(No Model.) 4 Sheets—Sheet 1.

C. A. DAHL.

MECHANISM FOR OPERATING BUTTON HOLE STITCHING MACHINES.

No. 450,841. Patented Apr. 21, 1891.

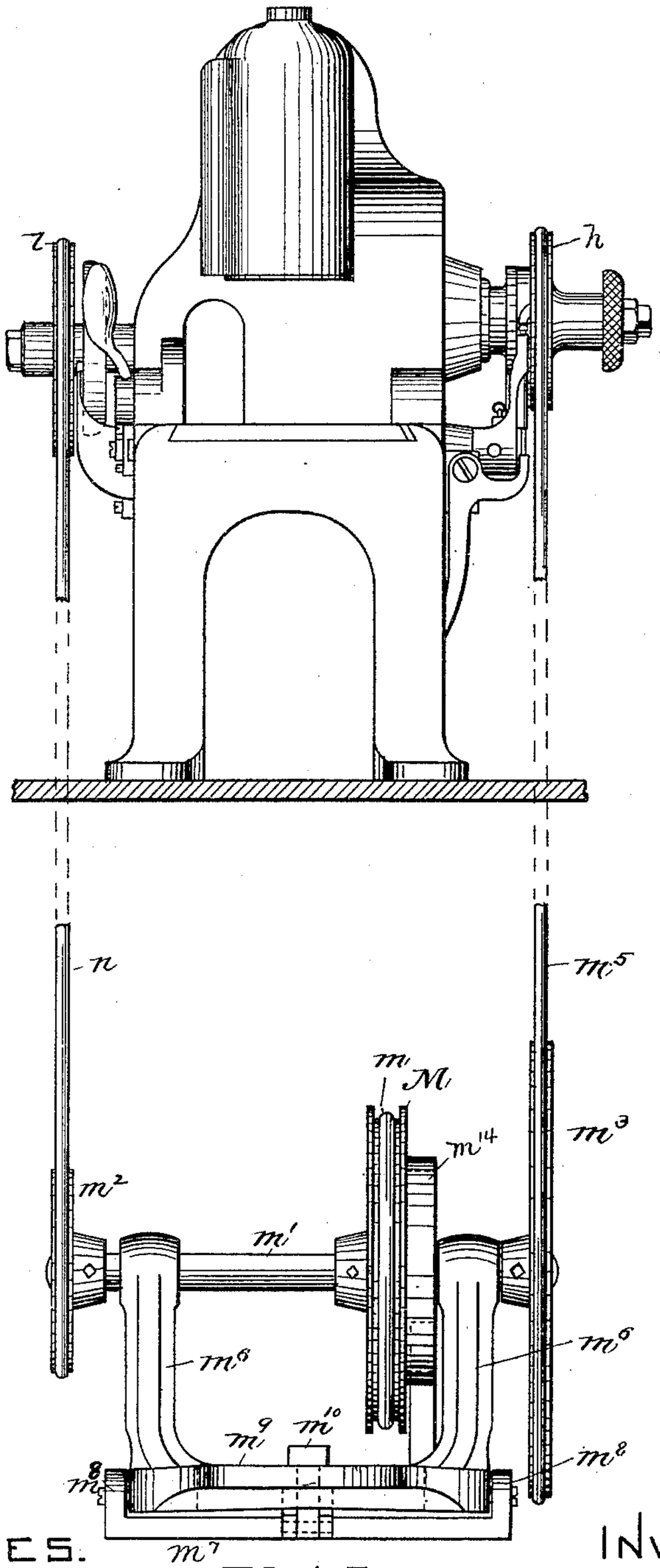

Fig. 1.

WITNESSES:

