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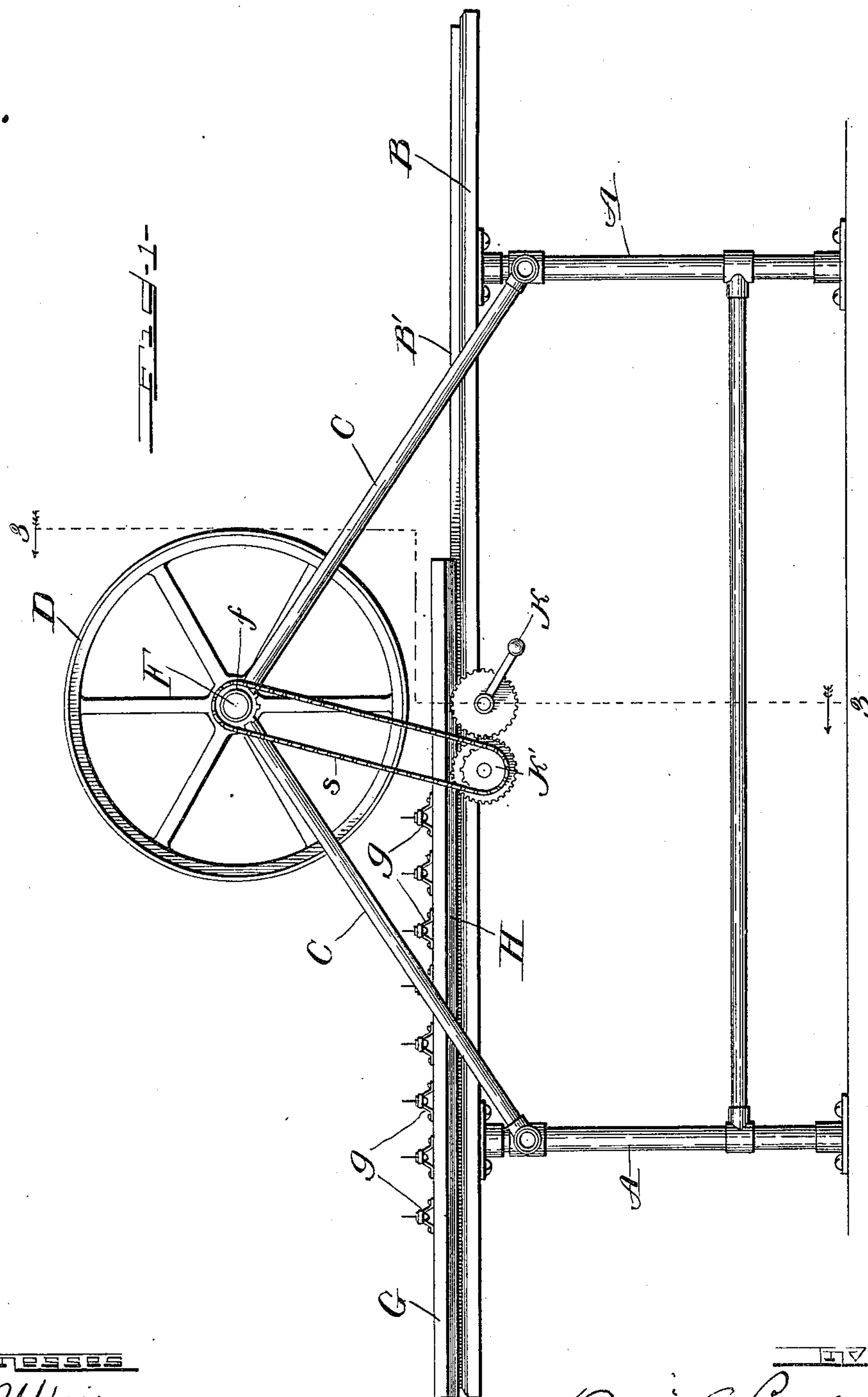
Patented Feb. 12. 1901.

D. E. ROWLEY.
PAD TUFTING MACHINE.

(No Model.)

(Application filed May 26, 1900.)

