

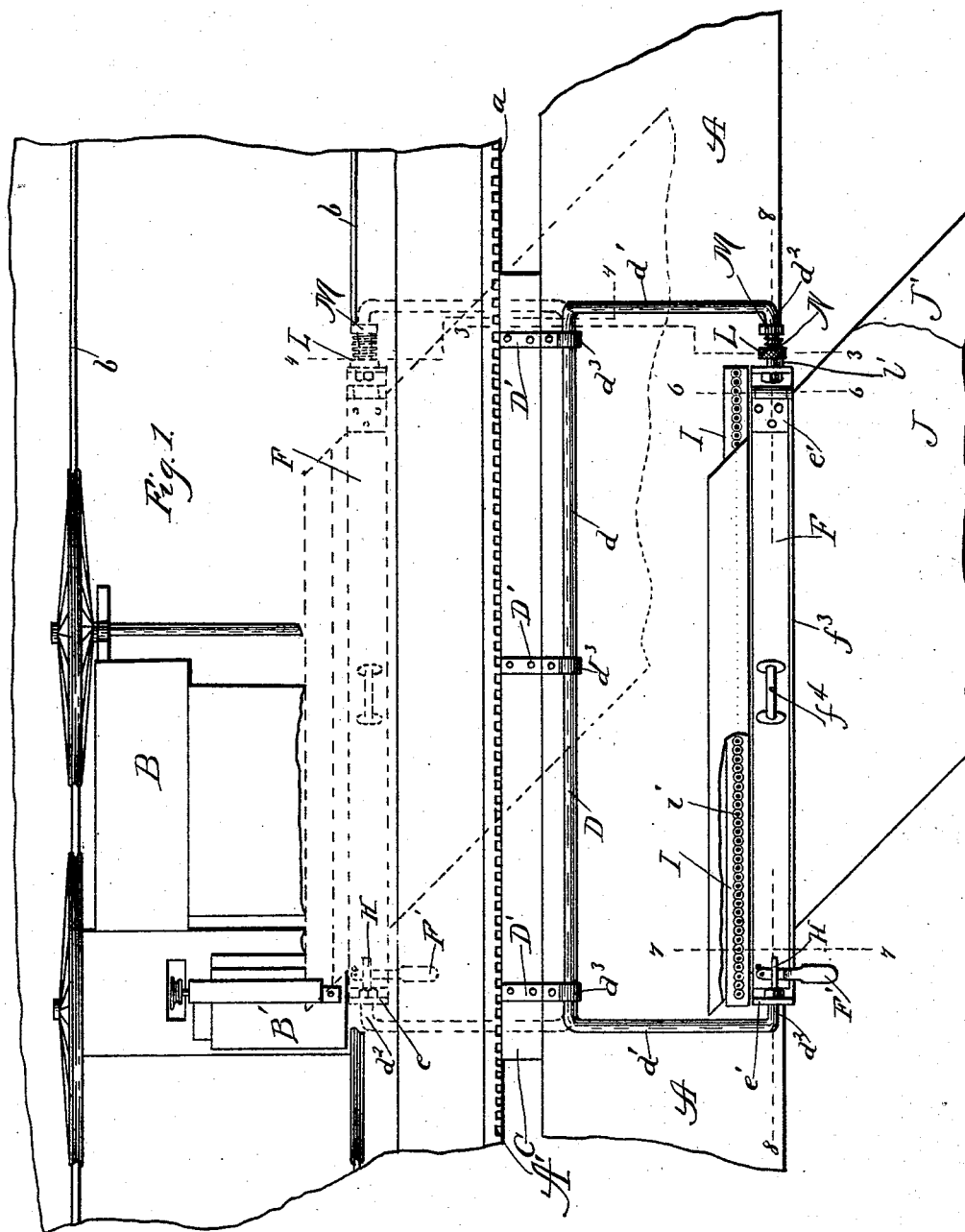
(No Model.)

3 Sheets—Sheet 1.

F. AMES.
MECHANISM FOR SEWING CARPET CORNERS.

No. 524,079.

Patented Aug. 7, 1894.