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Clarke & Raymond

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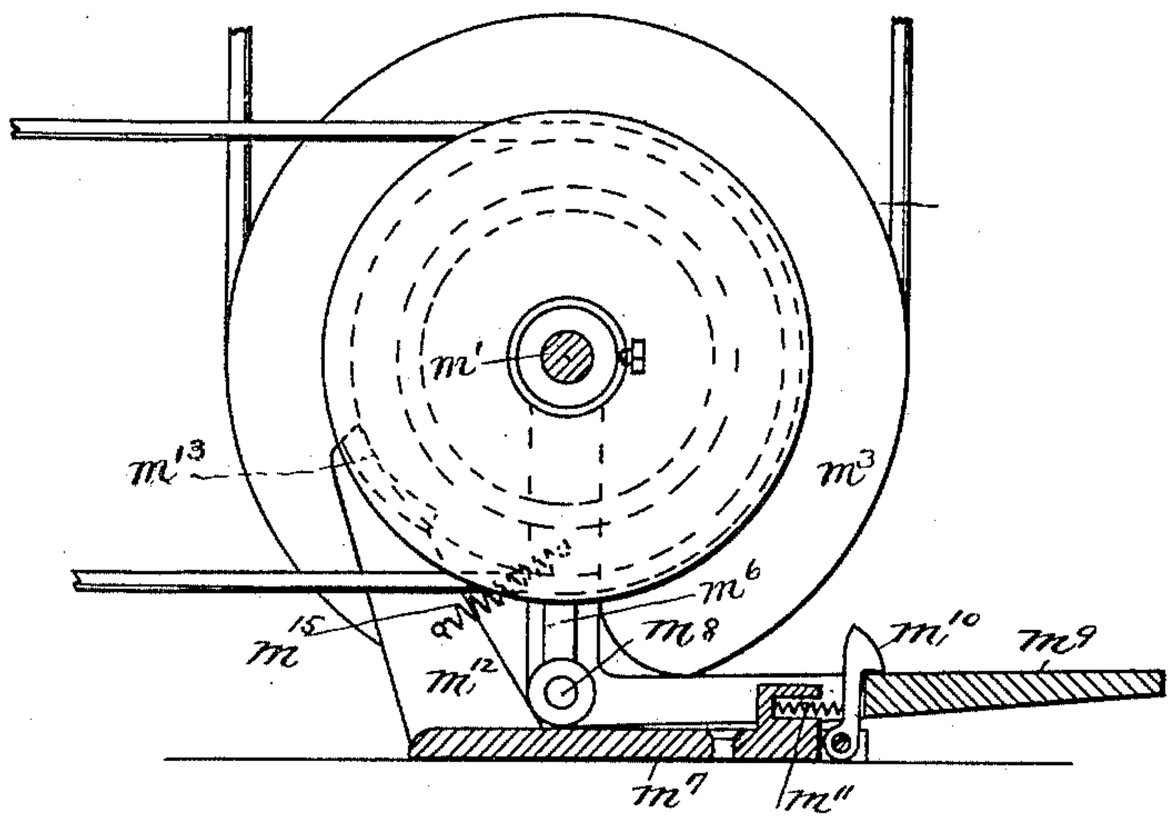

Fig. 2.