4 Sheets—Sheet 1.



WITNESSES

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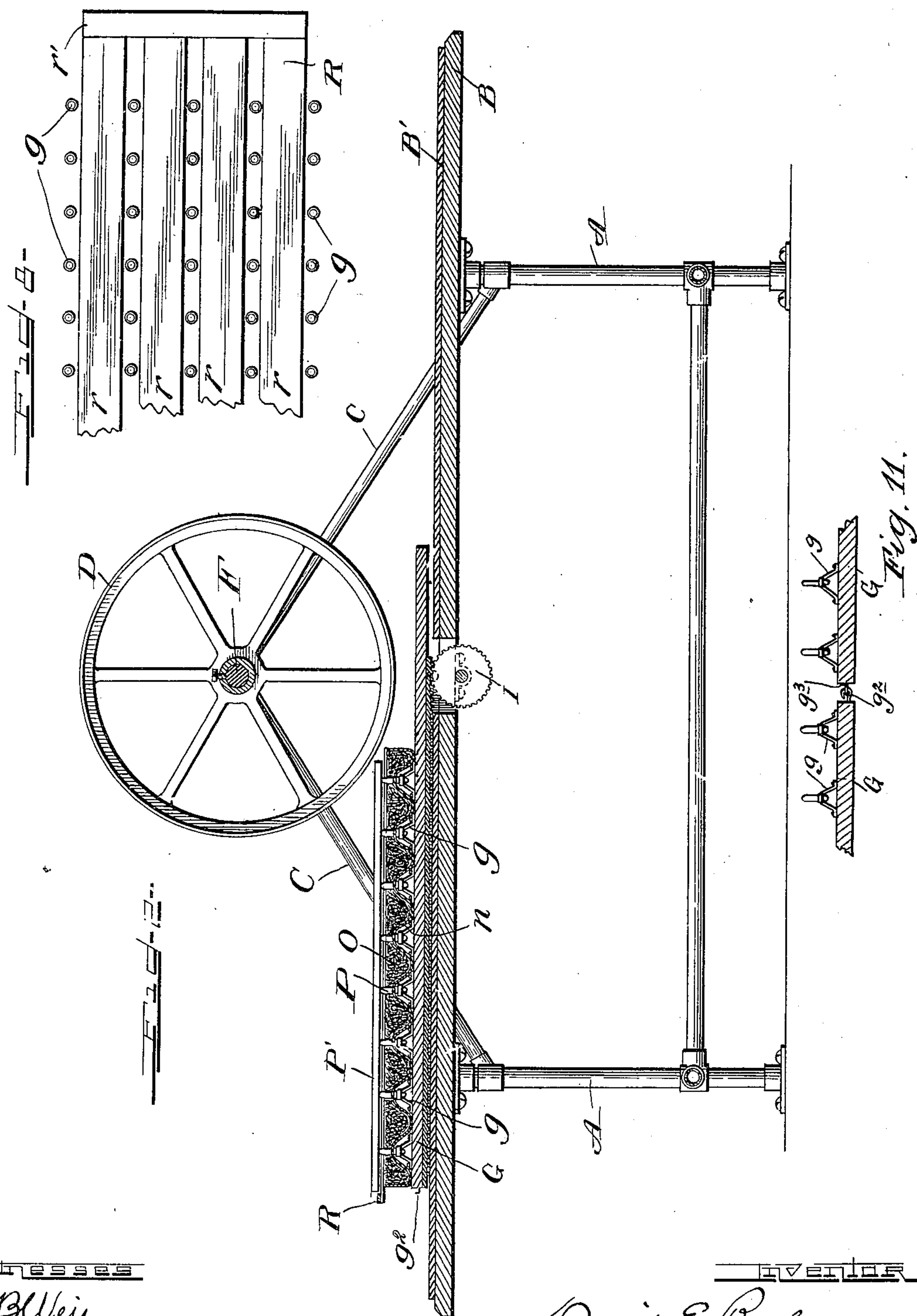
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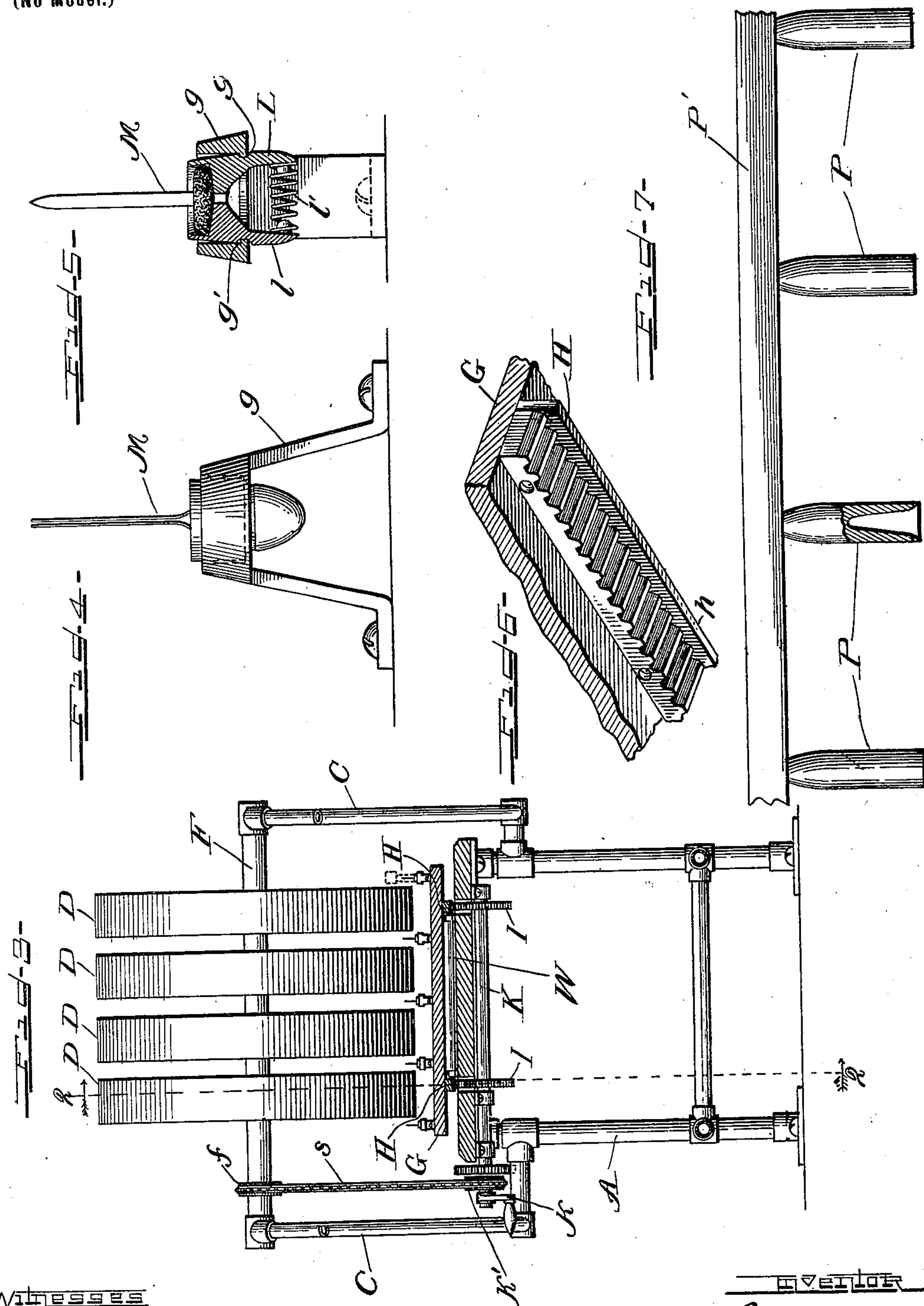
