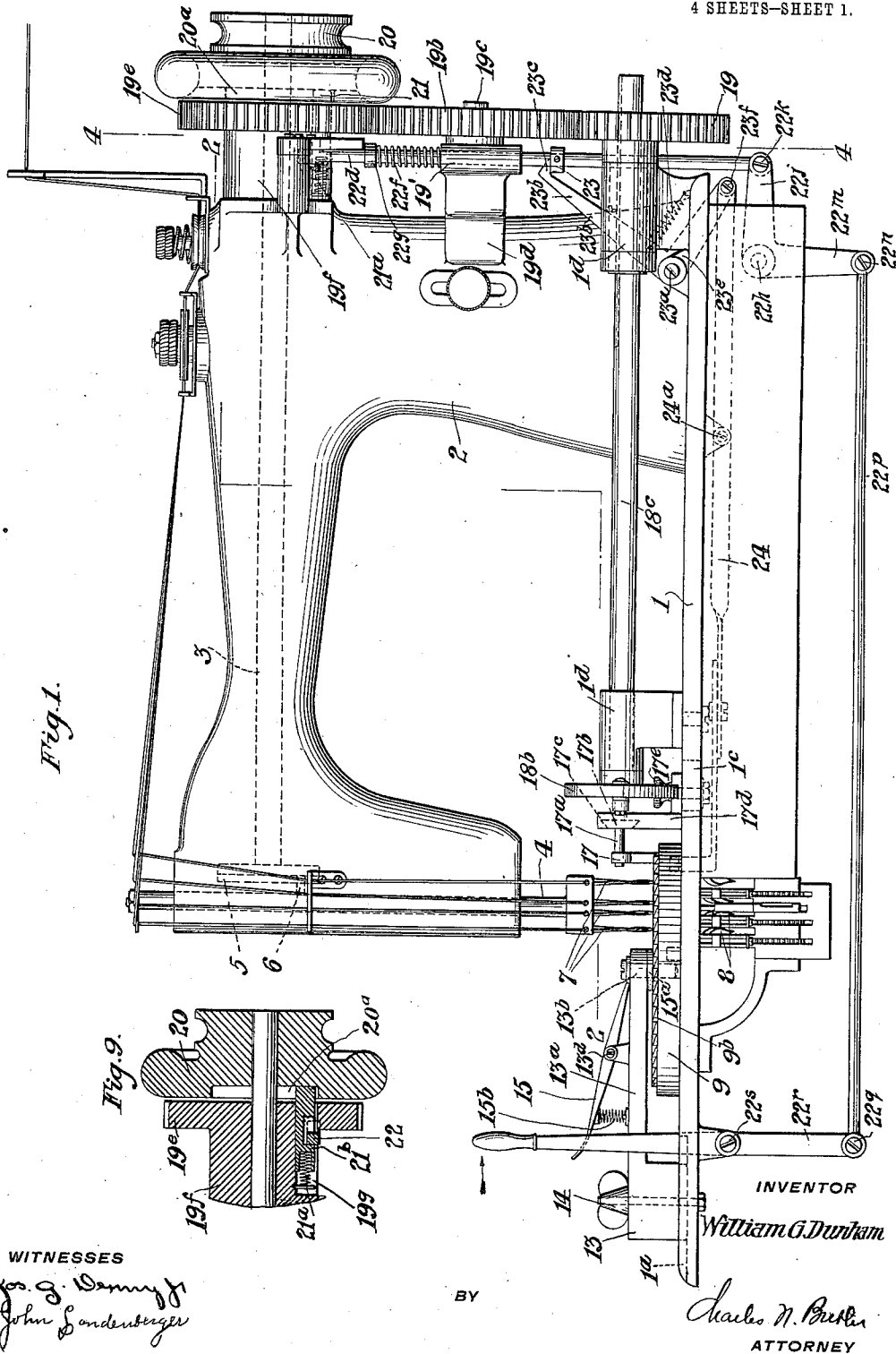


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SEWING MACHINE ATTACHMENT.
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1,029,917.

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4 SHEETS—SHEET 1.