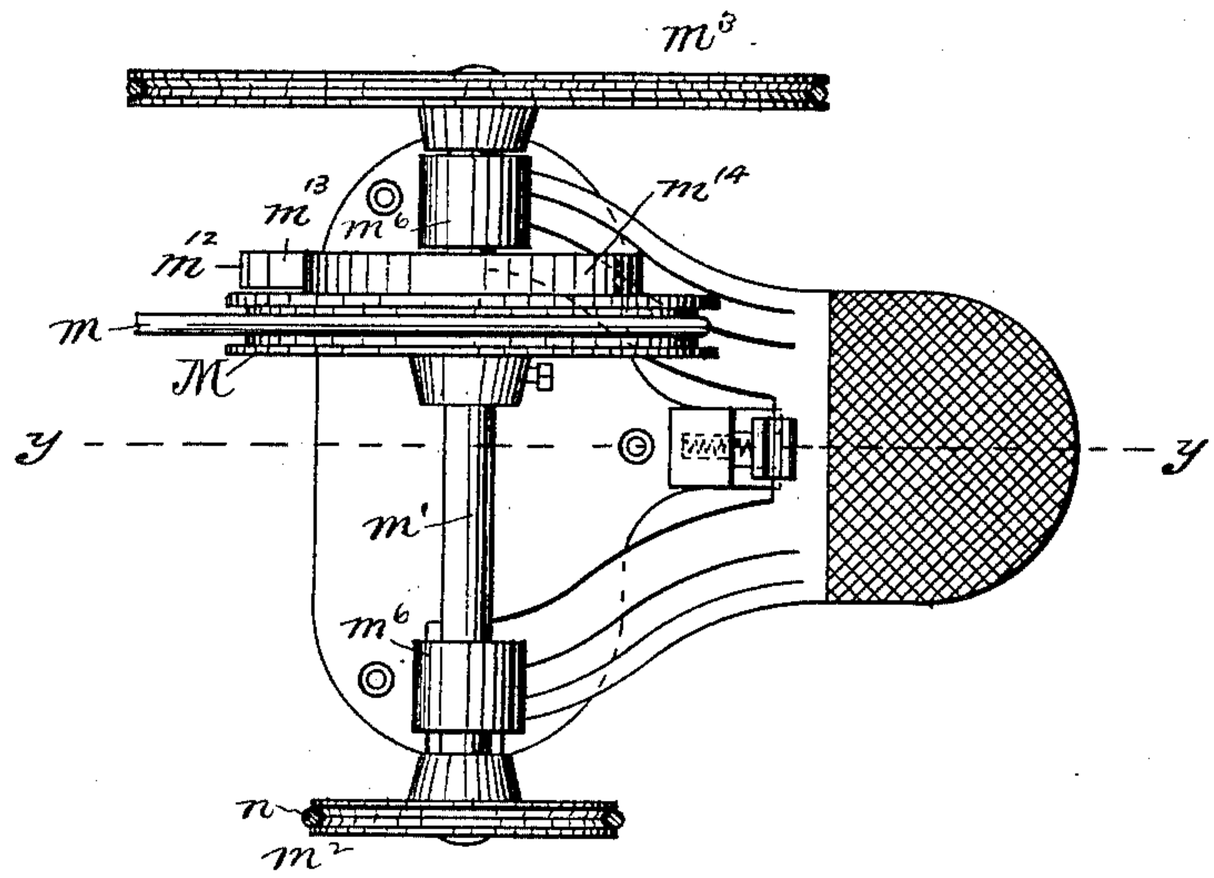

Fig. 3.

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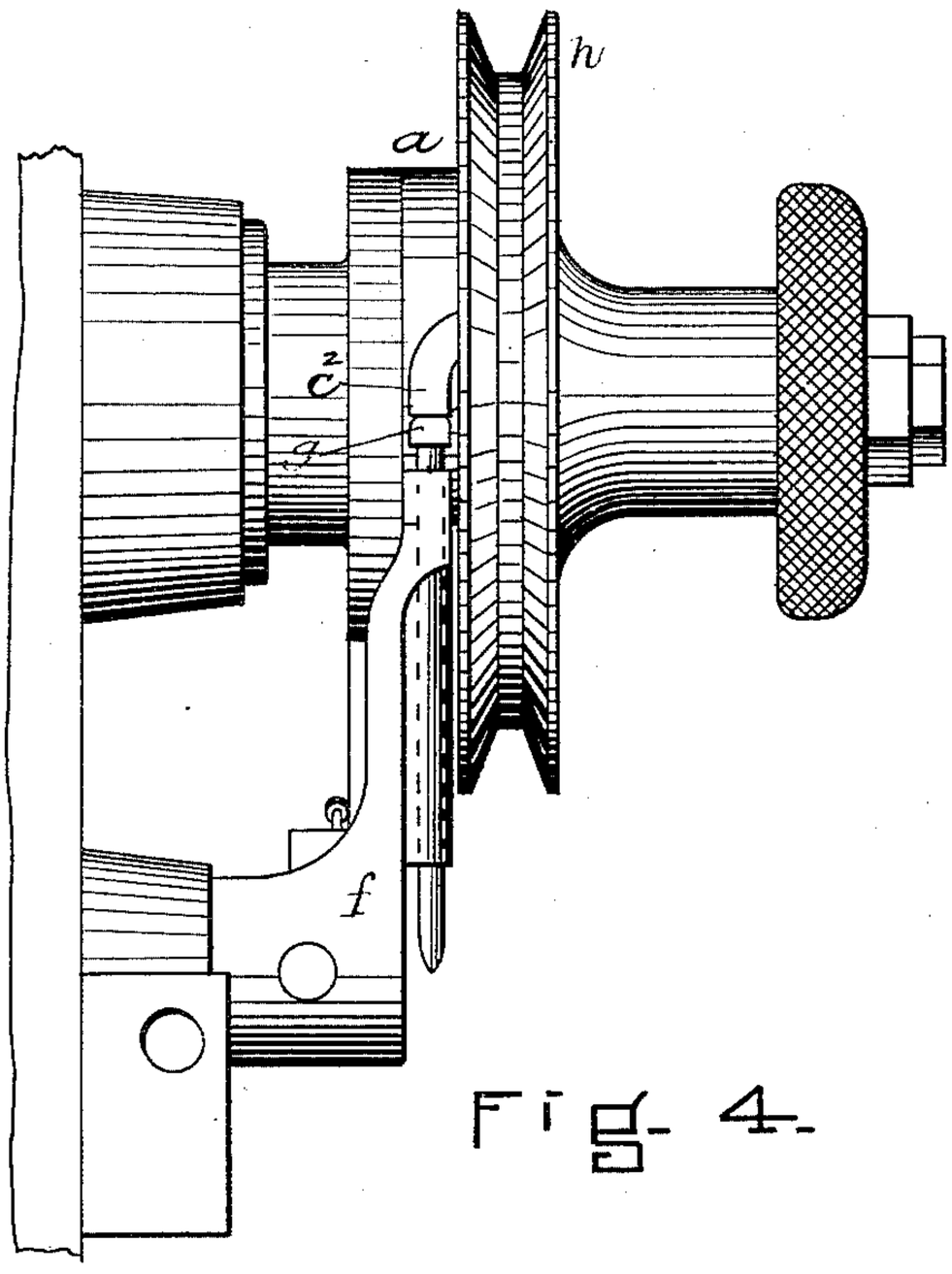

