

D. A. FLAVELL.
 WORK SUPPORTING MEANS FOR WIRE STITCHING OR STAPLING MACHINES.
 APPLICATION FILED SEPT. 15, 1920.

1,396,950.

Patented Nov. 15, 1921.

2 SHEETS—SHEET 1.

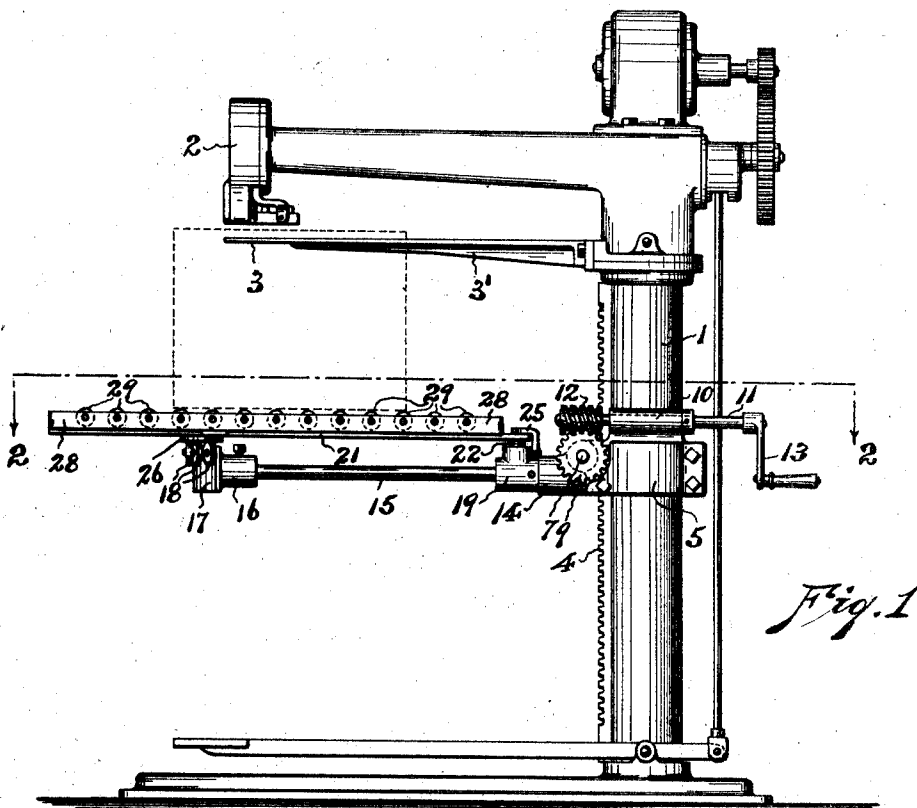


Fig. 1

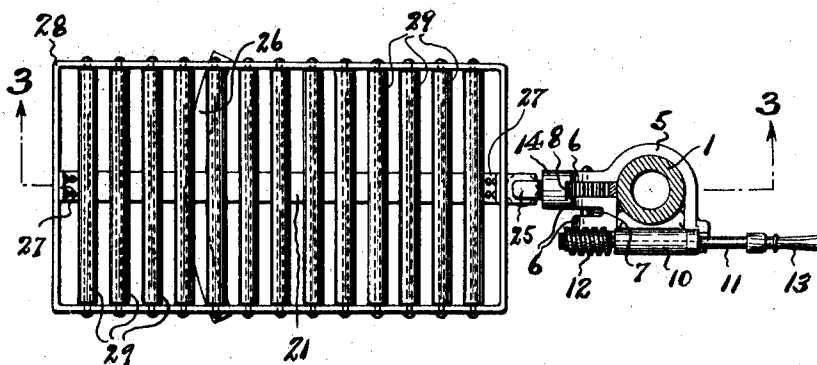


Fig. 2

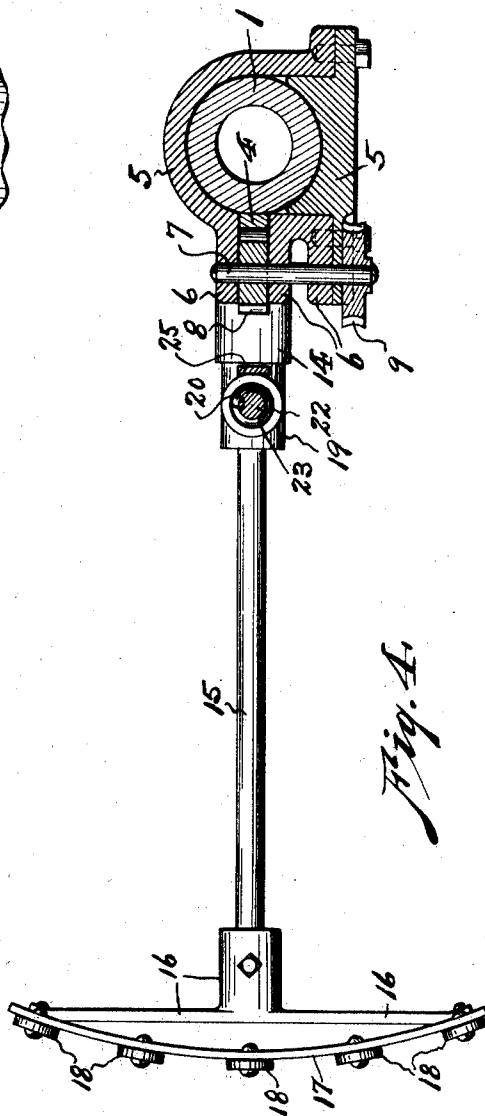
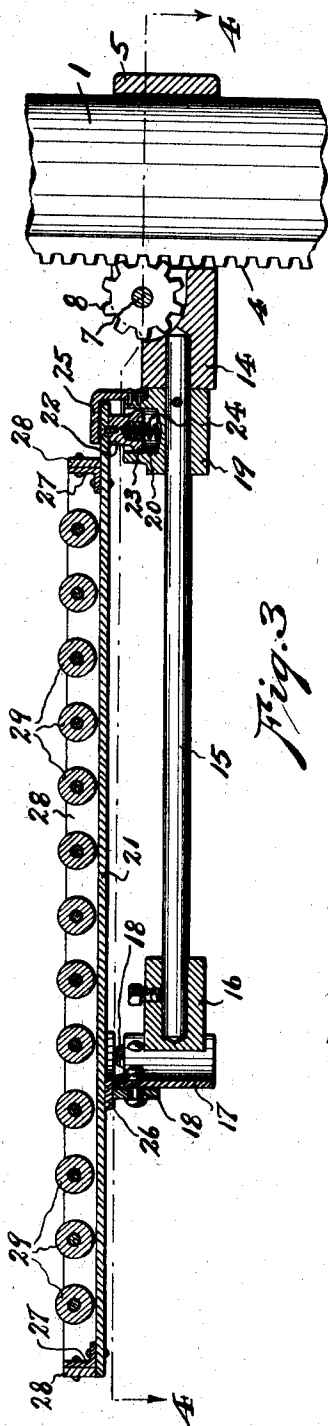
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UNITED STATES PATENT OFFICE.

DENIS A. FLAVELL, OF JERSEY CITY, NEW JERSEY.

WORK-SUPPORTING MEANS FOR WIRE STITCHING OR STAPLING MACHINES.

1,396,950.

Specification of Letters Patent.

Patented Nov. 15, 1921.

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To all whom it may concern:

Be it known that I, DENIS A. FLAVELL, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Work-Supporting Means for Wire Stitching or Stapling Machines; and I do hereby declare the following to be a full, clear, and exact description of the 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, and to characters of reference marked thereon, which form a part of this specification.

