

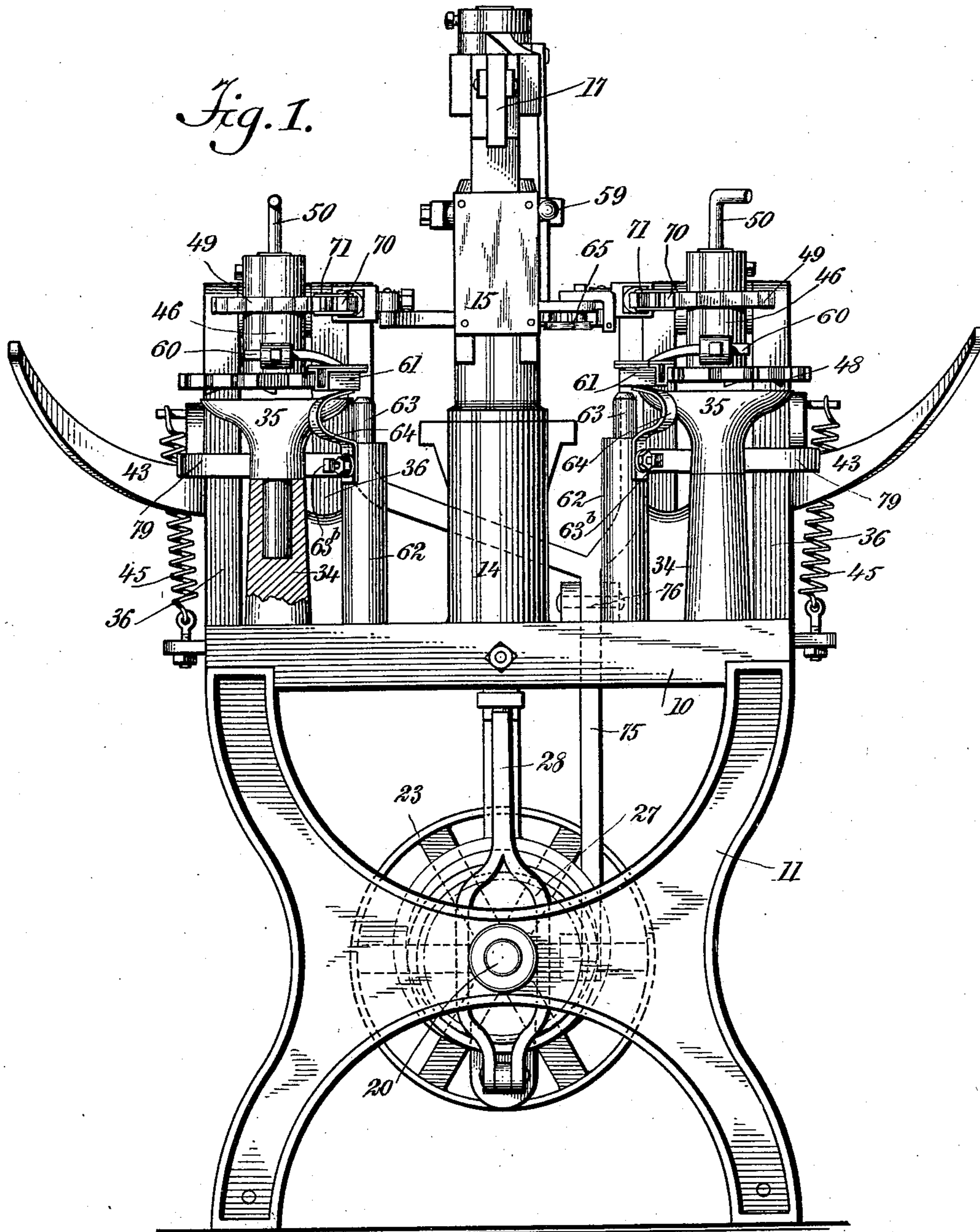
No. 722.962.

PATENTED MAR. 17, 1903.

C. ENGBERG.
BASKET MAKING MACHINE.
APPLICATION FILED SEPT. 17, 1902.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

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Laure B. Owens.