Fig. 4.

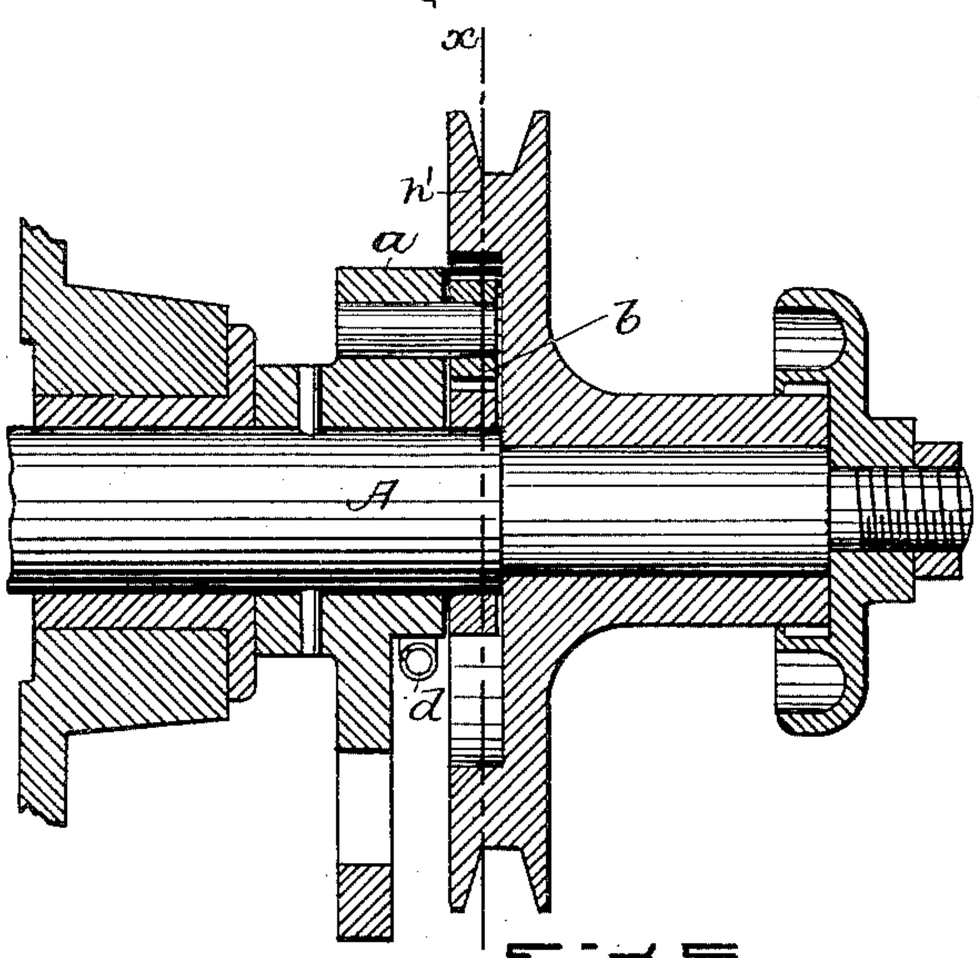

Fig. 5.