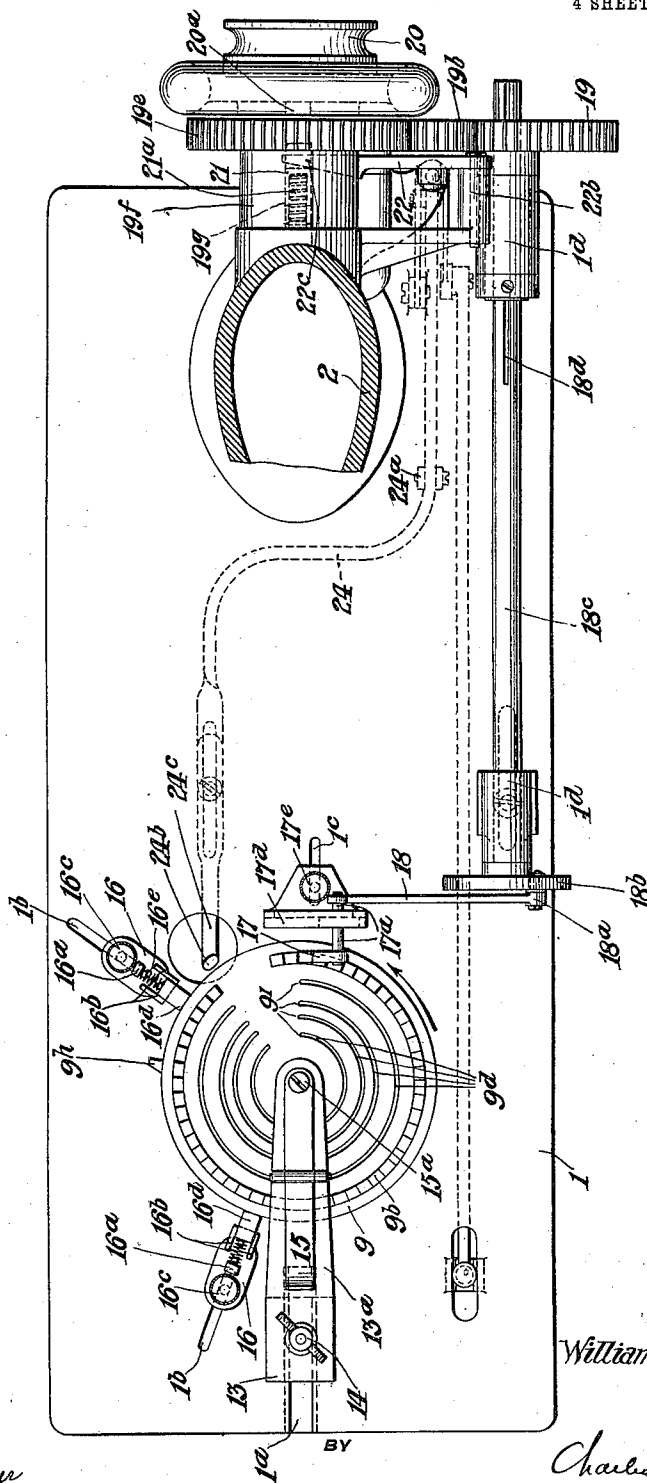
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4 SHEETS-SHEET 2.

Fig. 2.



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4 SHEETS—SHEET 3.

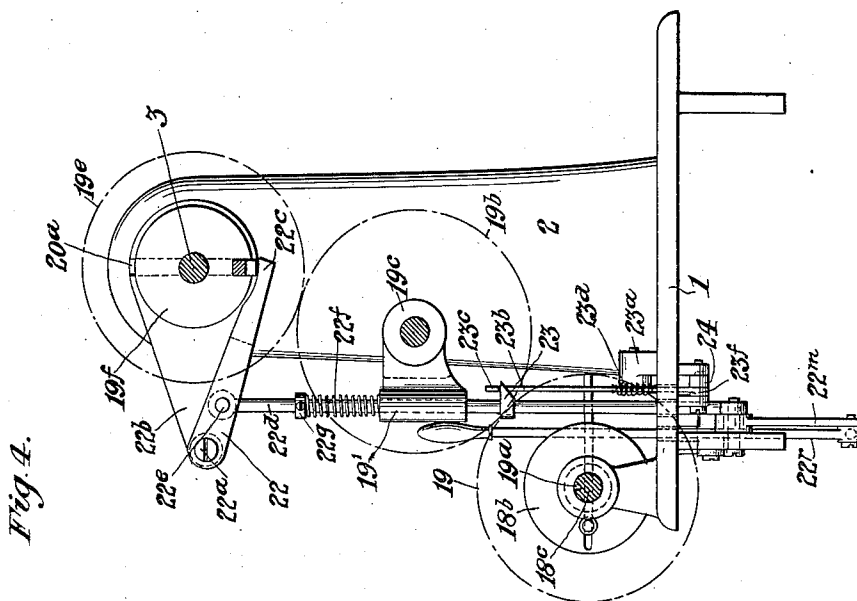


Fig. 4.