Witnesses:

W. C. Collier
J. A. Christianson.

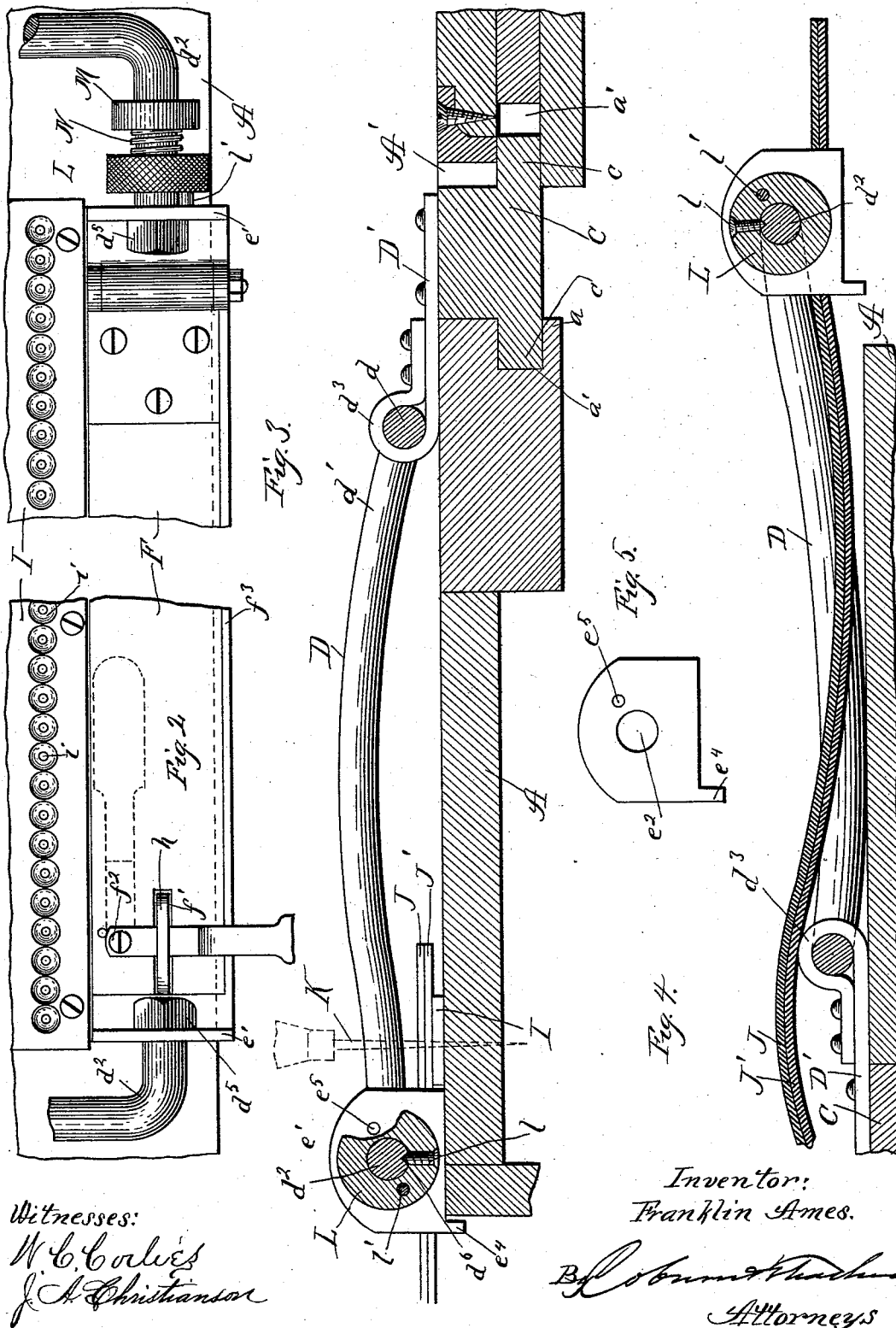
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