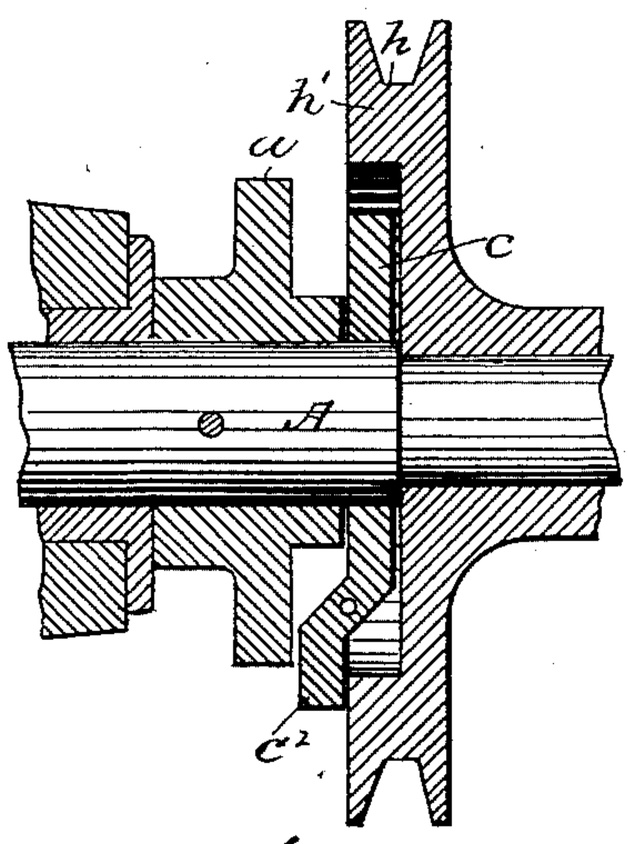

Fig. 6.

WITNESSES.

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MECHANISM FOR OPERATING BUTTON HOLE STITCHING MACHINES.

No. 450,841. Patented Apr. 21, 1891.

