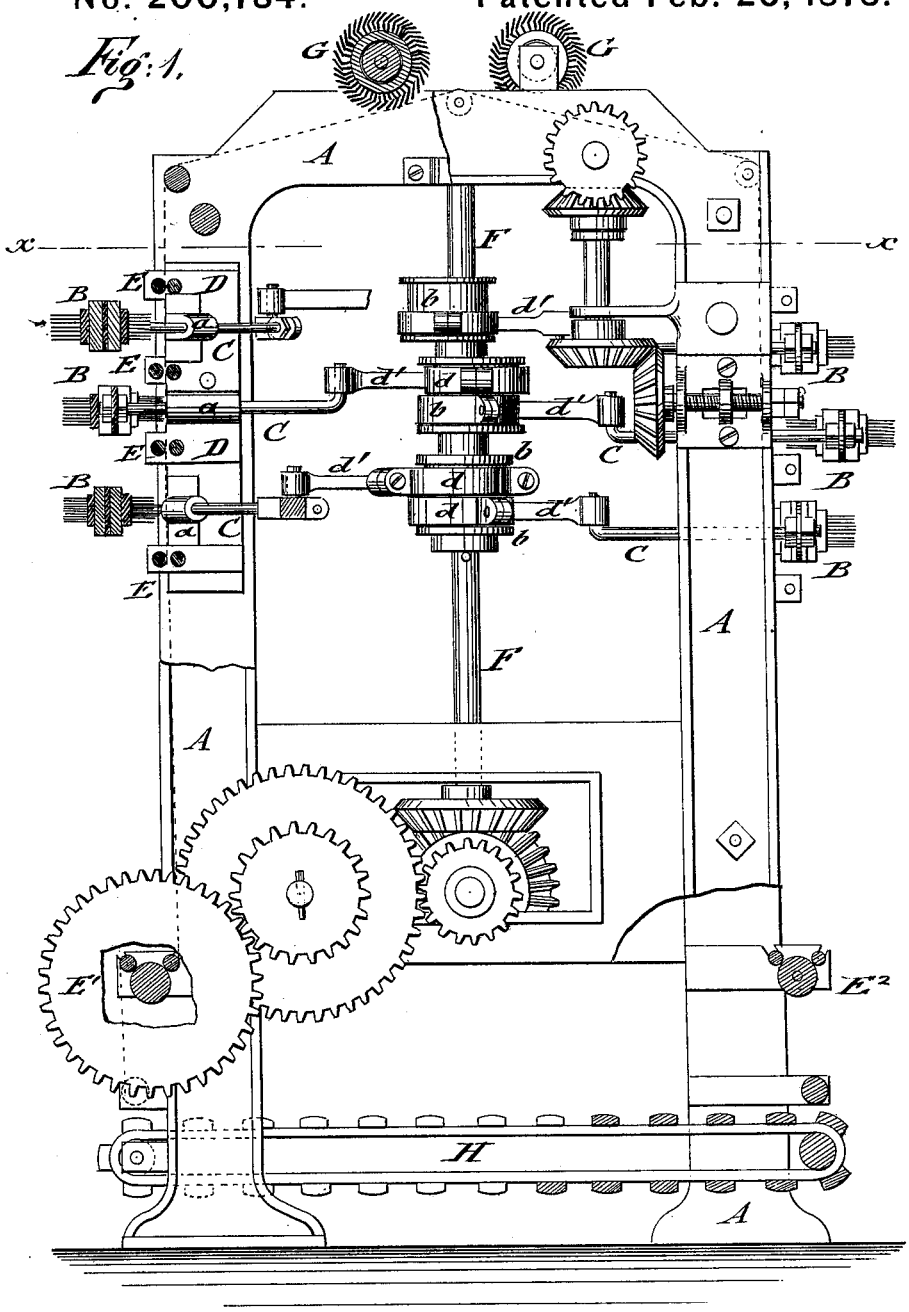
2 Sheets—Sheet 1.

C. WOELFEL & J. MASSEY.

Gigging Machine for Napping Cloth.

No. 200,784. Patented Feb. 26, 1878.

Fig. 1.



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C. WOELFEL & J. MASSEY. 2 Sheets—Sheet 2

Gigging Machine for Napping Cloth.

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Fig: 2.

