a flat top, a downwardly and outwardly inclined side at the outer edge of the top, and a hinged flap at the bottom of said side.

6. In a carpet-sewing machine, the combination with a needle, of a movable flat-top table for carrying the carpet horizontally to the needle, arms on said table projecting from the inner edge thereof, one of said arms being adjustable longitudinally of the table, and clamps pivotally mounted on the arms, both of said clamps being adjustable on the arms toward or away from the table.

7. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle, and a clamp on the table comprising a slidable and a pivoted jaw for clamping the carpet, and means for adjusting the clamp on the table and at the same time swinging the pivoted jaw relative to the slidable jaw to stretch the carpet and clamp the jaws thereon.

8. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle, a rack on said table, a clamp, an arm carrying said clamp and supported on the table, a pinion on the arm arranged to travel on the rack, and means for operating said pinion to adjust the clamp on the table and at the same time tighten the clamp on the carpet.

9. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle, an arm projecting upward from the inner side of the table, and a clamp pivoted on said arm for holding the

carpet and comprising a slidable jaw and a pivoted jaw both extending lengthwise of the table.

10. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle, a clamp on the table for engaging the carpet and comprising a slidable jaw and a pivoted jaw, and means for adjusting the clamp on the table and at the same time swinging the pivoted jaw relative to the slidable jaw to clamp said jaws on the carpet.

11. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle, a clamp on the table comprising an arm, a slidable jaw on said arm, another jaw pivoted to the slidable jaw, a link connection between the rear end of the pivoted jaw and said arm, and means for adjusting the clamp on the table.

12. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle, a clamp on the table for engaging the carpet and comprising an arm adjustable on the table, a slidable clamping-jaw on the arm, another clamping-jaw pivoted to said slidable jaw, a link pivotally connecting the rear end of the pivoted jaw to said arm, a rack on the table, a pinion on the arm, traveling on said rack, and means for operating said pinion to adjust the clamping-arm on the table and at the same time clamp the jaws on the carpet.

13. In a carpet-sewing machine, the combination with a needle, of a table for carrying the carpet to the needle, a clamp adjustable on the table for holding the carpet and comprising a supporting-arm, a collar on said arm, a jaw slidably supported on the arm, guide-rods connected to the rear end of the slidable jaw and operating in said collar, springs on the rods to project the slidable jaw normally forward, another jaw pivoted to the slidable jaw, a link connection between the arm and the rear end of the pivoted jaw, and means for adjusting the clamp on the table and at the same time clamping the jaws on the carpet.

14. In a carpet-sewing machine, the combination of a sewing-machine, of a table for carrying the carpet, means for feeding the table in continued movement in either direction, means for operating said feeding means and the sewing-machine synchronously, and means for reversing the movement of the table and at the same time stopping the sewing-machine.

15. In a carpet-sewing machine, the combination with a sewing-machine, of a table for carrying the carpet to the sewing-machine, a driving-shaft, means for feeding the table, connections between the feeding means of the driving-shaft and the sewing-machine and the driving-shaft, and pedals, one of which is adapted to throw the sewing-machine and the feeding means into operation simultaneously and the other of which is adapted to stop the sewing-machine and reverse the feeding means.

16. In a carpet-sewing machine, the combination with a movable table for carrying the carpet, of means for moving the table comprising a rack on the table, a gear meshing with said rack, a hollow shaft, a pinion on said hollow shaft to drive said gear, forward and reversing pulleys on the hollow shaft, a friction-wheel between said pulleys, a rod in said hollow shaft connected to said friction-wheel, pedals, and an operating-rod connected to said pedals and the rod in said hollow shaft to carry the friction-wheel into operative engagement with one or the other of said pulleys.

17. In a carpet-sewing machine, the combination with a movable table for carrying the carpet, of means for moving the table comprising a rack on the table, a gear meshing with said rack, a pinion for driving said gear, a hollow shaft for carrying said pinion, forward and reversing pulleys on said hollow shaft, a rod in said hollow shaft, a friction-wheel connected to said rod and arranged between said pulleys, pedals connected to said rod for moving the friction-wheel into operative engagement with one or the other of said pulleys, and means on the table for automatically moving said rod when the table has reached the limit of its forward movement to move the friction-wheel into engagement with the reversing-pulley.

18. In a carpet-sewing machine, the combination with means for stretching two lengths of carpet and feeding them to the needle, of a pile-pusher consisting of a disk operating in front of the needle to push the pile away from the edges of the ground of each length, said disk being beveled on both sides and provided with grooves tangential to its hub and extending to its periphery.

FREDERICK H. HODGKINS.

Witnesses:
WM. O. BELT,
PAUL SCHMECHEL.