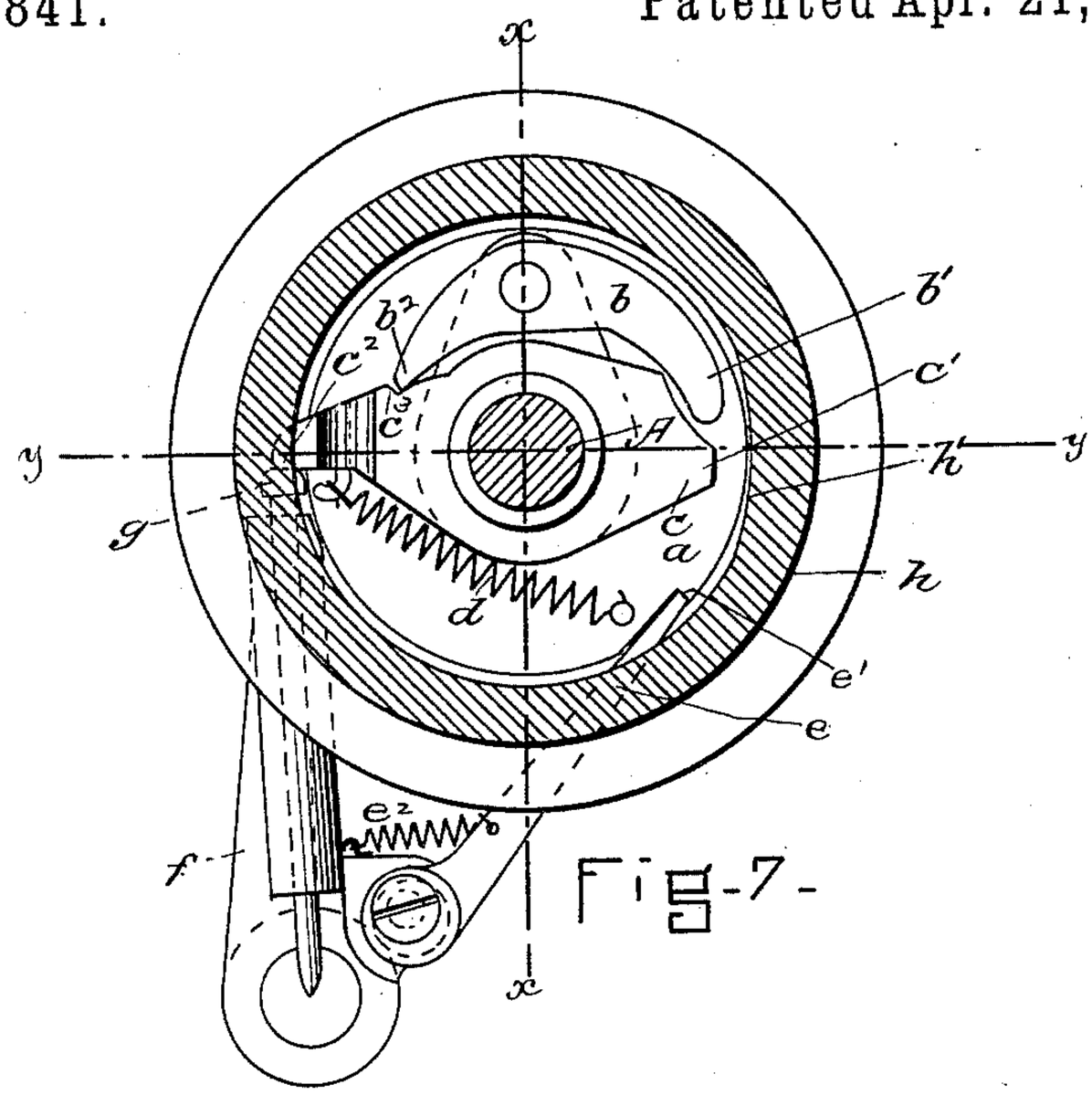

Fig-7-

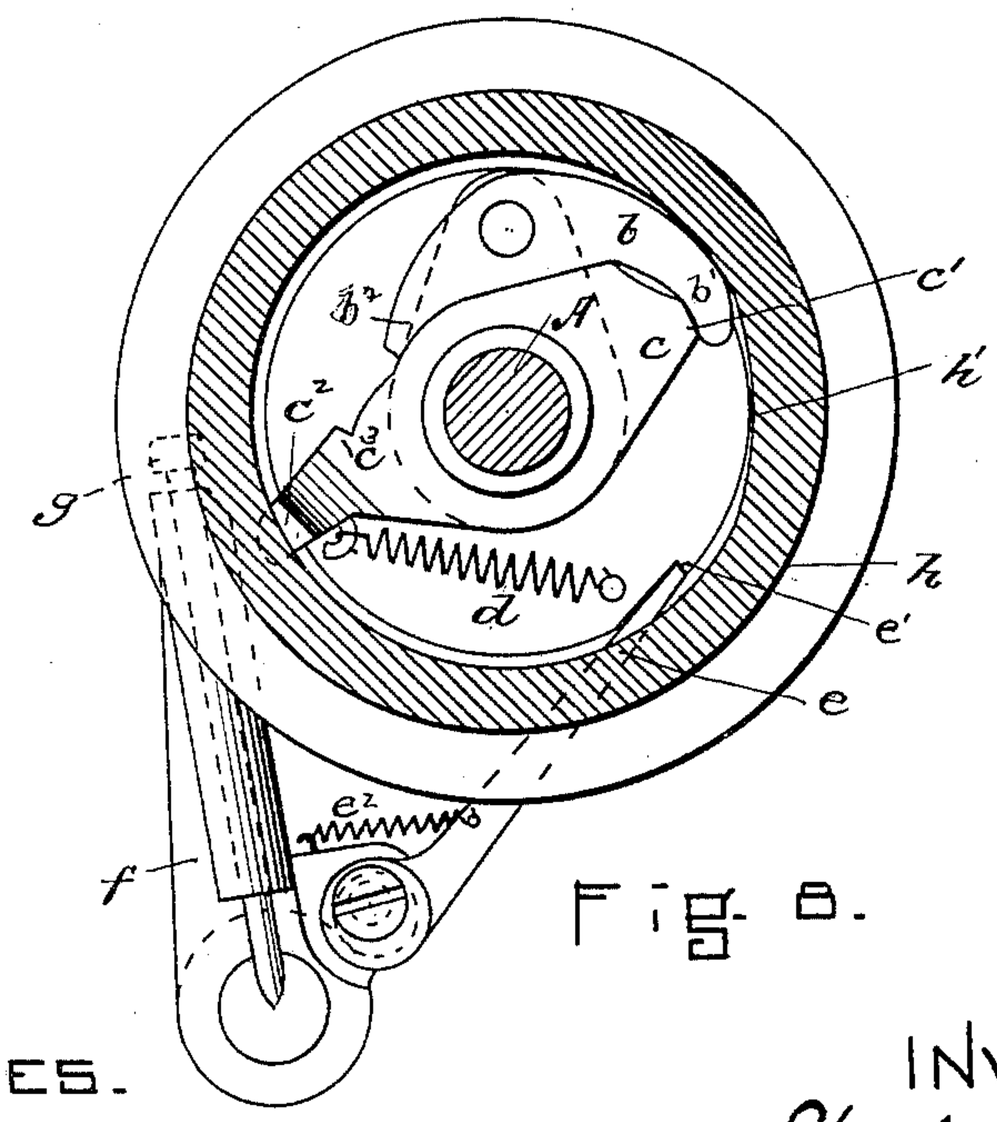

Fig. 8.

WITNESSES.

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UNITED STATES PATENT OFFICE.

CHARLES AXEL DAHL, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE GLOBE BUTTONHOLE SEWING MACHINE COMPANY, OF KITTERY, MAINE.

MECHANISM FOR OPERATING BUTTON-HOLE-STITCHING MACHINES.

SPECIFICATION forming part of Letters Patent No. 450,841, dated April 21, 1891.

Application filed August 11, 1890. Serial No. 361,643. (No model.)

To all whom it may concern:

Be it known that I, CHARLES AXEL DAHL, a subject of Oscar II, King of Sweden, now residing in the city of Lynn, in the county of Essex and State of Massachusetts, have made a new and useful Improvement in Mechanism for Operating Button-Hole-Stitching Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates especially to the stopping mechanism of the machine and to the treadle.

Referring to the drawings, Figure 1 is a view in end elevation of the machine to illustrate especially the treadle mechanism and its connections. Fig. 2 is a view principally a section and elevation of the treadle mechanism upon and beyond the dotted line *y y* of Fig. 3. Fig. 3 is a plan view of the treadle mechanism. Fig. 4 is a view enlarged to represent a portion of the stop mechanism. Fig. 5 is a sectional view upon the dotted line *x x* of Fig. 7. Fig. 6 is a section upon the line *y y* of Fig. 7. Figs. 7 and 8 are sectional views of the wheel on line *x x*, Fig. 5, the clutching devices being in elevation to further illustrate the construction and operation of the the stop mechanism.

