

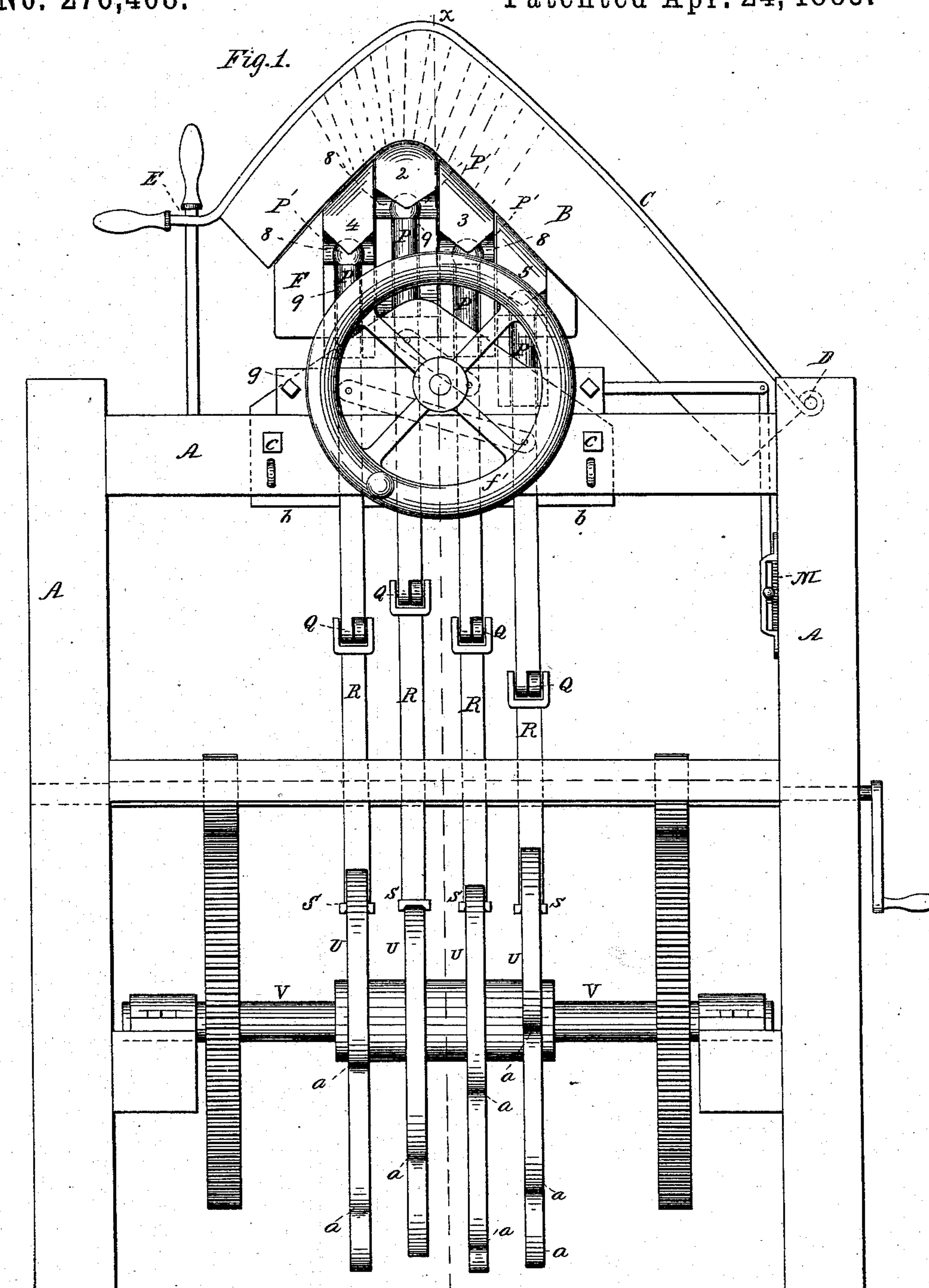
(No Model.)

3 Sheets—Sheet 1.

J. HOLMES.
CRIMPING MACHINE.

No. 276,408.

Patented Apr. 24, 1883.



Witnesses:
W. C. Jordan
Fred B. Leitch

Inventor:
Jesse Holmes
by Wright & Brown
his Attorneys.