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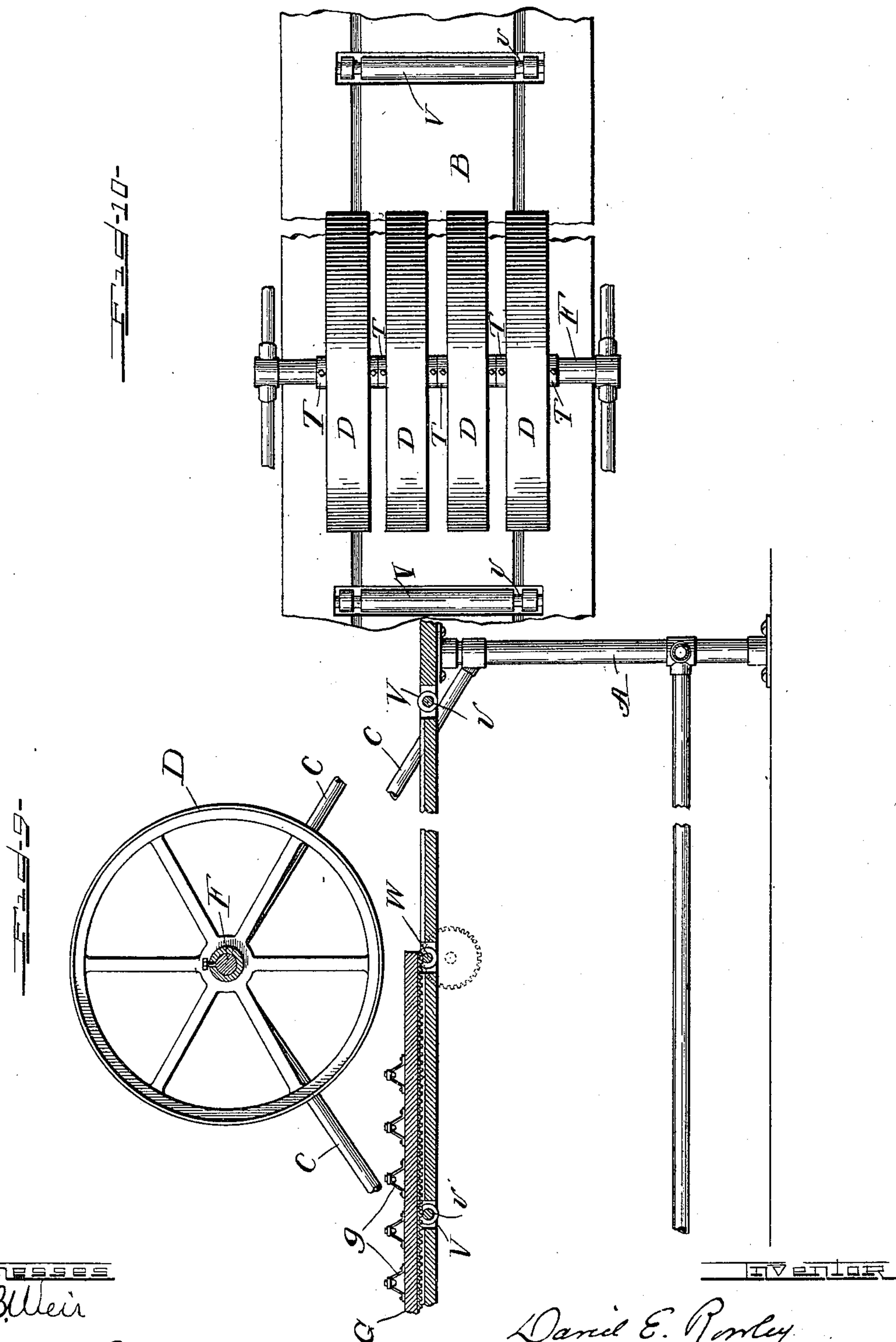
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4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