A is the main shaft of the machine. Upon the said main shaft is mounted a stop-wheel *a*. There is pivoted to the stop-wheel a pawl *b* of peculiar shape. There is also upon the main shaft A a clutch-piece *c*, also of peculiar shape and having a limited movement thereon. It is moved in one direction by the spring *d*, that is in a position to cause the end *c'* of the clutch-piece to act against the end *b'* of the pawl and move it outward and hold it outward, as represented in Fig. 8.

It will be understood that the clutch-piece *c* and pawl *b* are within a recess in the belt-wheel *h*, which is annular, excepting upon the side *h'*, which projects inward from the circle of the remainder of the wall of the recess. It therefore follows that when the clutch-piece *c* has been moved sufficiently to move outward the end *b'* of the pawl *b*, the end of the pawl is brought into the path of the section *h'* of the belt-wheel and is wedged or clamped between it and the clutch-piece, thereby communicating the movement of the belt-wheel to the main shaft of the machine.

To stop the machine it is necessary to disengage the clutch-piece *c* from the pawl *b*, and this action is obtained by means of the stop-lever pawl *f*, which carries the lever-pin *g*. The pawl being moved into the path of rotation of the end c^2 of the clutch-piece, it holds the latter stationary and disengages the end *c'* of the clutch-piece from the end *b'* of the pawl, so that it is no longer clamped between the face *h'* of the belt-wheel and the clutch-piece, and the belt-wheel is thus disengaged and is free, continuing its movement, but imparting none to the main shaft. A notch c^3 on the clutch comes in contact with the arm b^2 of the pawl at this instant, as represented in Fig. 7.