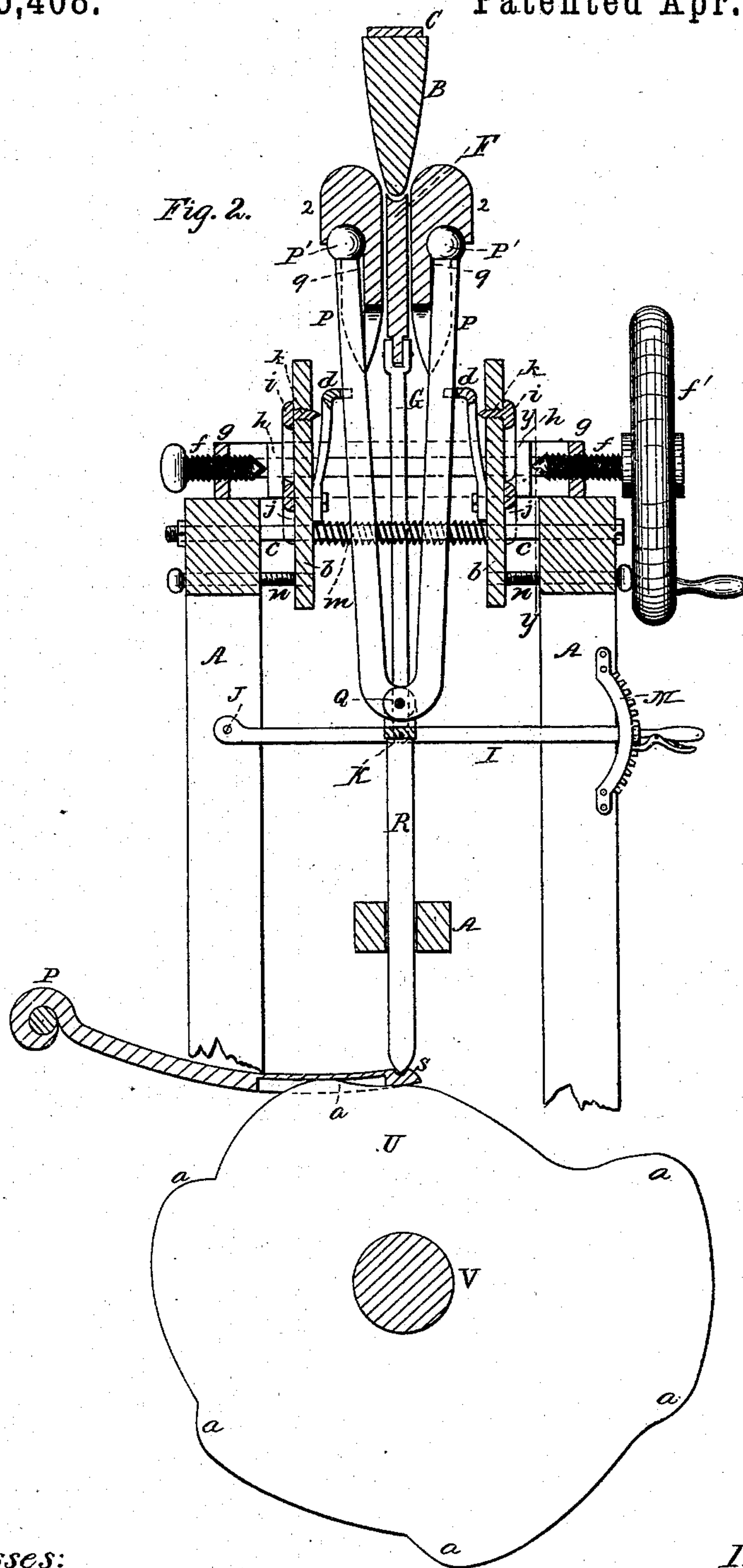
(No Model.)

3 Sheets—Sheet 2.

J. HOLMES.
CRIMPING MACHINE.

No. 276,408.

Patented Apr. 24, 1883.



Witnesses:
W. C. Jordinston
Fred A. Lehigh

Inventor:
Jesse Holmes
by
Wright & Brown
his Attorneys.