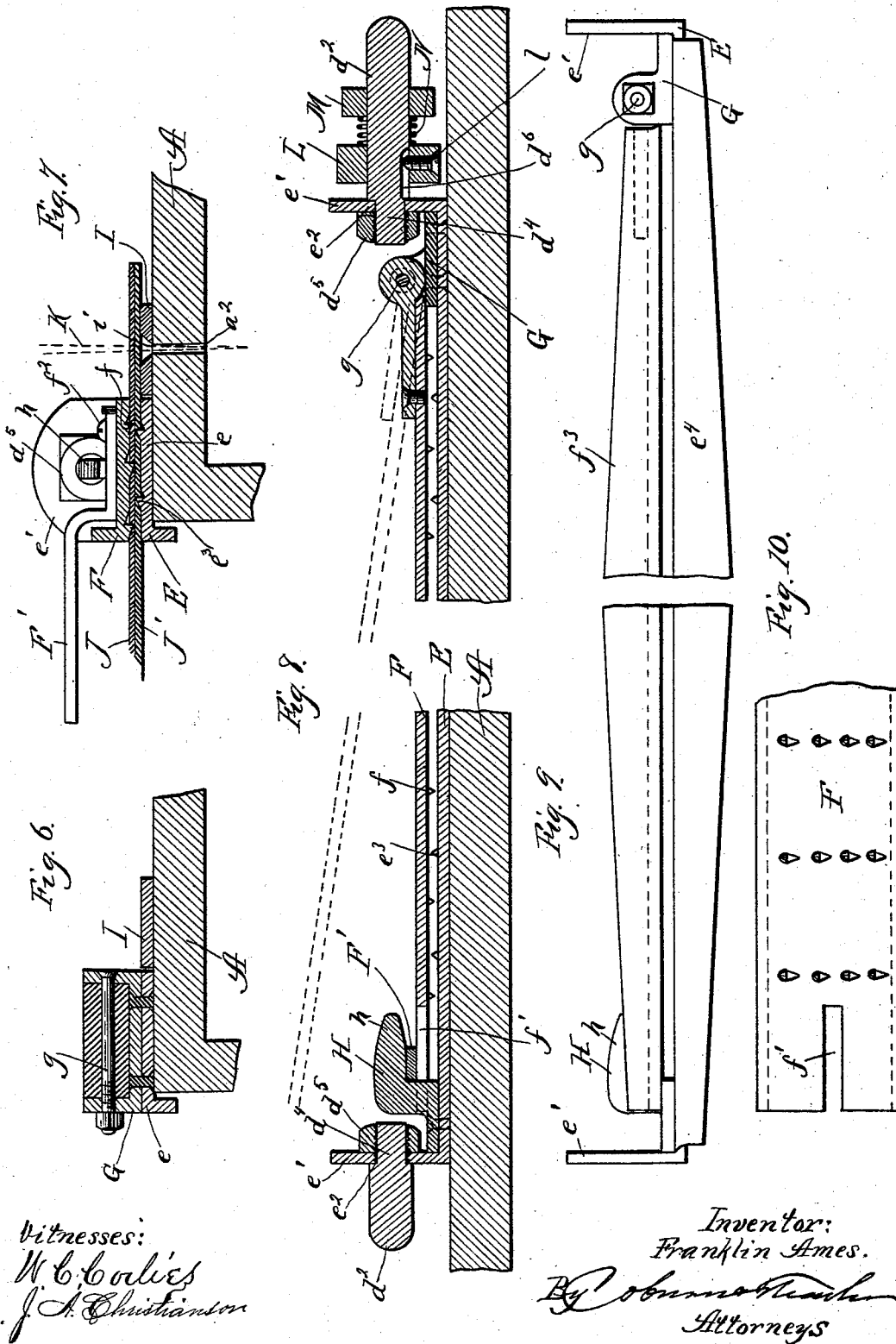
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UNITED STATES PATENT OFFICE.