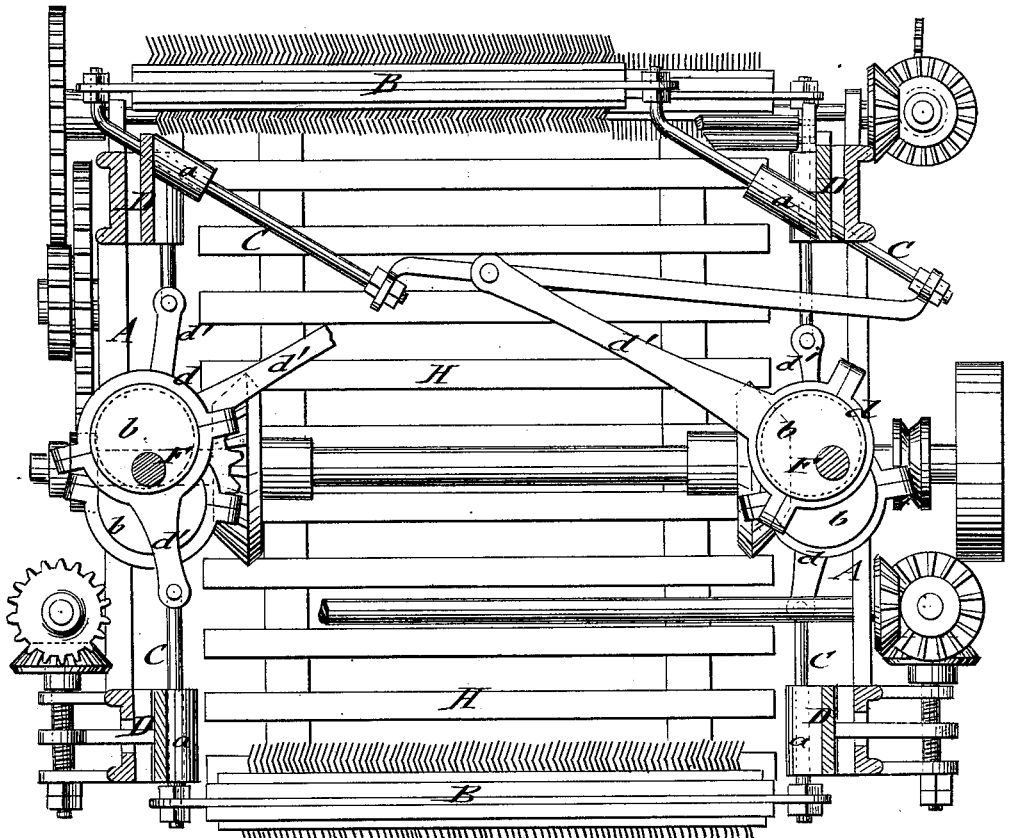


Fig: 3.

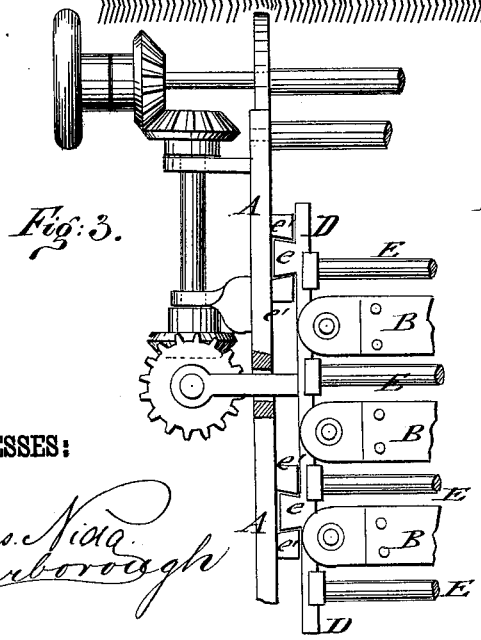
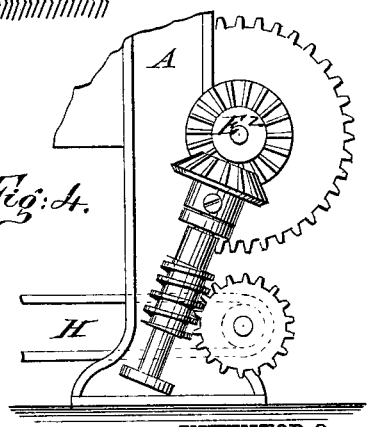


Fig: 4.



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UNITED STATES PATENT OFFICE.

CHRISTIAN WOELFEL AND JAMES MASSEY, OF CHESTER, PENNSYLVANIA.

IMPROVEMENT IN GIGGING-MACHINES FOR NAPPING CLOTH.

Specification forming part of Letters Patent No. **200,784**, dated February 26, 1878; application filed September 22, 1877.

To all whom it may concern:

Be it known that we, CHRISTIAN WOELFEL and JAMES MASSEY, of Chester, in the county of Delaware and State of Pennsylvania, have invented a new and Improved Gigging-Machine for Napping Cloth, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a sectional side elevation of our improved gigging-machine; Fig. 2, a plan view of the same, partly in horizontal section, on line *x x*, Fig. 1. Fig. 3 is a detail side view of the adjustable bracket-plate, supporting-guide rollers and napping-cards; and Fig. 4, a detail side view of the mechanism for moving the cloth-conducting table or apron.

Similar letters of reference indicate corresponding parts.