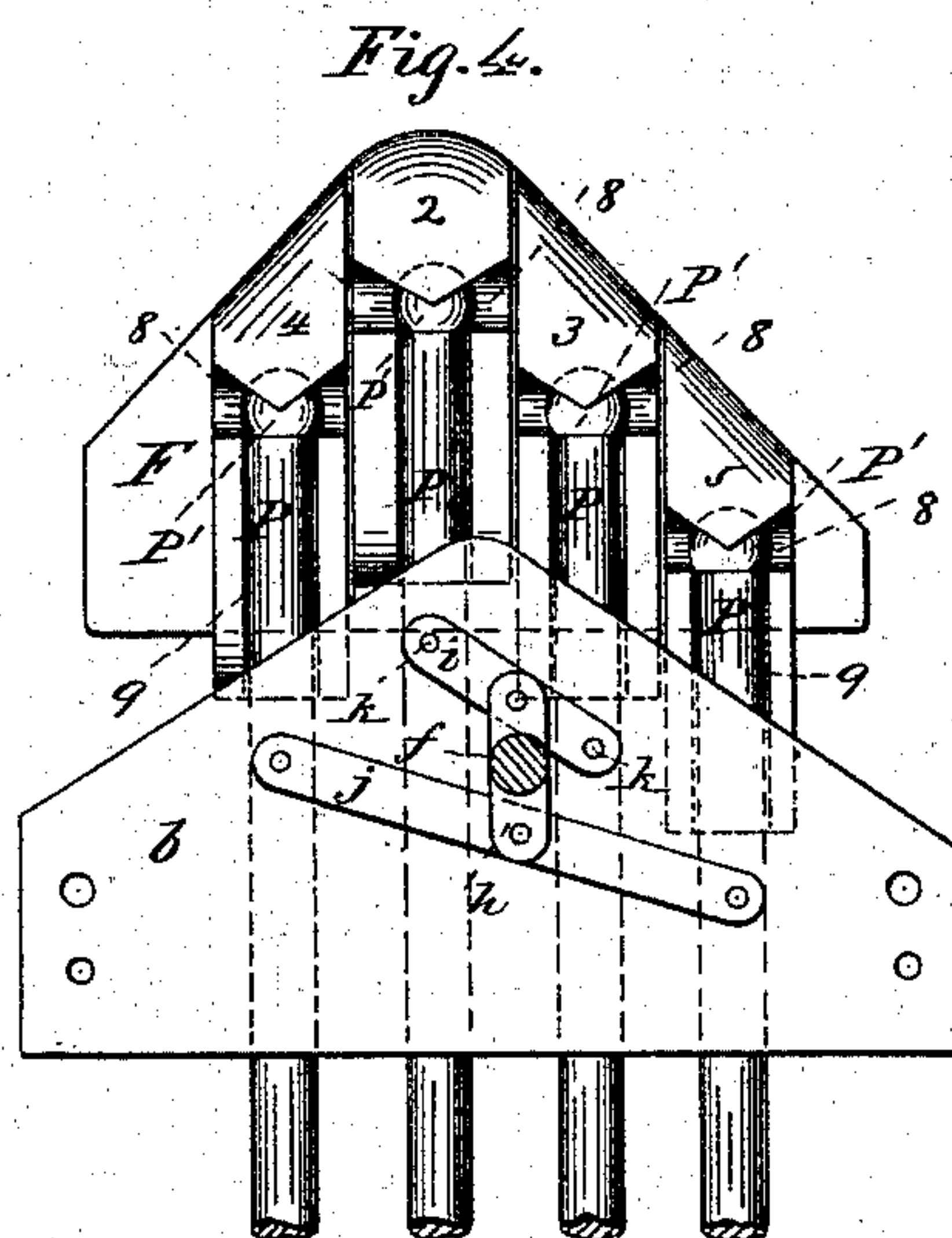