FRANKLIN AMES, OF CHICAGO, ILLINOIS.

MECHANISM FOR SEWING CARPET-CORNERS.

SPECIFICATION forming part of Letters Patent No. 524,079, dated August 7, 1894.

Application filed April 18, 1893. Serial No. 470,813. (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 Mechanism for Sewing Carpet-Corners, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of a sewing machine carriage, a portion of the carpet supporting table and my improved corner clamp and holder mounted thereon; Fig. 2, a detail plan of a portion of the table and the clamp of the holder; Fig. 3, a detail section taken on the broken line 3. 3. of Fig. 1, with the holder in position for receiving the carpet corner breadths in the clamp; Fig. 4, a similar section taken on the broken line 4. 4. of Fig. 1, with the holder and clamp turned over into working position; Fig. 5, an end elevation of the lower member of the clamp; Fig. 6, a detail section taken on the line 6. 6. of Fig. 1; Fig. 7, a similar section taken on the line 7. 7. of Fig. 1; Fig. 8, a longitudinal section taken on the line 8. 8. of Fig. 1 partly broken away centrally; Fig. 9, a front elevation of the clamp detached, with the central portion broken away; and Fig. 10, a detail bottom plan of the outer end of the upper member of the clamp.

In the drawings, Fig. 1 is upon a scale by itself; all the remaining figures are upon one and the same enlarged scale.

My invention relates to mechanism whereby a carpet sewing apparatus, such for instance as is shown and described in my prior Letters Patent, No. 454,404, dated June 16, 1891, is adapted to the sewing of the corners of carpet borders, the mechanism being in the nature of an attachment to the main or carpet supporting table of the said apparatus. It has been difficult to adapt this carpet sewing apparatus to work successfully upon the corners of borders. Of course, it is impracticable to stretch the edges which are to be stitched together along the working edge of the table, as is the case in sewing straight lengths of carpet together, as described and shown in my patent aforesaid; it is therefore necessary to provide some special means by which the corner edges of the border may be securely

held in the required position for sewing, and at the same time retained on the table in proper relation to the sewing machine to secure the stitching together of the edges as the sewing machine carriage travels along at the side of the table. Unless this operation can be successfully performed, the border corners must be stitched together by hand, which is much more expensive than sewing by a machine and consumes much more time. It is, therefore, very desirable to adapt the said carpet sewing apparatus for working upon borders substantially the same as upon straight lengths. It is the object of my present invention to provide a mechanical attachment for the table, whereby this desirable result is successfully obtained; and this mechanism I will now describe in detail, both as to construction and operation, and will then definitely specify in claims the improvements which I believe to be new and desire to secure by Letters Patent.

In the drawings, A represents the long table upon which the carpet is placed for sewing, and B, the carriage on which the sewing machine, B', is mounted and which is adapted to run upon track rails, b, extended along one side of the table. These parts may be of the same general construction and arrangement shown and described in my said patent, No. 454,404, or any other construction and organization adapted to the general purpose of sewing carpets; their particular construction is of no special importance to my present invention, provided only that they must be so arranged relatively that, as the traveling support of the sewing machine moves along by the side of the table the needle of the sewing machine will stand in proper position to stitch together the carpet edges slightly projecting over the edge of the table on the track side thereof. The table is provided with a slot, a, extending the entire length thereof and arranged a little nearer the front or working edge of the table than the back edge thereof, as seen in Fig. 1. In each side of this slot a shallow groove, a', is made in the respective walls of the table which form the faces of the slot, these grooves being at right angles to the slot, as seen in Fig. 3. The table face at one side of the slot may be provided with a toothed rack, A'; this device, however, is for use in

securing and stitching straight lengths of the carpet on the table and has no necessary connection with the present invention, which may be applied to the table either with or without the rack.

A long bar, C, is fitted to the slot, *a*, in the table and is provided with side wings or flanges, *c*, adapted to fit the respective side grooves, *a'*, thus making a T connection between this bar and the table. Obviously the bar is adapted to slide back and forth in the table slot and lengthwise of the table, so that it may be moved to any part of the table desired; it is preferably closely fitted to the slot, so that while easily movable by an attendant, it will lie with reasonable security in any position to which it may be adjusted, without the necessity of any locking device, though some ordinary fastening device may be applied to the slide if desired. A holder frame, D, is hinged to this slide, C. This frame is formed from a metal rod bent into rectangular form so as to present one long side bar, *d*, two end bars, *d'*, at right angles to the former, and two short projections or studs, *d²*, at the outer extremities of the end bars, bent inward therefrom at right angles, and so lying parallel to the long side, *d*. This frame is secured to the slide by means of clips, *D'*, which are fastened to the slide and extend outward therefrom toward the back edge of the table, having at their extremities loops or eyes, *d³*, which are adapted to receive the long side bar, *d*, of the frame, which, therefore, finds bearings in these eyes in which it is held and may also freely turn. Obviously this rectangular frame may be swung laterally of the table, and the end bars, *d'*, are curved or bent slightly, as seen in Fig. 3, this bend being in a direction such that when the frame is swung over to the front edge of the table, the convex portion of the end arms will rest upon the table and so throw the outer extremities thereof a little above the level of the table, as seen in Fig. 4; when the frame is swung in the opposite direction toward the back edge of the table, the bend in the ends will be upward from the surface of the table and the extremities will rest upon the back edge of the latter, as seen in Fig. 3.