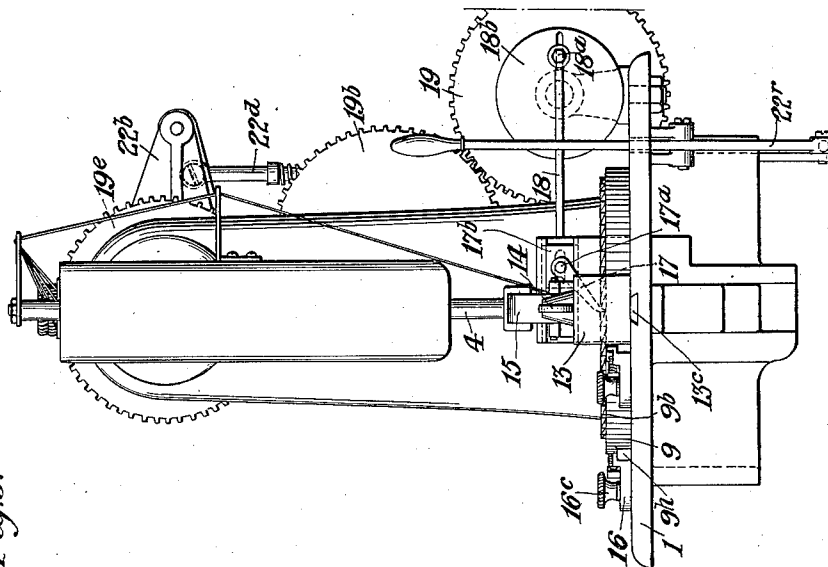


Fig. 3.

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4 SHEETS—SHEET 4.

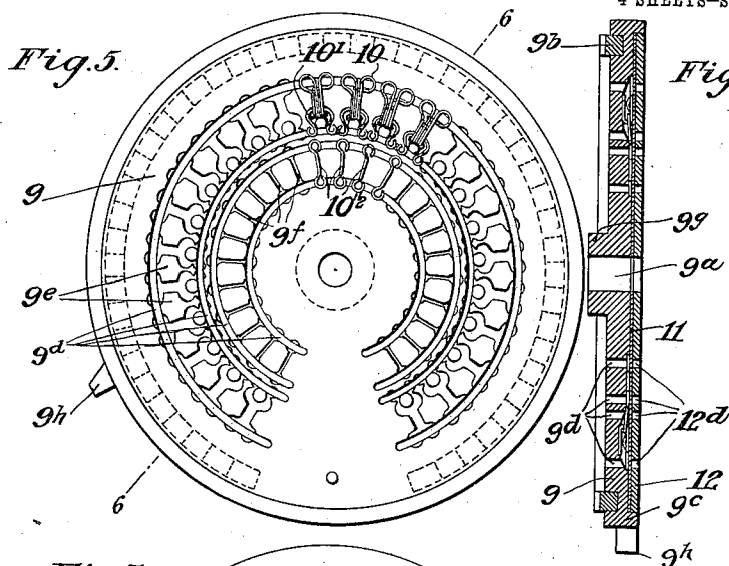


Fig. 7.

