(No Model.) 4 Sheets—Sheet 1.

C. KNOCH.

MACHINE FOR MAKING STITCHED TRIMMINGS AND MOLDINGS.

No. 279,257. Patented June 12, 1883.

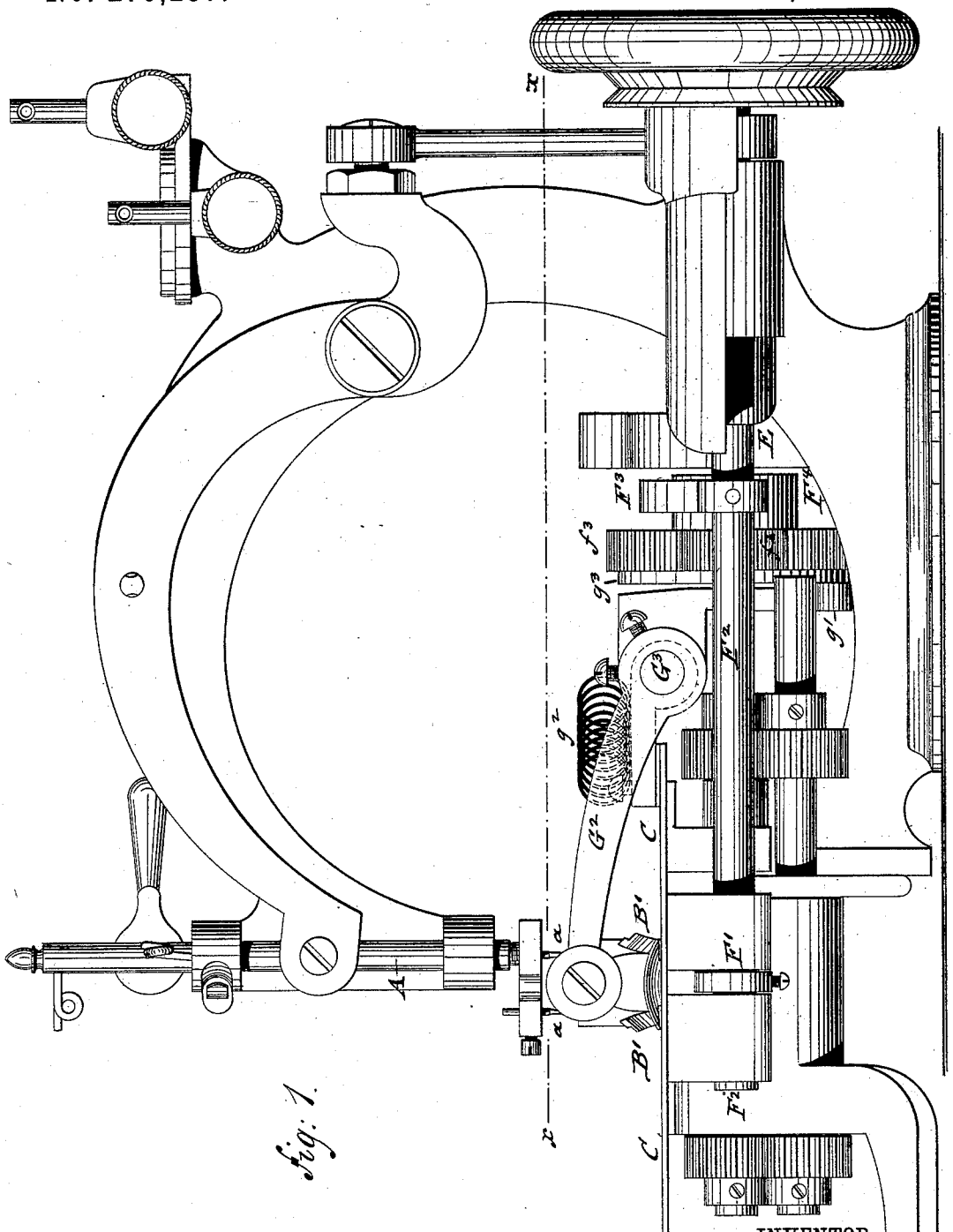


Fig. 1.