A clamp is mounted pivotally on the outer extremities of the frame ends. This clamp consists of a lower member, E, and an upper member, F, the particular construction of which will now be described. The lower member, E, consists of a long narrow plate or bed piece, *e*, which is turned up at each end to form an upright end piece, *e'*, at right angles to the bed, each of which has a central perforation, *e²*, for the reception of journals, *d⁴*, on the outer ends of the studs or projections, *d²*. This bed plate is held upon its bearings by means of nuts, *d⁵*, turned on the ends of the journals but not tightened against the ends of the plate so as to prevent the latter from swinging freely on its bearings. This bed plate is provided upon its upper surface

with a series of teeth, *e³*. The upper member of the clamp, F, is a simple straight narrow plate of about the same width as the lower plate, and provided on its inner surface with teeth, *f*, similar to those on the bed plate. This strip, F, is not as long as the lower one, and is hinged at one end to the latter by means of a clip, G, which is secured to the bed plate and to which the upper plate, F, is secured by means of a pivot bolt, *g*, as seen in Figs. 6 and 8. At the free end of the upper plate, F, there is a slot, *f'*, extending slightly inward lengthwise of the plate. A stud or post, H, is rigidly mounted on the lower plate at the end opposite to the hinge connection between the two members of the clamp, rising a little way above the plate and then turned at right angles and extending inward so as to provide a projecting finger, *h*, extending back and lengthwise over the plate. The slot in the end of the upper plate is located so as to register with this projecting finger, so that it will pass down over the same when the upper plate is turned down upon the bed plate. The height of the finger is so as to leave a little space between it and the plate, F, when the latter is lowered into position, which permits a key, *F'*, to be turned under the finger, thereby fastening the two clamping plates together; for convenience, the key is pivoted at one end to the upper plate, F, as seen at *f²* in Fig. 2, so that this locking key may be swung in and out underneath the finger.

The clamp must be reasonably stiff so that the carpet fabric will be held therein firmly and uniformly to keep the edges close together while being stitched. In order to secure this stiffness in the clamping plates without making them heavy, I provide a strengthening flange or web for each; this flange, *e⁴*, on the lower plate is located on the outer edge thereof and projects downward at right angles to the plate, as seen in Fig. 9, while a similar flange or web, *f³*, is arranged upon the corresponding edge of the upper plate and is extended directly upward at right angles thereto, as seen in the same figure.

The dimensions of the holder frame are such that when thrown over to the back of the table, the bottom plate of the clamp will rest squarely upon the back edge of the table, as seen in Fig. 3. As the clamp is pivotally mounted in this frame, as described above, it is evident that if the latter is turned over toward the front of the table the clamp may be retained in its upright position, as seen in Fig. 3, as it will turn upon its journal bearings for this purpose when the holder frame is swung over; so that the clamp may be brought down at the front edge of the table in the same position in which it left the back edge thereof; but the construction and arrangement of the parts are such that when the frame is thrown over in this position, the clamp will be held just a little beyond the front edge of the table and a little above the

level of the same, as seen in Fig. 4. The relation of the parts is such that when the two corner pieces are fastened within the clamp in proper position and the holder frame is turned over to the front of the table, the edges will extend beyond the latter and at a sufficient height above it to permit the sewing machine carriage to pass along underneath the clamp and the bed plate of the sewing machine directly underneath the projecting edges of the corner pieces, as seen in Fig. 1.