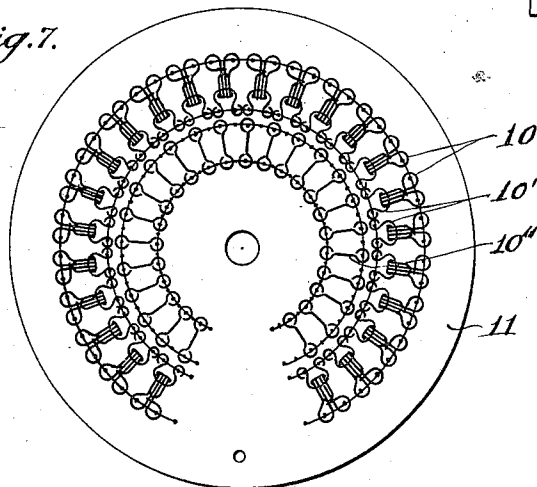
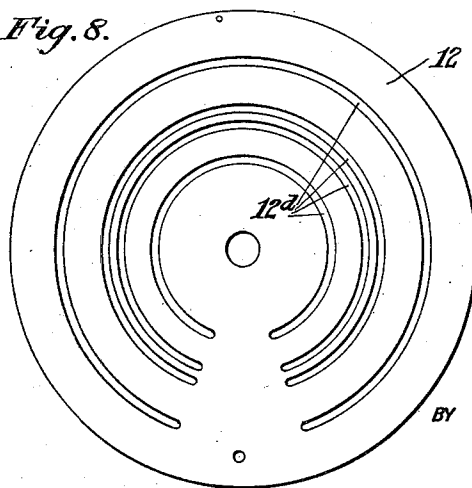


Fig. 8.



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UNITED STATES PATENT OFFICE.

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SEWING-MACHINE ATTACHMENT.

1,029,917.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed February 16, 1911. Serial No. 608,968.

To all whom it may concern:

Be it known that I, WILLIAM G. DUNHAM, a British subject, residing at East Lansdowne, in the county of Delaware and State of Pennsylvania, have invented a certain Sewing-Machine Attachment, of which the following is a specification.

My invention is a sewing machine attachment designed to cooperate with stitching mechanism for the purpose of securing hooks and eyes, buttons and the like in circular arrangement on cards.

The characteristic features of my invention are fully disclosed in the following description and the accompanying drawings in illustration thereof.

In the drawings, Figure 1 is a front elevation of a sewing machine having my attachment applied thereto; Fig. 2 is a top plan and part sectional view taken on the line 2—2 of Fig. 1; Fig. 3 is an end elevation of the mechanism shown in Fig. 1; Fig. 4 is a sectional view taken on the line 4—4 of Fig. 1; Fig. 5 is a plan view of the body of the holder having hooks and eyes placed in seats thereof; Fig. 6 is a sectional view taken on the line 6—6 of Fig. 5 representing the body of the holder having a retaining disk applied thereto with a card together with hooks and eyes clamped between them; Fig. 7 is a plan view of a card having hooks and eyes sewed thereon in accordance with my invention; Fig. 8 is a plan view of the retaining disk, and Fig. 9 is a sectional view illustrating details of the clutching mechanism.

The attachment is applicable to a usual type of sewing machine comprising the bed 1 and the arm 2 containing the revoluble driving shaft 3 which reciprocates the needle bar 4 through conventional connections 5 and 6, the bar carrying the needles 7 which cooperate with the conventional shuttles mechanism 8 beneath the bed.

My improvements comprise a holder having a circular body 9 provided with a central journal bearing 9^a and concentric therewith a circular rack 9^b, a circular flange 9^c, circular through slots 9^d and radially disposed seats 9^e and 9^f, the journal bearing comprising the hub 9^g and the periphery of the body having a lug 9^h thereon. The seats 9^e receive the hooks 10 and eyes 10' and the seats 9^f receive the eyes 10'', upon which a circular card 11 is placed, within the seat provided by the flange 9^c, and a retaining

disk 12 is placed on the card within the flange 9^c, the disk containing the through slots 12^d registering with the respective slots 9^d.

A bracket 13, having an arm 13^a containing an aperture 13^b, is secured to the base 1 by a bolt 14, the bed having a channel 1^a therein and the bracket a tongue 13^c thereon which engages the channel and prevents the arm from turning. A lever 15 is adapted to rock on the fulcrum 13^d and carries an arbor 15^a movable through the bearings 13^b and 9^a, whereby the holder body 9 can be journaled, the arbor being withdrawn for the insertion and removal of the holder by depressing the outer arm of the lever against the action of the spring 15^b which normally holds the arbor in the bearings.

Brackets 16, having studs 16^a and guides 16^b thereon, are fixed to the base 1 by bolts 16^c which pass through the base slots 1^b, by which the brackets can be adjusted radially with respect to the arbor 15^a. Plunger blocks 16^d are adapted to reciprocate in the ways formed by the guides 16^b, radially with respect to the arbor 15^a; the blocks being thrust toward the arbor by the springs 16^e disposed between them and the studs 16^a and serving as guides for centering and brakes for holding the body 9, against the periphery of which they are adapted to bear.