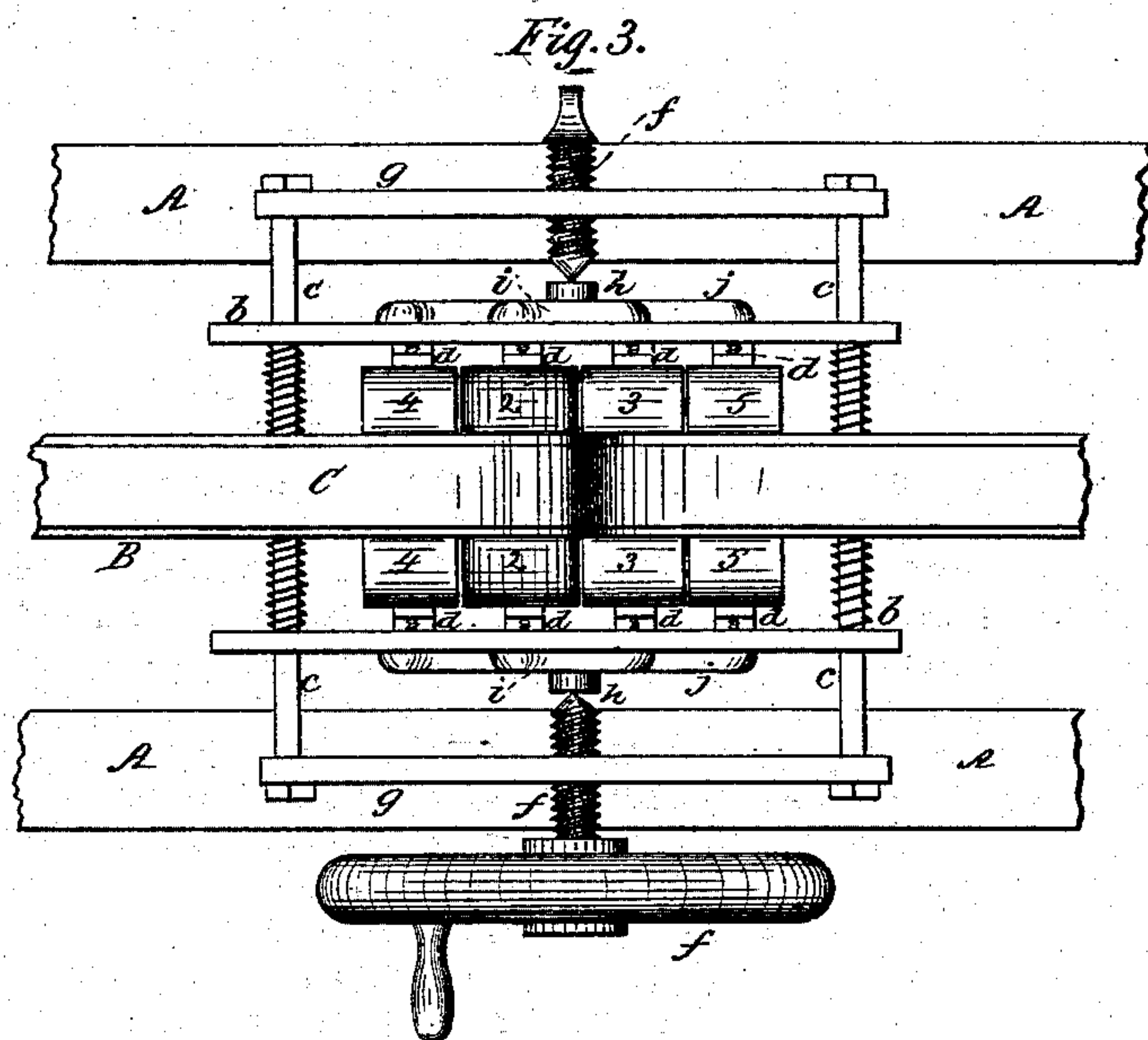
(No Model.)

