

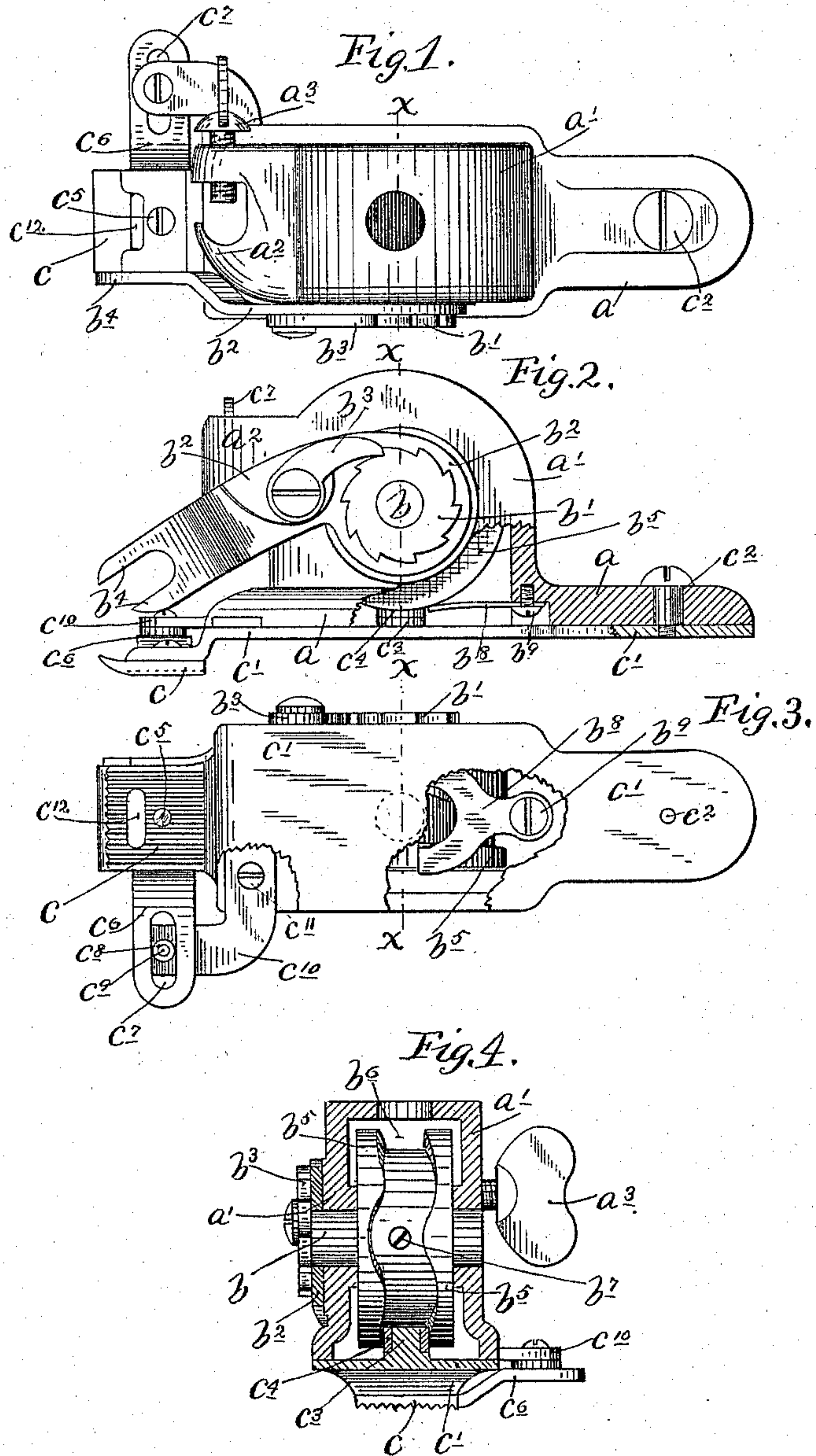
(No Model.)

J. D. SCHOONMAKER.

WORK MOVING ATTACHMENT FOR SEWING MACHINES.

No. 571,459.

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Witnesses:
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WORK-MOVING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 571,459, dated November 17, 1896.

Application filed January 22, 1894. Serial No. 497,739. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. SCHOONMAKER, a citizen of the United States, and a resident of the city of Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Work-Moving Attachments for Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the said invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings.

My invention has for its object to provide an attachment for sewing-machines which shall be adapted for overcasting the edges of cloth of any kind and for making zigzag stitches, such as are suitable for various kinds of fancy work.

To this end my invention consists in certain novel devices and combinations of devices which will be hereinafter fully described and be defined in the claims.

The accompanying drawings illustrate my device, wherein, like letters referring to like parts—

Figure 1 is a plan view of the device. Fig. 2 is a side elevation of the same with some parts broken away. Fig. 3 is a bottom or underneath plan view with some parts broken away; and Fig. 4 is a vertical section on the line $x x$ of Figs. 1, 2, and 3, looking from the right toward the left when the device is right side up.

a a' a^2 represent, respectively, the bed portion of the frame, a casing formed integral with the bed for inclosing the cam-wheel, and a pair of jaws formed integral with the casing and provided with a thumb-screw a^3 for clamping the device to the presser-foot bar of the sewing-machine. In the casing a' is mounted a shaft b , one end of which projects beyond the casing and is provided with a ratchet b' . On the said shaft b , between the casing a' and the ratchet-wheel b' , is loosely pivoted a lever b^2 , having a spring-held pawl b^3 in engagement with said ratchet-wheel and provided at its forward end with a pair of jaws b^4 , adapted to engage over the set-screw, which secures the needle to the needle-bar, and be thereby secured to the needle-bar, so

as to move up and down therewith. Under this rocking motion of the lever b^2 , as operated by the needle-bar, the pawl b^3 and the ratchet b' will impart a rotary motion step by step to the shaft b .