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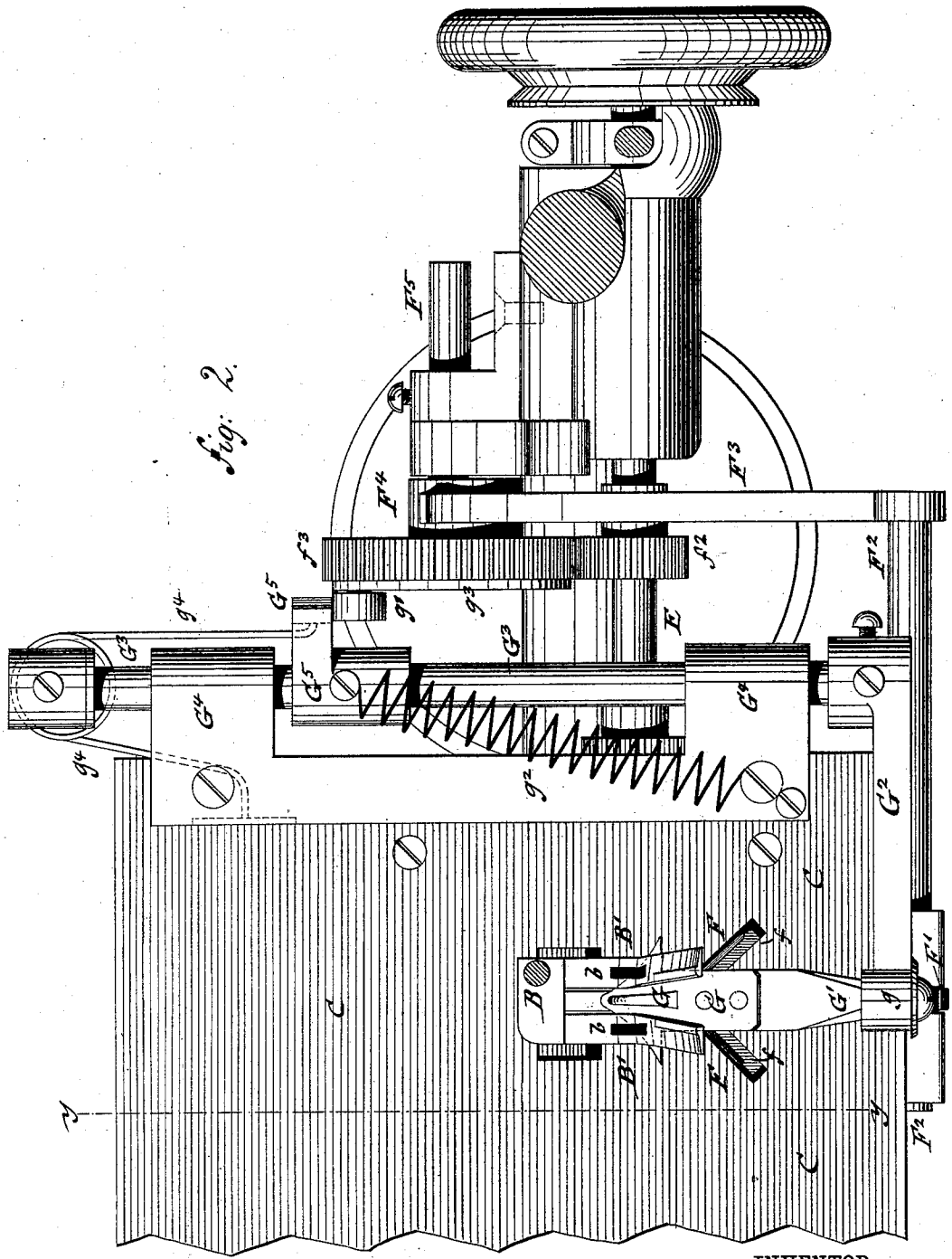
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Fig. 2.



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MACHINE FOR MAKING STITCHED TRIMMINGS AND MOLDINGS.

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fig: 4.

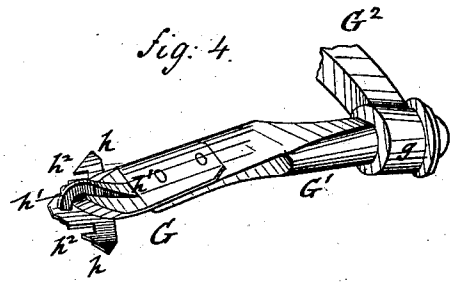


fig: 5.

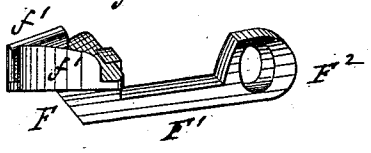


fig: 3.

fig: 6.