3 Sheets—Sheet 3.

J. HOLMES.
CRIMPING MACHINE.

No. 276,408.

Patented Apr. 24, 1883.



Witnesses:
W. C. Lindquist.
Fred B. Church.

Inventor:
Jesse Holmes
by
Knight & Brown
his Attorneys.

UNITED STATES PATENT OFFICE.

JESSE HOLMES, OF STOUGHTON, MASSACHUSETTS.

CRIMPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 276,408, dated April 24, 1883.

Application filed February 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, JESSE HOLMES, of Stoughton, in the county of Norfolk and State of Massachusetts, have invented certain Improvements in Crimping-Machines, of which the following is a specification.

This invention relates to that class of leather-crimping machines having a stationary form and movable jaws at opposite sides of the form, said jaws bearing with a yielding pressure against the form and being moved over the same, so as to rub and stretch the leather upon the form.

Heretofore there have been but two jaws, one on each side of the form.

My invention consists, mainly, in dividing the jaws into sections, and in providing automatic means for moving each section independently and at different times from the adjacent section or sections in the same jaw, thereby rubbing and stretching the leather successively at different points distributed along the form, instead of stretching it simultaneously along the entire form.

My invention also consists in the provision of a clamping-plate to hold the leather against the curved edge of the form for the action of the sectional jaws, in the provision of means for varying the degree of pressure of the sectional jaws on the form, and in certain details of construction, all of which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a machine embodying my invention. Fig. 2 represents a section on line *x x*, Fig. 1. Fig. 3 represents a top view. Fig. 4 represents a section on line *y y*, Fig. 2.

The same letters of reference indicate the same parts in all the figures.

In the drawings, A represents the framework of the machine, and B represents the crimping-form, which is in this instance the usual form used for crimping boot-uppers. The form is held in place against upward pressure by a bent bar, C, pivoted at D to the frame A, and engaged at its swinging end with a suitable latch or catch, E, the bar C being shaped to fit the back of the form. When the bar C is released from the catch E it can be swung upwardly, and the form can

then be removed. The curved lower edge of the form rests on the correspondingly curved edge of a clamping-plate, F, which is vertically movable, and is pressed upwardly against the form by any suitable means, so as to clamp the leather to be crimped tightly against the form. In the present instance I have shown as a means for pressing the plate F upwardly a lever, G, pivoted to the lower portion of said plate, and having one of the rods *c* for its fulcrum, and a lever, I, pivoted at J to the frame A, and connected by a link, K, with the lever G. The lever I has a spring bolt or dog adapted to engage with one of several notches in a segment, M, attached to the frame A, and thus lock the lever I and cause it to support the lever G and plate F at any point to which they may be adjusted. The plate F is thus enabled to be adjusted vertically, so as to fit different-sized forms.

I do not limit myself to the means described for adjusting the plate F, as other devices may be employed without departing from the spirit of my invention.

As heretofore in machines of this class, I provide crimping-jaws at the opposite sides of the form. Instead of providing a single or continuous jaw at each side of the form, I provide a series of jaws or sections of jaws, 2 3 4 5, of any desired number, four being preferred. Each jaw or section is connected with the corresponding jaw or section at the opposite side of the form by two standards, P P, which are pivoted at Q to a standard, R, common to both, the last-named standard being adapted to move vertically in guides in the frame A. The standards P P have balls P' P' at their upper ends, and the jaws have sockets in their outer sides receiving said balls, the jaws being adapted to rock on the balls so as to assume various inclinations, and thus conform to different inclinations of the sides of the form. The standards R rest on levers or steps S, which are pivoted at T to the frame A and bear upon cams U, affixed to a shaft, V, journaled in bearings in the frame A, and rotated by any suitable means. The periphery of each cam U is composed of a series of steps, *a*, of any desired number, and at regularly increasing distances from the center of the shaft V, so that during each complete rotation of the cam in the direc-

tion indicated by the arrow in Fig. 2 the lever S, resting on the cam, the standard R, resting on the lever, and the pair of jaws supported by the standard will be raised intermittently as many times as there are steps *a* on the cam. The cams U are differently arranged on the shaft, so that each pair of jaws will be moved at different times from the adjoining jaw or jaws. For example, supposing all the jaws to be in their lowest position, the pair of jaws 2 2 will be raised first a single step, then the jaws 3 3, then the jaws 4 4, and finally the jaws 5 5. The jaws 2 2 are then raised another step, and are followed in the same order by the other jaws, and so on until all the jaws have reached the upper edge of the form and completed the stretching of the leather. This series of operations constitutes an improved method, the essential features of which are, stretching the leather partly across the form simultaneously from both sides of its central line by successive operations performed at different points along the length of the form until the leather is stretched partly across the form from end to end of the latter, and then repeating said operations at points successively farther from the center of the form until the leather is entirely stretched across the form, each pair of jaws operating on an ideal cross-section of the leather and holding the leather at the successive points to which they stretch it. By this method of stretching better results are produced than by stretching simultaneously along the entire length of the form, the leather being stretched more nearly crosswise of the sides of the form, as indicated by the dotted lines shown on the form in Fig. 1, than would be the case if a single jaw of a length equal to the aggregate length of the sectional jaws were employed at each side of the form, and the crimped leather is less liable to lose the shape imparted to it by the crimping operation.