This invention relates to improvements in the gigging-machines for which Letters Patent have been granted heretofore to Carl Gerber, Sr., and Christian Woelfel, dated February 1, 1876, and numbered 172,991, so that the cloth is dressed in a superior manner, the napping-cards adjusted to the cloth during the passage of the same through the machine, and the cloth taken up at the lower part of the machine and carried from one side to the other without dragging the cloth or throwing the power required to move it on the taking-up and stretching rollers.

The invention consists of the combination of guide-rolls and reciprocating napping-cards with adjustable bracket-plates of the main frame, said bracket-plates being guided in recesses of the frame, and set by suitable screw-gear, while the napping-cards are reciprocated at right angles, or at any other lateral angle of inclination, to the cloth by means of eccentrics and vertical shafts.

At the lower part of the machine is an endless movable table or apron, that is slowly moved by suitable gear-connection with the stretching-rolls, to carry the cloth from one side of the machine to the other.

Referring to the drawings, A represents the supporting-frame of our improved gigging-machine, the frame being of rectangular shape, and of a size corresponding to the number of wire cards B employed. The wire cards B are of square shape, with wire clothing on one or all the sides, and are attached by clamping-screws, or otherwise, to the ends of slide-rods C, which are guided in sleeves *a* of detachable bracket-plates D, that are supported in an adjustable manner on the uprights of frame A.

The cards are arranged between pairs of guide-rolls E, that turn in bearings of the bracket-plate D, the cloth being passed between the guide-rolls, and moved through the machine to be exposed to the action of the cards by taking-up and stretching rolls E^1 E^2.

The napping-cards are reciprocated in planes at right angles to the cloth by means of two upright shafts, F, having a number of eccentrics, *b*, on each shaft, the eccentrics being connected by encircling straps *d* and arms *d'* with the slide-rods C, and so arranged on the shafts that they will work all the cards at the same time, but one after the other.

The slide-rods C may also be arranged at a suitable lateral angle of inclination to the bracket-plates D, whose sleeves are then cast or otherwise arranged at a corresponding angle, so that the cards strike the cloth at a plane at a right angle thereto, but at a lateral angle to either side, by which the bottom of the warp may be reached, and the nap raised much better than when all the wire cards strike the cloth at right angles. This angular motion of the cards to the cloth is clearly shown in Fig. 2.

The upright shafts and eccentrics impart to the cards *a* steadier motion, without jar or loss of motion, and cause them to strike the cloth more evenly. The mechanism is more durable, capable of being run at greater speed, and not as liable to get out of order as the crank and lever mechanism heretofore employed.

The bracket-plates D are guided by side rails *e* on horizontal dovetail guides *e'* of frame A, and made adjustable therein by suitable gearing and screws, as shown in Figs. 1 and 3, so as to move the bracket-plates forward or back, and bring the guide-rolls and the cloth closer to, or farther away from, the napping-cards.

The degree of striking-force of the cards may be regulated while the machine is in motion, saving thereby much time, for when the wire cards are once set on the slide-pieces

they remain set thereon, and need not be moved or taken off, as the striking of the cards on the cloth is regulated by adjusting the bracket-plates with the screws and gear. It is therefore not necessary to take off the wire cards either to put the cloth on the machine or while the nap is being laid on by the napping-rollers G at the top of the machine, the striking of the cloth being quickly regulated for all grades of cloth while the machine is in motion.

At the lower part of the machine is an endless apron or table, H, which is slowly moved by gear-wheel and worm-connection with the stretching-rolls, (shown in Fig. 4,) for the purpose of receiving the cloth and carrying it from one side to the other, to be delivered to the taking-up rolls E^1. The apron saves the power required by the stretching-rolls for dragging the cloth forward under the machine, and gives a more even tension to the cloth. The stretching-rolls E^2 are revolved by suitable gear, belt, or other connection with the driving-shaft, and the tension of the cloth regulated by the speed imparted to the stretching-rolls.

The nap may also be raised on both sides at the same time, if desired, by an extension of the guide-sleeves and brackets from the frame of the machine, the cards being arranged at alternate sides of the cloth.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a gigging-machine, the combination, with the supporting main frame, of horizontally-adjustable bracket-plates, carrying the guide-rolls, guide-sleeves, and the napping-cards, to regulate the striking of the cloth while the machine is in motion, substantially as and for the purpose set forth.

2. The combination of the adjustable bracket-plates, having guide-sleeves, guide-rolls, and the card-carrying slide-rods, with the operating upright shafts, eccentrics, and connecting straps and arms, substantially as specified.

3. The combination, with taking-up and stretching rolls and guide-rolls alternating with the napping-cards, of napping-cards and mechanism, substantially as described, to reciprocate the same in planes at right angles to the cloth, and also at a suitable lateral angle of inclination thereto, whereby the bottom of the warp is reached, substantially as and for the purpose described.

4. The combination, in a gigging-machine, with the taking-up and stretching rolls, reciprocating cards, and guide-rolls, of an endless movable table or apron at the lower part of the machine, to carry the cloth from one side to the other, substantially as described.

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Witnesses:
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