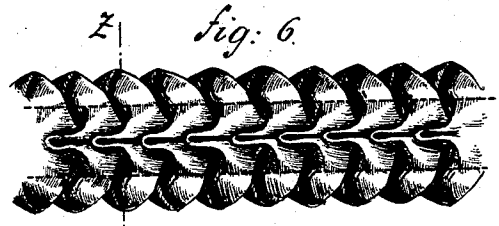


fig: 7.



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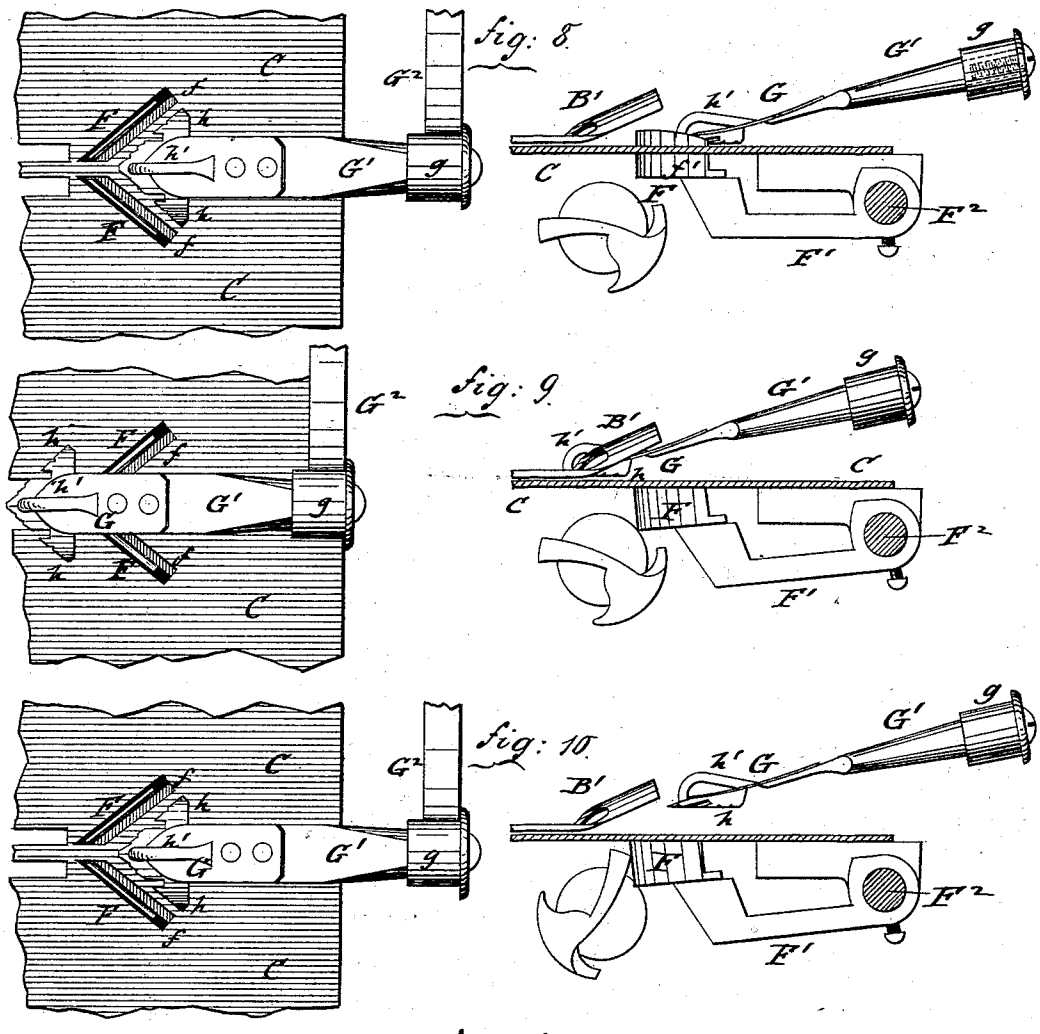
N. PETERS. Photo-Lithographer. Washington, D. C.

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UNITED STATES PATENT OFFICE.

CHARLES KNOCH, OF NEW YORK, N. Y., ASSIGNOR TO ALBERT LYONS, OF SAME PLACE.

MACHINE FOR MAKING STITCHED TRIMMINGS AND MOLDINGS.

SPECIFICATION forming part of Letters Patent No. 279,257, dated June 12, 1883.

Application filed March 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES KNOCH, of the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Making Stitched Trimmings and Moldings, of which the following is a specification.

This invention has reference to an improved machine for making stitched trimmings and moldings for ornamenting coffins, for millinery, and ladies' dresses, the machine being adapted to shape and stitch the trimming, so that large quantities of the same can be turned out.