The holder, being engaged by the arbor, is revolved by the reciprocating pawl 17 which engages the rack or ratchet teeth 9^b and is carried by an arbor 17^a passing through a block 17^b, the latter reciprocating in a way 17^c of a bracket 17^d. The bracket is fixed to the bed 1 by a bolt 17^e passing through the slot 1^c thereof, by which the position of the bracket can be adjusted to adjust the position of the pawl as may be required by the diameter of the racks of the different holders which may be used. The block 17^b is reciprocated by a pitman rod 18 which connects the arbor 17^a with the pin 18^a of a crank 18^b carried by a shaft 18^c, the shaft being revoluble in and longitudinally movable through the adjustable bearings 1^d carried by the bed 1 to compensate for the adjustment of the bracket 17^d. The shaft 18^c is movable through and revolved by a pinion 19 having a key 19^a thereon which engages a longitudinal groove 18^d in the shaft; the pinion 19 is revolved by an idler pinion 19^b journaled on a stud 19^c of

the bracket 19^d carried by the arm 2, and the idler is revolved by a pinion 19^e having a collar 19^f fixed on the shaft 3. The shaft 3 is revolved by a belt wheel 20, normally loose thereon and clutched thereto by a bolt 21 movable longitudinally in a groove 19^g of the collar 19^f and pinion 19^e, into and out of engagement with recesses 20^a in the face of the wheel 20, the bolt being thrown into engagement by a spring 21^a placed behind it in the groove 19^g. The bolt 21 is drawn back to disengage the wheel 20, by a lever 22 having the fulcrum 22^a on the arm 22^b which is fixed to the arm 2, the lever having the wedge shaped end 22^c which engages the lug 21^b on the bolt. The rod 22^d, having the pivoted connection 22^e with the lever 22, passes through the bearing 19^f of the bracket 19^d and is elevated, to elevate the lever, by a spring 22^f which engages the collar 22^g fixed on the rod and is supported by the bearing 19^f through which the rod moves. The rod 22^d is drawn down, to disengage the lever 22 from the bolt 21, by a crank lever having the fulcrum 22^h and comprising the arm 22ⁱ having the pivoted connection 22^j with the rod and the arm 22^m having the pivoted connection 22ⁿ with a rod 22^p, the latter having the pivoted connection 22^q with the lever 22^r adapted to rock on the fulcrum 22^s. To hold down the rod 22^d, a cam 23 is fixed thereon and a crank lever, fulcrumed on the bearing 23^a, has its arm 23^b provided with the tooth 23^c adapted to engage the cam, the tooth being held in engagement by a spring 23^d connected with the arm 23^b and the base 1. To automatically disengage the rod 22^d, the arm 23^e has the pivoted connection 23^f with the lever 24 which is adapted to rock on the fulcrum 24^a and to be rocked by the engagement of the lug 9^h of the revolving holder with the inclined surface 24^b of its arm 24^c.

In operation, the holder body 9, with the hooks and eyes engaged on the card therein, is placed in position by depressing the lever 15 and elevating the arbor 15^a, the holder being placed so that the ends 9^f of the circular slots 9^d are beneath the needles 7 and engaged by releasing the lever whereupon the arbor is thrown automatically into the bearing 9^a. The lever 22 is drawn down by means of the lever 22^r through the intermediate mechanism, the cam 23 moving past the pawl 23^c which then acts automatically to hold the lever 22 down. The bolt 21, being thus released, is thrown by the spring 21^a into engagement with the revolving wheel 20 and the shaft 3 is revolved, acting through the intermediate mechanism described to reciprocate the needles 7 and revolve the holder in unison. When the holder has revolved until the ends 9^f of the slots 9^d reach the needles, the lug 9^h strikes the surface 24^b of the lever 24, which ele-

vates the arm 23^b and releases the rod 22^p, upon which the lever 22 is elevated by the action of the spring 22^f and the bolt 21 is drawn back. The shaft 3 being thus disengaged from the driving wheel, the operation is stopped and the holder, with the hooks and eyes sewed to the card, can be withdrawn upon depressing the lever 15 and elevating the arbor 15^a.