On the shaft b is mounted within the casing a' a cam-wheel b^5 , which is provided with a peripheral cam-channel b^6 and is made fast to the shaft b by set-screw b^7 or in any other suitable way.

A serrated cloth-clamp c is pivotally secured to the forward end of a pivoted plate or bar c' , which is pivotally secured to the rear end of the bed-plate a by a shouldered set-screw c^2 or in any other suitable way. The pivoted bar c' is provided with a stud c^3 , which is fitted with an antifriction-roller c^4 in engagement with the cam-channel b^6 of the cam-wheel b^5 from below. Hence under the rotary motion of the cam-wheel b^5 the pivoted or vibrating plate c' and the cloth-clamp c , carried thereby, will receive an oscillatory or lateral swinging motion in the horizontal plane.

A two-pronged flat spring b^8 is secured to the frame a a' by a set-screw b^9 or otherwise, and the prongs of the same bear on the cam-wheel b^5 and operate as a check-brake to prevent the said cam-wheel from being turned backward on the downstroke of the pawl-bearing lever b^2 .

The cloth-clamp c is pivoted to the vibrating plate c' by set-screw c^5 or in any other suitable way and is provided with an arm c^6 , having a slot c^7 , which is engaged by a roller c^8 on a stud c^9 , fixed to an angular arm c^{10} . The arm c^{10} is rigidly secured to the forward end of the bed-plate a by means of a set-screw c^{11} or in any other suitable way. The cloth-clamp c is provided with a needle-slot c^{12} of the proper dimensions to permit the necessary play of the cloth-clamp in respect to the needle. In applying this device the ordinary presser-foot is first removed, and this device is secured to the presser-foot bar by the jaws a^2 and the thumb-screw a^3 . The lever b^2 is then also secured to the needle-bar in the manner above noted. The sewing-machine feed is not covered, but is used in cooperation with the cloth-clamp c , which re-

places the ordinary presser-foot. It should be noted that the cloth-clamp *c* is serrated or provided on its under surface with smooth unbroken corrugations running longitudinally with the feed of the machine, in virtue of which the cloth may be freely fed under the action of the machine feed, while under the crosswise vibrations of the cloth-clamp the cloth may be shifted to and fro. Under the vibrating motion of the plate *c'* the cloth-clamp *c* will also receive a laterally-swinging or oscillatory motion, and may have also a slight pivotal motion in respect to the vibrating plate *c'* in virtue of the connections *c*⁵ and *c*⁹.

Without the above connections *c*⁵ *c*⁷ *c*⁸, as is obvious, the longitudinal corrugations of the cloth-clamp *c* would be vibrated on the lines of radii diverging from the pivot *c*² of the plate *c'*, and hence would be moved at an angle to the line of the feed of the machine; but with the above construction the said pivot *c*⁵ serves to permit pivotal movement of said clamp *c* on the plate *c'*, while the slot-and-roller connection *c*⁷ *c*⁸ holds said clamp *c* throughout its vibratory movements parallel with the line of the feed of the machine.

The sewing-machine feed would of course, if uninterrupted, move the cloth in a straight line in the usual way; but as the cloth is at the same time subject to the vibrating and pivotal motion of the cloth-clamp *c* the combined result on the cloth will be to move the same in respect to the needle in such a manner as to overcast the edge of the cloth or to produce a zigzag stitch on the face of the cloth. In order to produce the zigzag stitch, the sewing-machine feed must be set for a large stitch and the thread must be held under a loose tension only.

It will of course be understood that some

of the details might be changed without departing from the spirit of my invention.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a sewing-machine attachment, for zigzag stitching, the combination with a rotary cam-wheel, receiving motion from the needle-bar, of a pivoted plate subject to the action of said cam-wheel, and a cloth-clamp pivoted to said pivot-plate, for lateral pivotal motion thereon, and having a slotted arm engaging a stud supported in a fixed position from the frame of the device, whereby said cloth-clamp will be held to a true line with the feed of the machine, under the pivotal movement of its carrying-plate, substantially as described.

2. The attachment, comprising the frame *a* *a'* *a*² securable to the presser-foot bar, with the part *a'*, arranged to form a casing, the shaft *b* journaled in said casing and provided with the cam-wheel *b*⁵, fixed to said shaft, and having the peripheral cam-channel *b*⁶, the ratchet-wheel *b*⁷ on said shaft, the lever *b*² pivoted on said shaft and provided with the spring-held pawl *b*³, engaging said ratchet, and having the jaws *b*⁴, for attachment to the needle-bar, the plate *c'* having its rear end pivoted to the bed *a* and provided with the stud and roller engaging the cam-wheel channel *b*⁶, the cloth-clamp *c* pivoted to the vibrating plate *c'* and having the slotted arm *c*⁶ working over a stud on the fixed arm *c*¹⁰, all arranged and operating substantially as described.

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Witnesses:

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