DAVID E. ROWLEY, OF CHICAGO, ILLINOIS.

PAD-TUFTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 667,795, dated February 12, 1901.

Application filed May 26, 1900. Serial No. 18,134. (No model.)

To all whom it may concern.

Be it known that I, DAVID E. ROWLEY, a citizen of the United States of America, residing at Chicago, in the county of Cook, in the State of Illinois, have invented certain new and useful Improvements in Pad-Tufting Machines, of which the following is a description.

Referring to the accompanying drawings, wherein like reference-letters indicate like or corresponding parts, Figure 1 is a side elevation of my improved machine. Fig. 2 is a longitudinal vertical section in line 2 2 of Fig. 3. Fig. 3 is an end elevation and partial transverse section in line 3 3 of Fig. 1. Fig. 4 is a side elevation of one of the elevated rings and a clench-pin-retaining device with the pin in position. Fig. 5 is a vertical section of the same, taken at right angles to the position shown in Fig. 4. Fig. 6 is a partial perspective view of one of the cog-racks secured to the under surface of the movable table, parts being broken away to show the construction. Fig. 7 is a side elevation of one series of the guiding-pins, partially broken away to show the construction. Fig. 8 is a partial top plan of the preferred form of presser-board, the position of the guiding-pins being shown in dot-lines. Fig. 9 is a partial longitudinal vertical section of the preferred form of my improvement, and Fig. 10 is a partial top plan of the same. Fig. 11 is a broken sectional view showing two of the boards G detachably connected.