The present invention relates to work supporting means for use with wire stitching or stapling machines; and the invention has reference, more particularly, to a novel construction of supporting means for operatively presenting to the stitching or stapling head and the associated anvil of a wire stitching or stapling machine, the closing flaps of fiber containers or boxes so that the same may be adequately fastened together by the wire stitches or metallic staples formed and driven into place by the machine.

The invention has for its principal object to provide a novel construction of work supporting means for the purposes above mentioned, which will so support the box or container to be operated upon that the same, when filled with its desired content, may be readily moved relative to the stitching or stapling head and the anvil of the machine to properly present the different points of the closing flaps of the same for the reception of the fastening stitches or staples.

Other objects of the invention, not here more particularly enumerated, will be clearly understood from the following detailed description of the same.

With the various objects of the invention in view, the same consists, primarily, in the novel work supporting means for wire stitching or stapling machines hereinafter set forth; and the invention consists, furthermore, in the novel arrangements and combinations of the various devices and parts, as well as in the details of the construc-

tion thereof, all of which will be hereinafter more fully described and claimed.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of a wire stitching or stapling machine equipped with the novel work supporting means made according to and embodying the principles of the present invention; Fig. 2 is a horizontal section, taken on line 2—2 in said Fig. 1; Fig. 3 is a detail vertical longitudinal section taken on line 3—3 in said Fig. 2, but drawn on an enlarged scale; and Fig. 4 is a detail horizontal section, taken on line 4—4 in said Fig. 3.

Similar characters of reference are employed in all of the hereinabove described views, to indicate corresponding parts.

Referring now to said drawings, the reference-character 1 indicates the supporting column or pedestal of the wire stitching or stapling machine, which carries the stitching or stapling head 2 and associated anvil arm 3, all of which is known in the art.

My novel work supporting means is preferably mounted for vertical adjustment upon said column 1 so as to extend beneath the head 2 and anvil arm 3. To this end the forward side of said column is provided with a vertical toothed rack 4, and slidably mounted on said column 1 is a yoke device 5 provided with suitable bearing projections 6 for journaling a transverse shaft 7. Secured on said shaft 7, so as to operatively mesh with said rack 4 is a pinion 8, while the outer end of said shaft 7 carries a worm gear 9. Connected with one side of said yoke 5 is a longitudinal bearing member 10 in which is journaled a shaft 11. Secured upon said shaft 11 is worm member 12 which meshes with and drives said worm gear 9, and the outer or rearward end of said shaft 11 is provided with a crank-handle 13 for rotating said shaft 11 and the worm member 12, whereby the shaft 7 is in turn rotated to cause the pinion 8 to travel either up or down upon the rack 4 so that the yoke is raised or lowered on the column 1 to raise or lower the work supporting means, which is carried by the yoke, relative to the head 2 and anvil 3 of the machine.

Said yoke 5 is provided at its forward side with a suitably located socketed projec-

tion 14 in which is secured the inner end of a forwardly extending carrier arm 15. Secured upon the free end of said carrier arm 15 is a transverse bracket 16, to the forward side of which is secured an outwardly bowed or arcuate plate 17. Mounted upon the face of said arcuate plate 17 are a plurality of spaced idler or tracker wheels 18, the peripheries of which project above the upper edge of said arcuate plate 17.

Secured upon said carrier arm 15, at its inner end and preferably abutting said socket projection 14, is a pivot block 19, provided in its upper portion with a seat or receiving socket 20.