In order to fix the two corner pieces in the proper position in the clamp with certainty, a gage plate, I, is fastened to the surface of the table in such position that it will lie immediately in front of the clamp when the latter is at rest on the back of the table, as seen in Figs. 2 and 3. This plate is provided with a series of perforations, i , preferably counter-sunk, extending along its entire length, and underneath the plate there is a series of holes, a^2 , in the table, registering with the apertures in the plate above. The two border pieces, J and J', are first prepared for stitching by drawing lines on each, marking exactly where the line of stitching is to be made; the two pieces are brought together, one above the other, and the clamp being in position on the table, as seen in Fig. 3, are carried in over the lower plate thereof and over the gage plate until the stitching line marks are brought just over the line of perforations, i , in the latter. In this position the two pieces of carpet are secured together by pins, K, which are stuck through the fabric into the holes in the gage plate and table, as seen in Fig. 3. The corner pieces are thus accurately secured together along the stitching line, and are then straightened out from the gage plate so as to lie perfectly even between the clamping plates, and the clamp is then closed upon them by dropping the upper plate into position and fastening it down by swinging the lock key around underneath the locking finger, as already described. The carpeting will be engaged by the teeth in the respective clamping plates and firmly held between the latter. When the holding frame is thrown over to the front of the table, so as to bring the corner pieces into proper position for sewing, it is evident that some device is required to firmly secure and hold the clamp in a level position, as seen in Fig. 4 of the drawings; otherwise the projecting carpet edges would be depressed by the turning of the clamp upon its pivots if left free. To prevent this dropping of the carpet edges, I provide a fastening device, which consists of a collar, L, mounted loosely on one of the bent end studs, d^2 , of the holder frame. In the drawings, the stud selected for this purpose is the one next to the hinge of the clamping plates, which is made a little longer than the other for this purpose; the device may, however, be applied to either stud, or, if thought desirable, to both. On the under side of the stud there is a shallow groove, d^6 , running

lengthwise of the stud a short distance; and the loose collar, L, is provided with a pin, l , which passes through it and just enters the said groove, as seen in Fig. 8, thus holding the collar from turning upon the stud, but, at the same time, permitting it to slide thereon. A little outside of this sliding collar there is a second collar, M, fixed on the stud, and between the two collars is arranged a spring coil, N, which acts to press the loose collar inward toward the upright end piece, e' , of the lower clamping plate, which is provided with an aperture, e^5 . On the inner face of the loose collar, L, there is a pin, l' , adapted to enter this aperture, e^5 , in the end plate when the clamp is brought into a level position at the front edge of the table, as seen in Fig. 4. The spring behind the loose collar causes the engagement of this pin with the end piece of the clamp, and so holds the latter in the level position required during the operation of sewing.

The operation is as follows: When it is desired to sew two corner pieces together, the slide to which the holder frame is hinged is moved along in the table slot to the position desired, and the holder frame being swung to the back side of the table, the two pieces of carpet border are secured in the clamp, as already described. The fastening pins, K, are then removed and the clamp holder swung over to the front edge of the table, the clamp turning on its bearings so as to maintain its normal position during this movement of the holder. As the holder frame is brought down at the front of the table until the end arms strike the surface of the latter, the clamp is turned as required until the locking pin engages therewith, as already described, in which adjustment the clamp ought to be level and the edges of the carpet project therefrom in a horizontal position, as seen in Fig. 4. These two edges are now stitched together along the marking line, which must lie directly under the needle and then the sliding collar, which carries the fastening pin, is drawn back so as to release the clamp on its bearings, the holder is swung backward again, the clamp opened and the fabric removed, after which the operation is repeated as may be required. For convenience in handling the clamp and swinging holder, the former is provided with a handle, f^4 , attached to the upper plate, F, as seen in Fig. 1. The slot in the free end of the upper clamp bar, in connection with the rigid stud, H, on the lower member, also operates to always bring the upper member down upon the lower in exact position, so that the carpet corners are clamped between the two without any possible derangement, and the exact amount of edge projecting beyond the clamp is determined with certainty in every instance.

In many details of construction changes may be made in the particular parts herein described and shown, and other devices may be substituted for some of those here specified,

such, for instance, as the device for fastening the clamp plates together, and the device for holding the clamp in a level position during the operation of sewing. I do not wish to be understood, therefore, as limiting my invention to the specific construction and arrangement of all the devices herein shown and described. With this mechanism I provide an attachment for a carpet sewing table, designed for the sewing of corner pieces, which is always ready for use, may be constantly attached to the table, is quickly adjusted to the working position required, and is easily manipulated to bring the edges of the corner pieces into required position for sewing and securely hold them in this position during the said operation.

It will be noticed that the device constitutes a veritable attachment to the table and is practically a part thereof, though when the apparatus is to be used for sewing straight lengths of carpet this device may be slid to one end of the table out of the way, and, if occasion requires, may be detached from the table by pulling the slide out of the slot at one end thereof.

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

1. In an apparatus for sewing carpet corners, a supporting table for the carpet, in combination with a sewing machine carrier adapted to move along the side of the table, a holder hinged to the table lengthwise thereof and adapted to be swung across the same from back to front thereof and a clamp mounted on and carried by said holder, substantially as described.