The object of my invention is the construction of a machine for the purpose of economically and rapidly manufacturing tufted padding or upholstering suitable to be secured to various articles of furniture in finishing the same.

To this end my invention consists in the novel construction, arrangement, and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, A represents suitable supports for a preferably skeleton table B.

C C are extensions supporting a series of presser-wheels D D, arranged upon the shaft F, extending from one support to the other.

G is a longitudinally-movable table or board arranged above and supported by the table B in such a manner as to be readily passed

beneath the wheels D. The board G has upon it a series of elevated rings *g*, arranged in parallel lines or rows.

L is a clench pin or button retaining device comprising two jaws *l l*, adapted to be passed through the ring on the support and be retained therein in any preferred manner. As shown, the jaws *l l* are provided with notches engaging with the shoulders *g' g'* of the ring-support, while a coiled spring *l'* or its equivalent throws the free ends of the jaws *l l* apart for the purpose of retaining the holder in proper position and also for causing the upper end of the jaws to firmly embrace the head of the clench-button M.

Any preferred means may be employed for properly driving and guiding the movements of the table G upon the table B. As shown, the means consists in securing one or more cog-racks H upon the lower surface of the board G, meshing with cog-wheels I, mounted on the shaft K and driven by means of a crank *k*. The cog-racks are preferably provided with downwardly-projecting extensions *h*, which embrace guiding-strips B', secured to the table B. It is obvious that by operating the crank *k* the table G may be driven in either direction at will.

The mode of operation of my machine as thus far described is as follows: The table G being positioned at one side or the other of the wheels D and the clench-buttons M positioned within the holders L and the ring-supports *g*, the finishing fabric N is arranged upon the board G by the hands of the operator, the clench-pins extending therethrough and retaining the fabric in position. After this is done the guiding-pins P, preferably so constructed that all the pins for each row of supports may be handled as an entirety, are placed in position. This may be readily accomplished by a connecting-bar P'. The stuffing material O is then suitably adjusted to the extent desired, when, if preferred, a presser-board R may be placed thereon to aid in evenly compressing the stuffing material and in arranging the same. The presser-board may be of any preferred construction, that shown in Fig. 8 being preferred. As here shown, the board comprises a series of parallel slats *r*, secured together at their ends by cross-slats *r'*. The spaces between the

slats are of a size and so arranged as to permit the guiding-pins to extend upward between the slats, as shown in dot-lines in Fig. 8. After pressing the stuffing material as far as it may conveniently be done in this manner the presser-board R, together with the guiding-pins P, is removed, when burlap or other equivalent material may be evenly extended over the ends of the clench-pins and pressed down thereon, so that the pins will penetrate therethrough to a slight extent. Upon operating the crank *k* the board will be forced beneath the series of wheels D, which, contacting with the burlap, compresses the same, with the stuffing material, to a point which brings the burlap substantially in line with the heads of the clench-buttons M. At the moment the forward row of clench-buttons is substantially in line with the tread or lowest point of the wheels and while the stuffing material is compressed, as described, the clench-pins extend above the burlap substantially their entire length. By means of the openings between the spokes of the wheel the operator may now pass his hand between them and clench the pins in the usual manner. After this is done the board is again moved forward to the next row of clench-pins and the operation repeated. This operation may be repeated with a single board or by a series of boards, which may be detachably connected one to another, and the product may result in a short pad or in a long strip of pad, which may be later cut to the desired size and form.

If desired, after placing the burlap in position the presser-board R may be replaced thereon, and thus passed beneath the wheels. The clench-pins extending upward between the slats of the board are readily secured, as before described.