It will be observed that the standards P P, being pivoted to their common support R, are adapted to swing so as to vary the distance between the jaws which they support, and thus enable said jaws to conform to the varying thickness of the form. The standards are supported or backed by devices for holding each jaw against the form with a yielding pressure, and varying the degree of said pressure as well as the distance between the jaws of each pair. Said devices may be variously modified in construction. In the present instance I have shown them as composed of a pair of plates, *b b*, supported on fixed rods *c c*, attached to the frame A; notched lugs or arms *d d*, attached to said plates, and bearing at their notched ends against the outer sides of the standards P P; screws *f f*, working in a frame, *g*, resting on the frame A, and pressure-bars *h i j*, interposed between the screws *f f* and the lugs *d*, for the purpose of communicating to the said lugs the movable pressure of the screws *f f*. The bars *h h* receive the di-

rect bearing of the screws *f f* and bear against the bars *i j i j*. The bars *i i* are provided with pins *k*, passing through holes in the plates *b*, each bar having two pins arranged to bear on two standards P. The bars *j j* are each provided with two pins bearing on the other two standards P. It will be seen, therefore, that an equal pressure is exerted on each standard P, and that said pressure can be varied at will by rotating either of the screws *f f*, one of said screws having a crank or hand wheel, *f'*, to enable it to be conveniently rotated. The frame *g*, supporting the screws *f f*, rests loosely on the frame A, so that it can move laterally. Hence when only one of the screws *f* is adjusted the frame *g* is moved laterally, and not the standards P P, and there is no tendency to lateral displacement of said standards and their jaws, as there would be when only one screw was adjusted, if the screws *f* worked in sockets rigidly attached to the frame A. The plates *b b* are normally pressed apart at their lower ends by springs *m*, placed upon the rods *c*, and the pressure of said springs is opposed by set-screws *n n* in the frame A. When it is necessary to effect a considerable adjustment of the jaws toward or from each other, the distance between the plates *b b* may be correspondingly adjusted by said set-screws, which constitute fulcrums on which the plates swing when the screws *f f*, or either of them, is adjusted.

The jaws are made of any suitable metal, and the sockets in them for the reception of the standards P P are preferably made by forming a horizontal groove, 8, in the back of each jaw of sufficient size to receive the ball of the standard, and a vertical groove, 9, from the groove 8 to the lower end of the jaw, to receive the standard P below the ball. This construction enables each jaw to turn horizontally on its standard to vary the horizontal inclination of its rubbing-surface, as well as vertically to vary the vertical inclination of said surface.

In operating this machine the operator secures the leather between the form and the edge of the clamping-plate, and then sets the jaws in motion, as above described, increasing the distance between the opposite jaws by the screw *i* as they rise to the thicker portions of the form. When the leather has been sufficiently stretched and crimped, its edges are tacked to the back of the form, and the latter is removed from the machine and another substituted for it, the same operation being then repeated. It will be seen that the independently-moving sectional jaws may be operated by a much less expenditure of power than a single pair of elongated jaws, such as have been heretofore used.

I claim—

1. The method herein described of crimping leather on a form, the same consisting in stretching the leather partly across the form simultaneously from both sides of its central line, by successive operations performed at

different points along the length of the form, until the leather is stretched partly across the form from end to end of the latter, and then repeating said operations at points successively farther from the center of the form until the leather is entirely stretched across the form, the leather being held at each point to which it is stretched by the rubbing-surface that stretched it, as set forth.

2. In a crimping-machine, the combination of a form, a series of pairs of movable jaws, all adapted to bear at the same time against the form, and mechanism, substantially as described, for moving said jaws successively upon the form, as set forth.

3. In a crimping-machine, the combination of a form with a series of pairs of movable pivoted jaws, all adapted to bear at the same time against the form, and means, substantially as described, for simultaneously adjusting all the jaws to regulate their pressure, and to adapt them to the varying thickness of the form, as set forth.

4. The combination of the form, the jaws, and the clamping-plate adapted to hold the leather against the form for the action of said jaws, as set forth.

5. The combination, with a pair of socketed jaws, of the pivoted standards P P, supporting said jaws, the standard R, supporting the pivoted standards, the step S, supporting the standard R, and the cam U, supporting the step S, as set forth.

6. The combination, with the standards P P, of the jaws having sockets, formed substantially as described, to turn horizontally and vertically on said standards, as set forth.

7. The combination, with the pairs of jaws, their supporting-standards P, and means for raising the same, as described, of the pressure-lugs *d d*, bearing against the standards P, the pressure-regulating screw or screws *f*, supported in a loose frame, and the intermediate pressure-bars, whereby the pressure of the screw or screws *f* is equally distributed among the standards P, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 19th day of January, 1883.

JESSE HOLMES.

Witnesses:

C. F. BROWN,
A. L. WHITE.