Having described my invention, I claim:

1. In a sewing machine, a revoluble holder comprising a pair of engaging members having a circular slot therein, in combination with a reciprocating needle adapted to act in said slot.

2. In a sewing machine, a revoluble card holder having one or more circular slots therein and said holder comprising a detachable disk, in combination with sewing mechanism comprising one or more needles adapted for registration with said slot or slots and sewing through said card.

3. In a sewing machine, a revoluble holder having a circular slot therein and means for clamping articles in engagement with a support therefor, in combination with mechanism for revolving said holder, sewing mechanism adapted for stitching said articles to said support, and means for operating said mechanisms in unison.

4. In a sewing machine, a revoluble holder provided with circular slots, seats for holding articles, and means for engaging a card in conjunction with said articles, in combination with sewing mechanism comprising needles adapted to act in said slots whereby said card and articles are sewed together.

5. In a sewing machine, a holder having a circular slot and a journal bearing, a movable arbor adapted to engage said bearing, and means whereby said arbor can be inserted and withdrawn, in combination with means for revolving said holder and means for stitching together articles carried by said holder.

6. In a sewing machine, a bed having an arm thereon, a longitudinally movable arbor carried by and movable through said arm, a holder journaled on said arbor and adapted for clamping articles to be sewed together, means comprising a pawl and ratchet for revolving said holder, and sewing mechanism adapted for stitching said articles.

7. In a sewing machine, a bed, a bearing fixed thereto, a longitudinally movable arbor carried by said bearing, a lever for moving said arbor, a holder journaled on said arbor, means for revolving said holder, sewing mechanism coöperating with said holder for stitching articles held thereon, and trip mechanism operated by said holder for stopping the mechanism which actuates said holder and sewing mechanism.

8. In a sewing machine, a revoluble holder having one or more circular slots therein and a rack thereon, sewing mechanism comprising one or more needles adapted to act through said slot or slots, a pawl adapted for engaging said rack to rotate said holder, a reciprocating arbor for carrying said pawl, a revoluble shaft, means whereby said shaft is connected with and reciprocates said arbor, driving mechanism, and means whereby said driving mechanism operates said shaft.

9. In a sewing machine, a revoluble holder having a circular slot therein and a rack thereon, sewing mechanism comprising a needle adapted to act in said slot, a pawl adapted for engaging said rack, a reciprocating arbor which carries said pawl, a revoluble shaft, a crank and pitman whereby said shaft reciprocates said arbor, driving mechanism, a train of gears for connecting said driving mechanism with said shaft, means for clutching and unclutching said gears with relation to said driving mechanism, and automatically operating mechanism for disengaging said clutching means.

10. In a sewing machine, a revoluble holder having one or more circular slots therein, sewing mechanism comprising one or more needles adapted to act in said slot or slots, means for rotating said holder, driving mechanism, clutching mechanism whereby said driving mechanism is engaged to said means, and automatically operating means for disengaging said clutching mechanism.

11. In a sewing machine, a revoluble holder adapted for clamping hooks and eyes on a support, means for revolving said

holder, driving mechanism, a clutch for connecting said mechanism and means, automatically operating mechanism for disengaging said clutch, means for restraining said mechanism last named, and means carried by said holder for tripping said last named means and releasing said last named mechanism.

12. In a sewing machine, a base, a circular holder having seats therein for holding articles to be operated upon, a disk for holding articles in said seats, said holder having one or more circular slots therein, an arbor whereby said holder is journaled, spring pressed blocks movable radially to said arbor whereby the periphery of said holder is engaged, and sewing mechanism comprising one or more needles adapted to act through said slot or slots.

13. In a sewing machine, a revoluble holder having one or more circular slots therein, sewing mechanism comprising one or more needles adapted to act in said slot or slots, means for revolving said holder and reciprocating said needles in unison, driving mechanism, a clutching device for engaging said means and driving mechanism, and mechanism comprising a lever whereby the action of said clutching mechanism is controlled.

In witness whereof I have hereunto set my name this 15th day of February, A. D. 1911, in the presence of the subscribing witnesses.

WILLIAM G. DUNHAM.

Witnesses:

Jos. G. DENNY, Jr.,
JOHN LANDENBERGER.