In some classes of work it may be advantageous to forcibly rotate the wheels D. In such cases I prefer to place a sprocket-wheel *f'* upon the shaft F and a similar sprocket-wheel *k'* upon the shaft K and by means of a chain S rotate the wheels by the same operation that drives the table backward and forward. Ordinarily, however, I prefer to have the wheels loosely mounted upon the shaft F, so that they may rotate by the frictional contact with the burlap. In order that the machine may be adjusted to do tufting of different dimensions, it is desirable that the wheels be arranged so that they may be adjusted to their positions upon the shaft F. When the wheels are loosely mounted upon the shaft and are rotated only by frictional contact with the surface of the padding, adjustable collars T, secured to the shaft F by suitable set-screws, will permit such adjustment, when another board G, having the supports *g* suitably arranged, may be employed to cooperate with the wheels in making the padding. In machines in which the wheels are secured to the shaft and rotate therewith the wheels may be provided with set-screws, permitting the adjustment on the shaft as

before. In order to reduce friction, I prefer to arrange rollers V V upon the table B to support the movable table G. The rollers may be provided with circumferential depressions *v*, within which the guiding cog-rack bars may be positioned as the table is operated. (See Figs. 9 and 10.) It is obvious that the pressure is in a vertical line with the shaft K. If desired, a transverse roller W may be located at this point on the table B to reduce friction and prevent the board G from springing downward.

A long sectional board or table may be provided by connecting together a plurality of the boards or sections G in any desired or suitable manner.

In some cases it may be preferred to employ simply a strip of wood or other suitable material adapted to set upon the supports *g* in place of the pins P. This, however, is an obviously inferior equivalent and is not recommended.

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

1. A tufting-machine, comprising a suitable support, a longitudinally-movable table or board mounted thereon, provided with a series of rings supported above the surface thereof and arranged in parallel lines, in combination with presser-wheels, supported above the movable board, between the lines of elevated rings, substantially as described.

2. A tufting-machine, comprising a suitable support, a longitudinally-movable table or board mounted thereon provided with a series of rings supported above the surface thereof and arranged in parallel lines, and means for longitudinally moving said board, in combination with presser-wheels, supported above the movable board between the lines of elevated rings, substantially as described.

3. A tufting-machine, comprising a skeleton support, a longitudinally-movable table or board mounted thereon, provided with a series of rings supported above the surface thereof and arranged in parallel lines, and means for longitudinally moving said table, in combination with presser-wheels supported above the movable board between the lines of elevated rings, and extending downward substantially to the tops of said rings, substantially as described.

4. A tufting-machine comprising a table-support provided with a transverse shaft K, cog-wheels I I mounted thereon, and means for rotating said shaft, a longitudinally-movable table or board provided on its lower surface with cog-racks meshing with said cog-wheels and upon its upper surface with a series of elevated rings arranged in parallel lines, in combination with presser-wheels supported above the movable board between the lines of elevated rings, substantially as described.

5. A tufting-machine comprising a table-support provided with one or more guides B',

the transverse shaft K, one or more cog-wheels I mounted upon said shaft, and means for rotating the same, a longitudinally-movable table or board provided on its lower surface with one or more cog-racks H meshing with said cog-wheels and provided with extensions adapted to embrace the guides B', and upon its upper surface with a series of elevated rings arranged in parallel lines, in combination with presser-wheels supported above the movable board between the lines of rings, substantially as described.

6. A tufting-machine, comprising a suitable support, a longitudinally-movable table or board mounted thereon provided with a series of rings supported above the surface thereof arranged in parallel lines, and means for retaining clench pins or buttons within the elevated rings, in combination with presser-wheels, supported above the movable board between the lines of rings, substantially as described.

7. A tufting-machine, comprising a suitable support, a longitudinally-movable table or board mounted thereon provided with a series of rings supported above the surface thereof arranged in parallel lines, and clench-pin holders adapted to be removably positioned within the rings, in combination with presser-wheels, supported above the movable board between the lines of the elevated rings, substantially as described.

8. A tufting-machine comprising a suitable support, a longitudinally-movable table or board mounted thereon provided with a series of rings supported above the surface thereof and arranged in parallel lines, in combination with presser-wheels, supported above the movable board between the lines of elevated rings, and means for adjusting the distance between the several wheels, substantially as described.