The work supporting table proper comprises a longitudinal supporting bar 21, having at its inner end a downwardly projecting pivot stud 22, which enters said seat or receiving socket 20 of the pivot block 19, so as to swivel therein, thus permitting said supporting bar to swing from its inner end in a horizontal plane. In order to provide a limited vertical depression of the inner end of said supporting bar (for purposes subsequently to be disclosed), the pivot stud 22 is provided at its lower end, where engaged in the seat or receiving socket 20, with an annular enlargement 23, which engages the sides of the seat or receiving socket 20 to determine the pivotal or swiveling movement, while permitting the upper portion of the pivot stud 22 to be of reduced diameter relative to the diameter of said seat or socket 20 for transverse play therein. The inner end of said supporting bar is yieldably maintained in normal raised position by placing a compression spring 24 within said seat or socket 20 and in engaged relation with the lower or seated end of said pivot stud 22. The inner end of said supporting bar is maintained against displacement from its pivotal relation to the block 19 by a clip 25, which is secured to said block so that its free end is engaged over the inner end of the supporting bar 21. Secured to the underside of said supporting bar 21, toward its free end, is a curved tracker plate 26, which is supported upon and rides over, in either direction, said idler or tracker wheels 18, as the supporting bar is swung from side to side. Fastened upon said supporting bar by angle irons 27 is a rectangular frame 28, said angle irons having their ends respectively riveted or otherwise fastened to said supporting bar and frame. Mounted in said frame 28 are a series of longitudinally spaced transverse idler rollers 29, the upper sides of which project above the frame.

In operation, the work-supporting means functions as follows: The work-supporting means is adjusted vertically upon the column 1 to accommodate the same to the height of the container to be closed, by raising or

lowering the yoke 5 as may be necessary. The container to be operated upon is then deposited upon the platform comprised of the rectangular frame 28 and transverse rollers 29, so that the same may be supported for rearward and forward movement upon said transverse rollers 29. The container is moved rearward so that the anvil arm 3 may enter beneath the flaps of the same which are to be stitched or stapled to secure the same in closed position. The machine is then operated to drive into the flaps the sealing stitches or staples, in a manner familiar to those skilled in the art. In order to continue the stitching or staple driving operations along the meeting portions of the container flaps, the container is pushed rearward, the transverse rollers 29 permitting the container to be moved with ease to feed the same rearward relative to the head 2. Since the anvil arm 3 of most stapling or wire stitching machines is reinforced by a tapering or inclined web 3' extending along its under side, I have arranged the mounting of the frame 28 and its rollers 29 so that the inner end of the same will yield downwardly, or be depressed as the container moves rearward, thus preventing the web 3' from engaging the sides or contents of the container so as to obstruct the necessary rearward movement of the same, and to this end the pivoted end of the supporting bar 21 is depressible against the tension of the spring 24. If it is desired to staple or stitch the flaps of the container along their lateral edges, or if it is desired to carry the stitching or stapling operations laterally, the frame 28 with its rollers 29 may be swung to the left or right from the pivoted end of the supporting bar 21, so as to readily adjust the desired point between the head 2 and the anvil 3. It will thus be apparent that the container may be readily moved longitudinally backward and forward upon the frame 28 and its rollers 29, while lateral or side to side movements may be imparted to the container by swinging the frame 28 and its rollers sidewise in either direction, so that a composite movement may be given to the container to bring any point included within the area of the surface thereof which is operated upon into operative position between the head 2 and anvil 3. The lateral swinging movements of the frame 28 and rollers 29 are easily accomplished, notwithstanding the weight contained within the container, since the free or swinging end of the same is supported by the tracker wheels 18, so that the movement is easily effected with a minimum of frictional resistance.

It will be evident that my present invention, therefore, provides a very convenient and easily operated work supporting means for the purposes in view, which is comprised of comparatively few parts, thus rendering

the construction simple and little likely to become disarranged or inoperative, and which is, furthermore, adapted to permit of a wide range of movement to be transmitted to the work supported thereby, so that said work is most conveniently positioned in desired operative relation to the stitching or stapling devices of the machine, with a minimum of necessary handling, and with a consequent saving of both time and labor to the operator.

I am aware that some changes may be made in the arrangements and combinations of the various devices and parts, as well as in the details of the construction of the same, without departing from the scope of my present invention as set forth in the foregoing specification, and as defined in the appended claims. Hence, I do not limit my invention to the exact arrangements and combinations of the several devices and parts described in said specification, nor do I confine myself to the exact details of the construction of said parts as illustrated in the accompanying drawings.