The invention consists, essentially, of a machine for making stitched trimmings or moldings, composed of an organized double sewing mechanism the double presser-foot of which works in connection with a vertically-reciprocating V-shaped former and with a reciprocating and vertically-oscillating pusher of triangular shape, the pusher having a raised central nose and sharp recessed edges, by which latter the material to be plaited and stitched is pushed forward toward the double sewing mechanism.

The invention consists, further, of certain details of construction of the operating parts and of actuating mechanisms by which motion is imparted to the same from a common driving-shaft, as will be described more fully hereinafter, and finally be pointed out in the claims.

In the accompanying drawings, Figure 1 represents a front elevation of my improved machine for making stitched trimmings and moldings. Fig. 2 is a plan of the same, partly in horizontal section on line *x x*, Fig. 1. Fig. 3 is a vertical transverse section on line *y y*, Fig. 2. Figs. 4 and 5 are detail perspective views, respectively, of the pusher and former. Figs. 6 and 7 are respectively a top view and a vertical transverse section on line *z z* of a trimming or molding made on my improved machine. Figs. 8, 9, and 10 are respectively top views and side views of the pusher and former, showing them in different positions for shaping the trimming; and Fig. 11 is a detail side view of the mechanisms for actuating the pusher.

Similar letters of reference indicate corresponding parts.

In my improved machine for making stitched trimmings or moldings a double-chain-stitch sewing mechanism is employed, for which preferably the well-known Willcox & Gibbs system is used. This sewing mechanism consists of a vertically-reciprocating needle-bar, A, provided with two needles, *a a*, arranged at a suitable distance from each other, a presser-bar, B, with a double presser-foot, B′, said double presser-foot being provided with slots *b b* for the passage of the needles, each foot or wing of the same being bent in upward direction and inclined sidewise, as shown in Figs. 2 and 3. The inclined wings of the presser-foot B′ are made beveled from their thicker upper ends to their sharp lower edges. The needle-plate C is slotted below the double presser-foot B′ for the double feed, and for two rotating hooks of the usual construction, (not shown in the drawings,) one for each needle, which hooks are not placed on the same shaft, but on two separate shafts, to which, by an auxiliary shaft and suitable gear-wheels, motion in the same direction is imparted. The double sewing mechanism thus described is provided with the usual accessories—such as spool-holders, tension devices, and thread-guides—and is actuated from a driving-shaft, E, that receives motion by a belt-and-pulley transmission from a treadle or power-shaft, as the case may be.

All the parts so far described, except the peculiarly-constructed double presser-foot, are old and well known, and I do not make any claim for the same.

In front of the double presser-foot B′ is arranged, in converging slots *f f* of the needle-plate C, a vertically-reciprocating V-shaped former, F, that is composed of two separate wings, *f′ f′*, which are inclined at a suitable oblique angle to the longitudinal center line of the sewing mechanism. The upper edges of both wings of the former F are beveled, so as to take a better hold of the fabric to be plaited and stitched on the machine. The former F receives intermittent vertically-reciprocating motion from the driving-shaft in the following

manner: The lever-arm F′, which carries the former F, is applied by a clamping-screw to a shaft, F^2, turning in suitable bearings below the needle-plate C. A curved arm, F^3, at the opposite end of the shaft F^2 is raised or lowered by means of a cam, F^4, keyed to a short auxiliary shaft, F^5, which latter receives continuous rotary motion by gear-wheels f^2 f^3 from the driving-shaft E. The shaft F^5 turns in bearings of the supporting-frame of the machine, and is located back of the driving-shaft, as shown in Fig. 2. The same auxiliary shaft serves also for imparting motion to the reciprocating pusher G, which is arranged in line with the longitudinal central axis of the former F and double sewing mechanism.

The shank G′ of the pusher G is loosely applied to a sleeve, g, at the end of a lateral arm, G^2, so that the pusher G is capable of some laterally-oscillating motion, owing to the axial turning of the shank G′ in the sleeve g, whereby it retains always a horizontal position. The lateral arm G^2 is secured to a shaft, G^3, that slides in bearings G^4 of the plate C, parallel to the central axis of the sewing mechanism, and is intermittently reciprocated by means of an anti-friction roller, g', applied to the gear-wheel f^3 on the shaft F^5, which anti-friction roller engages at every revolution of the gear-wheel f^3 a fixed downwardly-extending arm, G^5, on the sliding shaft G^3. A spiral spring, g^2, that is applied to the sliding shaft G^3 and the plate C, keeps the fixed arm G^5 in contact with the anti-friction roller g' of the gear-wheel f^3. The gear-wheel f^3 is further provided with a raised sidewise-projecting rib, g^3, that extends around the greater part of the gear-wheel f^3. The lower end of the arm G^5 is pressed against the rib g^3 by a spring, g^4, as soon as the roller g' releases the arm G^5. The raised rib g^3 serves to turn the shaft G^3 axially in its bearings, and to impart thereby an upward motion to the pusher G. When the arm G^5 passes along the short smooth space between the ends of the rib g^3 (shown in Fig. 11) the pusher is lowered. At the same time the pusher G is carried forward by the action of the roller g' on the arm G^5 of shaft G^3.