9. A machine of the kind described comprising a suitable support, a longitudinally-movable table or board mounted thereon provided with a series of rings supported above the surface thereof and arranged in parallel lines, in combination with a shaft supported above the movable board provided with presser-wheels loosely mounted upon the same and positioned between the lines of the elevated rings, and adjusting-collars arranged between the wheels, substantially as described.

10. A machine of the kind described comprising a suitable support, a longitudinally-movable table or board mounted thereon provided with a series of rings supported above the surface thereof and arranged in parallel lines, and guiding means adapted to be removably secured to and extend above the rings, in combination with presser-wheels supported above the movable board between the lines of elevated rings, substantially as described.

11. A machine of the kind described, comprising a suitable support, a longitudinally-

movable table or board mounted thereon provided with a series of rings supported above the surface thereof and arranged in parallel lines, means for retaining clench-pins within the rings, and guiding-pins adapted to be secured to and extend above said rings, in combination with presser-wheels supported above the movable board between the lines of elevated rings, substantially as described.

12. A machine of the kind described, comprising a suitable support, a longitudinally-movable board or table mounted thereon provided with a series of rings supported above the surface thereof and arranged in parallel lines, means for securing clench pins or buttons within said rings, guiding-pins adapted to be secured to and extend above said rings, and a presser-board, comprising a series of separated slats secured together and arranged to permit the guiding-pins to extend between them, in combination with presser-wheels supported above the movable board between the lines of elevated rings, substantially as described.

13. A machine of the kind described, comprising a suitable support, a longitudinally-movable table or board mounted thereon provided with a series of rings supported above the surface thereof and arranged in parallel lines, means for securing clench pins or buttons within said rings, a series of guiding-pins for each line of rings adapted to be secured to and extend above said rings and connected together so as to be handled as entireties, and a presser-board comprising a series of separated slats secured together and arranged to permit the connected guiding-pins to extend between them, in combination with presser-wheels supported above the movable board between the lines of elevated rings, substantially as described.

14. A machine of the kind described, comprising a suitable support provided with anti-friction-rollers V, a longitudinally-movable table or board supported by said rollers, and provided with a series of rings supported above the surface thereof and arranged in parallel lines, in combination with presser-wheels supported above the movable board between the lines of elevated rings, substantially as described.

15. A tufting-machine comprising a table-support provided with a transverse shaft K, cog-wheels I I mounted thereon and means for rotating said shaft, a longitudinally-movable table or board provided at its lower surface with cog-racks meshing with said cog-wheels I I and upon its upper surface with a series of elevated rings arranged in parallel lines, in combination with the elevated shaft F having mounted thereon presser-wheels D D arranged between the lines of elevated rings, and means for transmitting the rotation of the shaft K to the shaft F in a reverse direction, substantially as described.

16. A tufting-machine, comprising a suitable support, a longitudinally-movable table

or board mounted thereon comprising a plurality of sections detachably connected at their ends, and provided with a series of rings supported above the surface thereof and arranged in parallel lines, in combination with presser-wheels supported above the movable table between the lines of elevated rings, substantially as described.

17. A button support and holding device for upholstering-machines, comprising a ring having supports for holding the same in an elevated position, in combination with opposing jaws adapted to be positioned and temporarily retained in the ring, means for retaining the opposing jaws in the ring, a seat for the button at one end of the jaws, a spring for resiliently holding the free ends apart, and a fulcrum between the two ends whereby the button-holder may be opened to receive a button and resiliently close thereon, substantially as described.

18. In a device of the kind described, guiding and pressing means comprising guiding-pins connected together so as to maintain their relative positions and so as to be handled as entreties, in combination with a

presser-board comprising connected slats separated to permit the connected guiding-pins to extend through between the slats, substantially as described.

19. A button support and holding device for upholstering-machines, comprising a ring having supports for holding the same in an elevated position, in combination with opposing jaws positioned in the ring and retained by means of cooperating shoulders and notches on the ring and jaws, a seat for the button at one end of the jaws, a spring for resiliently holding the free ends of the jaws apart, and a fulcrum between the ends of the jaws, whereby the button-holder may be opened to receive a button and resiliently close thereon, substantially as described.

20. A guiding device for tufting-machines comprising a plurality of guiding-pins, and means connecting the same and acting to maintain their relative positions, substantially as described.

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Witnesses:

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