2. In an apparatus for sewing carpet corners, a supporting table, in combination with a movable slide mounted thereon and adapted to be moved lengthwise thereof, a holder hinged to said slide along its length, and a clamp pivotally mounted on said holder, substantially as described.

3. In an apparatus for sewing carpet corners, a supporting table provided with a T slot running lengthwise thereof, in combination with a slide, D, fitted in said slot and movable along the same, the rectangular holder frame, D, hinged to said slide with its axis running lengthwise thereof, and a carpet clamp mounted pivotally on the outer ends of the said frame and free to turn on its bearings, whereby the holder may be adjusted lengthwise of the table and the clamp may be retained in normal position as the holder is swung across the table, substantially as described.

4. In an apparatus for sewing carpet corners, a supporting table, in combination with a carpet holder mounted on said table by hinges with its axis running lengthwise thereof, a carpet clamp pivotally mounted at the outer ends of the holder and free to turn on its bearings, and a stop device adapted to secure the clamp in level position when thrown

over to the front edge of the table, substantially as described.

5. In an apparatus for sewing carpet corners, a supporting table, in combination with a holder frame, D, hinged lengthwise of the table and provided with end bars, d' , bent or curved in the direction of their length as described, and a carpet clamp pivotally mounted on the outer ends of these bars, whereby the outward bend of the arms will come in contact with the table to elevate the clamp on their outer ends above the level thereof when the holder is thrown over toward the front edge of the table, substantially as described.

6. In an apparatus for sewing carpet corners, a supporting table, A, in combination with a rectangular holder frame, D, with hinge connections to the table lengthwise thereof and having end bars, d' , in combination with the lower clamp plate, E, provided with upright ends, e' , mounted on pivotal bearings at the extremities of said end bars, and the upper clamp plate, F, connected at one end by a hinge with the lower plate, and a fastening device at the other end whereby the two plates are secured together, substantially as described.

7. In an apparatus for sewing carpet corners, the lower clamp plate, E, provided with a rigid upright stud, H, in combination with the upper clamp plate, F, hinged at one end to the lower plate and having a short slot, f' , at its free end adapted to receive said stud, and the lock key, F', adapted to fit under a finger on the stud thereby fastening the clamp plates together, substantially as described.

8. In an apparatus for sewing carpet corners, the supporting table, A, in combination with the swinging holder frame, D, hinged lengthwise of the table, a carpet clamp pivotally mounted in the outer extremities of said frame and adapted to rest flat upon the table in its outward or back adjustment, a gage plate, I, fixed on the table lengthwise thereof and parallel and adjacent to the clamp when in its backward adjustment, and provided with a series of perforations, i , and pins, K, adapted to temporarily secure the carpet corners to the gage in exact position for fastening in the clamp, substantially as described.

9. In an apparatus for sewing carpet corners, a supporting table, A, in combination with a swinging frame, D, connected by hinges to the table with its axis lengthwise thereof and provided with pivotal bearings, d^4 , at the outer ends thereof, the carpet clamp, E. F., provided with upright end pieces, e' , journaled loosely on the bearings, d^4 , a spring actuated collar, L, mounted on the journal stud, free to slide lengthwise thereof, but secured from turning thereon and provided with a pin, l' , adapted to engage with an aperture in the end piece, e' , to secure the clamp in level position, when adjusted for work at the front edge of the table, substantially as described.

10. In an apparatus for sewing carpet corners, the table, A, in combination with the

swinging rectangular frame, D, connected by hinges thereto and having journal studs, d^4 , at its outer extremities, a carpet clamp provided with end pieces, e' , journaled on said
5 studs and free to turn thereon, a loose collar, L, mounted loosely on one of said journal studs and held thereto by a pin, l , entering a groove, d^5 , thereon, a spring coil, N, adapted to slide the collar forward on the stud thereby
10 causing a pin, l' , thereon to engage with an aperture, e^5 , in the end piece, substantially as described.

11. In an apparatus for sewing carpet corners, the lower clamp plate, E, provided with

an upright stud, H, having horizontal finger, h , in combination with the upper clamp plate, F, hinged at one end to the lower plate and having a short longitudinal slot, f' , at its free end, adapted to pass down over said stud and thereby cause the two plates to properly register in closing, and a pivoted locking arm arranged to be swung under the said finger to secure the clamp substantially as described.

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