I claim:—

1. The combination with a wire stitching or stapling machine and its anvil arm, of a work supporting means, comprising a carrier arm vertically adjustable toward or away from said anvil arm, a pivot block secured upon the rearward end of said carrier arm, a transverse arcuate plate provided with tracker wheels secured to the outer forward end of said carrier arm, a rectangular frame, a plurality of longitudinally spaced transverse idler rollers mounted in said frame, and supporting means for said frame having its inner end pivotally engaged with said pivot block and its free end in riding engagement upon said tracker wheels whereby said frame may be capable of lateral swinging movements in horizontal plane.

2. The combination with a wire stitching or stapling machine and its anvil arm, of a work supporting means, comprising a carrier arm vertically adjustable toward or away from said anvil arm, a pivot block secured upon the rearward end of said carrier arm, a transverse arcuate plate provided with tracker wheels secured to the outer forward end of said carrier arm, a longitudinal supporting bar having a pivot stud at its inner end engaged with said pivot block, a transverse curved tracker plate secured to the free end of said supporting bar to ride on said tracker wheels, a rectangular frame secured to said supporting bar, and a plurality of longitudinally spaced transverse idler rollers mounted in said frame.

3. The combination with a wire stitching or stapling machine and its anvil arm, of a work supporting means, comprising a carrier arm vertically adjustable toward or

away from said anvil arm, a pivot block provided with a receiving socket mounted on the inner end of said carrier arm, a supporting bar, a pivot stud at the inner end of said supporting bar receivable in said socket of said pivot block, spring means interposed between said pivot stud and the bottom of said socket to render the inner end of said supporting bar yieldingly depressible, a transverse arcuate plate provided with tracker wheels secured to the outer end of said carrier arm, a transverse curved tracker plate secured to said supporting bar to ride on said tracker wheels, a rectangular frame secured to said supporting bar, and a plurality of longitudinally spaced transverse idler rollers mounted in said frame.

4. The combination with a wire stitching or stapling machine and its anvil arm of a work supporting means, comprising a carrier means vertically adjustable toward or away from said anvil arm, a rectangular frame having a plurality of longitudinally spaced transverse idler rollers mounted thereon, a pivot block at the inner end of said carrier means, said pivot block having a receiving socket, a pivot stud connected with the inner end of said frame and engaged in said socket, and spring means within said socket in engagement with the end of said pivot stud to render the inner end of said frame yieldingly depressible, the outer end of said frame being free to swing laterally in horizontal plane while supported by said carrier means.

5. The combination with a wire stitching or stapling machine and its anvil arm of a work supporting means, comprising a rectangular frame having a plurality of longitudinally spaced transverse idler rollers, means for carrying said frame, means for pivoting the inner end of said frame relative to said carrying means so that its free end is laterally movable in horizontal plane, and guide means at the outer free end of said carrying means upon which the free end of said frame rides.

6. The combination with a wire stitching or stapling machine and its anvil arm of a work supporting means, comprising a rectangular frame having a plurality of longitudinally spaced transverse idler rollers, means for carrying said frame, means for pivoting the inner end of said frame relative to said carrying means so that its free end is laterally movable in horizontal plane, and means rendering the pivoted end of said frame yieldingly depressible.

7. The combination with a wire stitching or stapling machine and its anvil arm of a work supporting means, comprising a rectangular frame having a plurality of longitudinally spaced transverse idler rollers, means for carrying said frame, means for

pivoting the inner end of said frame relative to said carrying means so that its free end is laterally movable in horizontal plane, means rendering the pivoted end of said
5 frame yieldingly depressible, and means for vertically adjusting said carrying means toward or away from said anvil arm.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 10th day of September, 1920.

DENIS A. FLAVELL.

Witnesses:

GEORGE D. RICHARDS,

FREDERICK CRYER.