To prevent the stop-wheel from rebounding, there is formed in its edge a notch *e'*, with which the stop-pawl *e* is brought into contact by the spring e^2.

In operation, the stop-lever *f* being moved outward, the spring *d* draws the clutch-piece *c*, moving the pawl *b* outward against the inner face of the belt-wheel *h*, as represented in Fig. 8. When the stop-lever *f* is moved inward, the clutch-piece *c* strikes against the stop-lever pin *g*, and the rotation of the stop-wheel *a* brings the clutch-piece back to its first position, at the same time releasing the pawl *b* from its contact with the projection *h'* of the belt-wheel, the stop-lever pawl *e* at the same time falling into the recess *e'*, thereby preventing the stop-wheel *a* from rebounding.

M is the driven pulley of a treadle mechanism. It is driven by a belt *m*. It is mounted upon a shaft *m'*, upon which are the two pulleys m^2 m^3. The pulley m^2 is connected with belt-wheel *l* by means of a belt *n*, and the pulley m^3 is connected with the belt-wheel *h* by the belt m^5. The shaft *m'* is mounted on arms or brackets m^6, extending upward from the foot-plate or treadle-lever m^9, said arms or brackets being cast integral with or attached to said treadle-lever and the latter being pivoted at m^8 to a stand m^7. A latch m^{10} is arranged to engage the treadle

automatically when the latter is depressed, a spring m^{11} serving to engage said latch with said treadle and to hold it in engagement therewith. A bracket m^{12} bears a frictional surface m^{13}, preferably of rubber or leather, which is arranged to bear against the brake-wheel m^{14} when the treadle or plate is released and the spring m^{15} allowed to act to move the shaft m' and pulleys thereon toward the brake. In other words, the brake is stationary and the stop-wheel is movable toward it with the shaft upon which it is mounted.

In Fig. 2 the device is shown with the treadle in operative position. When the operator desires to stop the power, he pushes the stop-catch by his foot from engagement with the treadle. The spring m^{15} and the strain of the main belt m, running from main shaft-pulley to the driving-pulley M, operate to draw the shaft m' and pulleys and belt-wheel backward, the brackets m^6 and treadle moving on their fulcrum m^8. This movement brings the brake-wheel into contact with the brake. The main belt then hangs loose on the pulley M, which is at rest.

In starting the power the foot plate or treadle is moved downward sufficiently to allow the latch to close upon it and hold it down. The stand preferably is fastened to the floor.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a machine of the character specified, the stopping device comprising a clutch-piece c, shaped as described, a pawl b, pivoted and shaped as specified, the belt-wheel h, having the surface h', shaped as specified, and the spring d, substantially as described.

2. The combination of the clutch-piece c, shaped and secured to the shaft as specified, the pawl b, shaped as specified, the belt-wheel h, having the projection h', and the stop-lever f and spring d, substantially as described.

3. The combination of the wheel a, having the stop-notch e', the clutch-piece c, pawl b, belt-wheel h, having the surface h', stop-lever f, and stop-lever pawl e, substantially as described.

4. In a machine of the character specified, the treadle-shaft m', mounted upon the pivoted supports or brackets m^6, connected with the treadle-lever, the pulleys carried by said shaft, and the latch for locking the treadle in operative position, as and for the purposes described.

5. The combination of the swinging shaft carrying the pulleys and brake-wheel, a lever or treadle for moving the same, a latch for locking the treadle, and a spring for moving the swinging shaft to bring the brake-wheel in contact with the stationary brake and to release the tension of the driving-belt, substantially as described.

CHARLES AXEL DAHL.

Witnesses:
ARTHUR SIBLEY,
ELIZABETH ALFORD.

Correction in Letters Patent No. 450,841.

It is hereby certified that the name of the assignee in Letters Patent No. 450,841, granted April 21, 1891, upon the application of Charles Axel Dahl, of Lynn, Massachusetts, for an improvement in "Mechanism for Operating Button-Hole Stitching Machines," was erroneously written and printed "Globe Button Hole Sewing Machine Company," whereas said name should have been written and printed *Globe Button-Hole Machine Company;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 5th day of May, A. D. 1891.

[SEAL.]

CYRUS BUSSEY,
Assistant Secretary of the Interior.

Countersigned:

C. E. MITCHELL,
Commissioner of Patents.