The pusher G is made with V-shaped knife h, the point of which is in line with the direction in which the fabric moves under the needles. The knife h is provided with a central raised and curved nose, h'. The edges of the knife h are provided with notches h^2, so as to form sharp serrations, that take hold of the fabric and push the same forward against the double presser-foot B′, so as to expose it to the action of the former F and the double sewing mechanism described.

In place of the mechanism described for actuating the vertically-reciprocating former and the oscillating and longitudinally-reciprocating pusher, any other equivalent mechanism by which the same operation of parts is accomplished may be employed, as I do not desire to confine myself to the special mechanism shown.

By the joint operation of the devices described, a stitched trimming or molding of about the character shown in Figs. 6 and 7 is obtained.

The operation of the machine to produce the trimming or molding is as follows: The piece of fabric is folded at the edges by a folder of the usual construction. It is then moved by the pusher G against the raised former F, and thereby puffed up. This operation is shown in Fig. 8. The former F next descends beneath the cloth-plate, so as be out of the way of the pusher G, which is then moved forward. The forward motion of the pusher carries the puffed fabric forward against the wings of the presser-foot, the nose of the pusher projecting between the wings, as shown in Fig. 9, so as to shape thereby the puffed fabric laterally. The needles now descend and stitch the so plaited fabric at both sides. The pusher G is next raised and returned to its rearmost position, as shown in Fig. 10, at which moment the former F is raised again, so as to puff up the fabric and expose the required fullness of fabric to the action of the descending pusher, which pushes it forward again into the recess between the wings of the presser-foot, so as to plait the same and expose it simultaneously to the action of the needles, as before. The feed carries then the so-formed trimming forward, while a new section of the fabric is exposed by the joint action of the former and pusher to the sewing mechanism, which forms thereby a stitched trimming or molding with puffed plaits and of a highly-ornamental appearance.

I reserve the right to file a separate application for Letters Patent on the trimming or molding shown in Figs. 6 and 7, as the same forms an essential part of my invention.

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

1. The combination of an organized double sewing mechanism provided with a double presser-foot having upwardly-bent and laterally-inclined wings, a vertically-reciprocating V-shaped former guided in slots of the needle-plate, and a reciprocating and vertically-oscillating pusher, and mechanism for actuating the parts from a common driving-shaft, substantially as and for the purpose set forth.

2. The combination of an organized double sewing mechanism the double presser-foot of which has upwardly-bent and laterally-inclined wings, a V-shaped former, mechanism for reciprocating the same, a V-shaped pusher, and mechanism for longitudinally reciprocating and vertically oscillating the same, the former and pusher working conjointly with the presser-foot and double-sewing mechanisms to plait and stitch the fabric, substantially as specified.

3. In a machine for making stitched trimmings, a double presser-foot, B′, having upwardly-bent and laterally-inclined and beveled wings, substantially as described.

4. In a machine for making stitched trimmings, a vertically-reciprocating V-shaped

former, F, having independent wings *f' f'*, substantially as set forth.

5. In a machine for making stitched trimmings, a pusher, G, having a V-shaped knife, *h*, notched at the edges, and a central nose, h^2, substantially as specified.

6. In a machine for making stitched trimmings, the combination of the pusher at the end of an axially-turning shank, applied to a sleeve of a lateral supporting-arm, with mechanism for reciprocating the pusher and mechanism for vertically oscillating the same, substantially as described.

7. In a machine for making stitched trimmings, the combination of a pusher, G, oscillating shank G', lateral arm G^2, having fixed end sleeve, *g*, guided shaft G^3, having downwardly-extending and spring-pressed arm G^5, gear-wheel f^3, having anti-friction roller, *g'*, and sidewise-projecting rib g^3, gear-wheel f^2, and driving-shaft E, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHARLES KNOCH.

Witnesses:

CARL KARP,

SIDNEY MANN.