INVENTOR

Carl Engberg

BY

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ATTORNEYS.

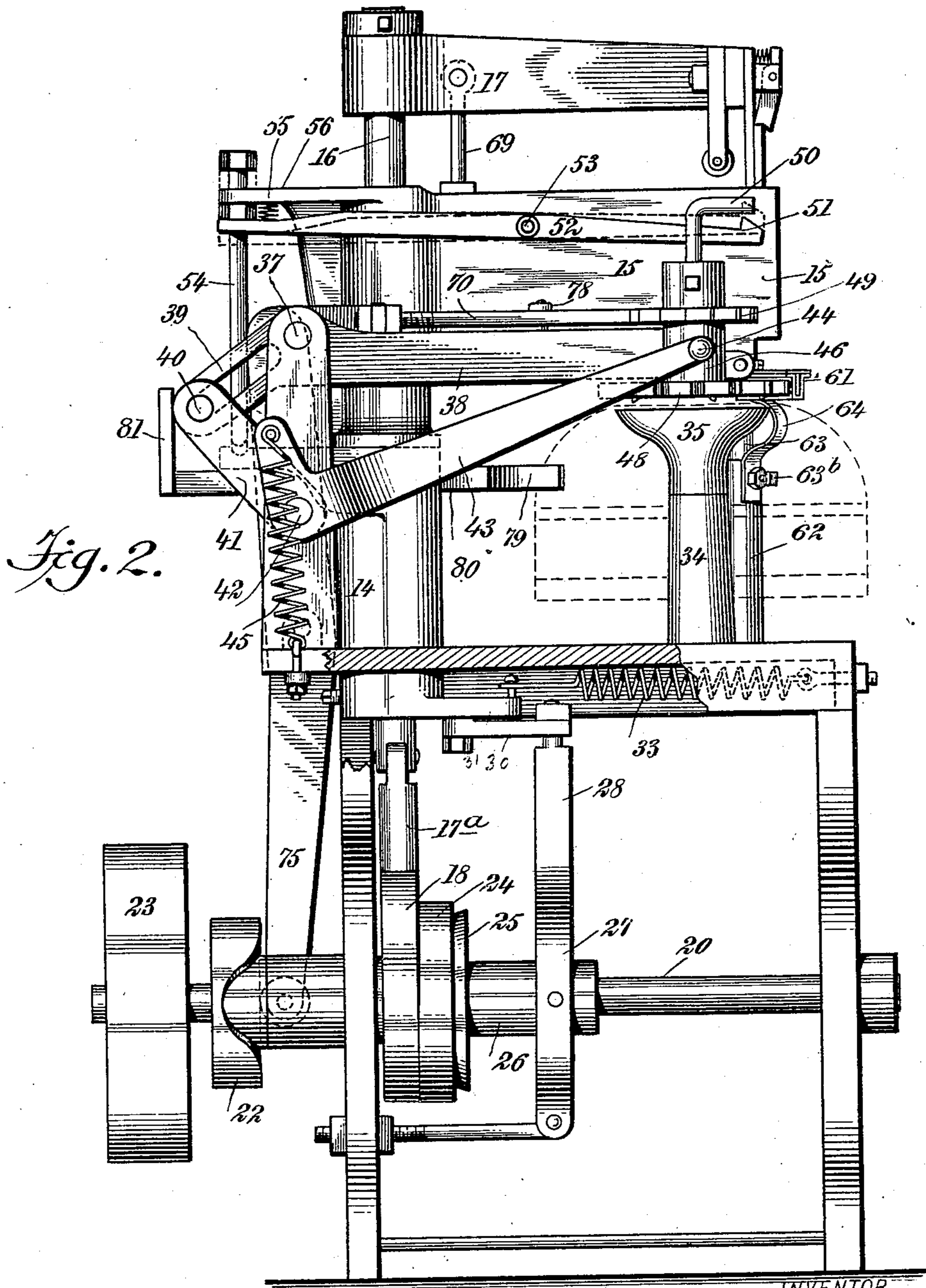
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4 SHEETS—SHEET 2.



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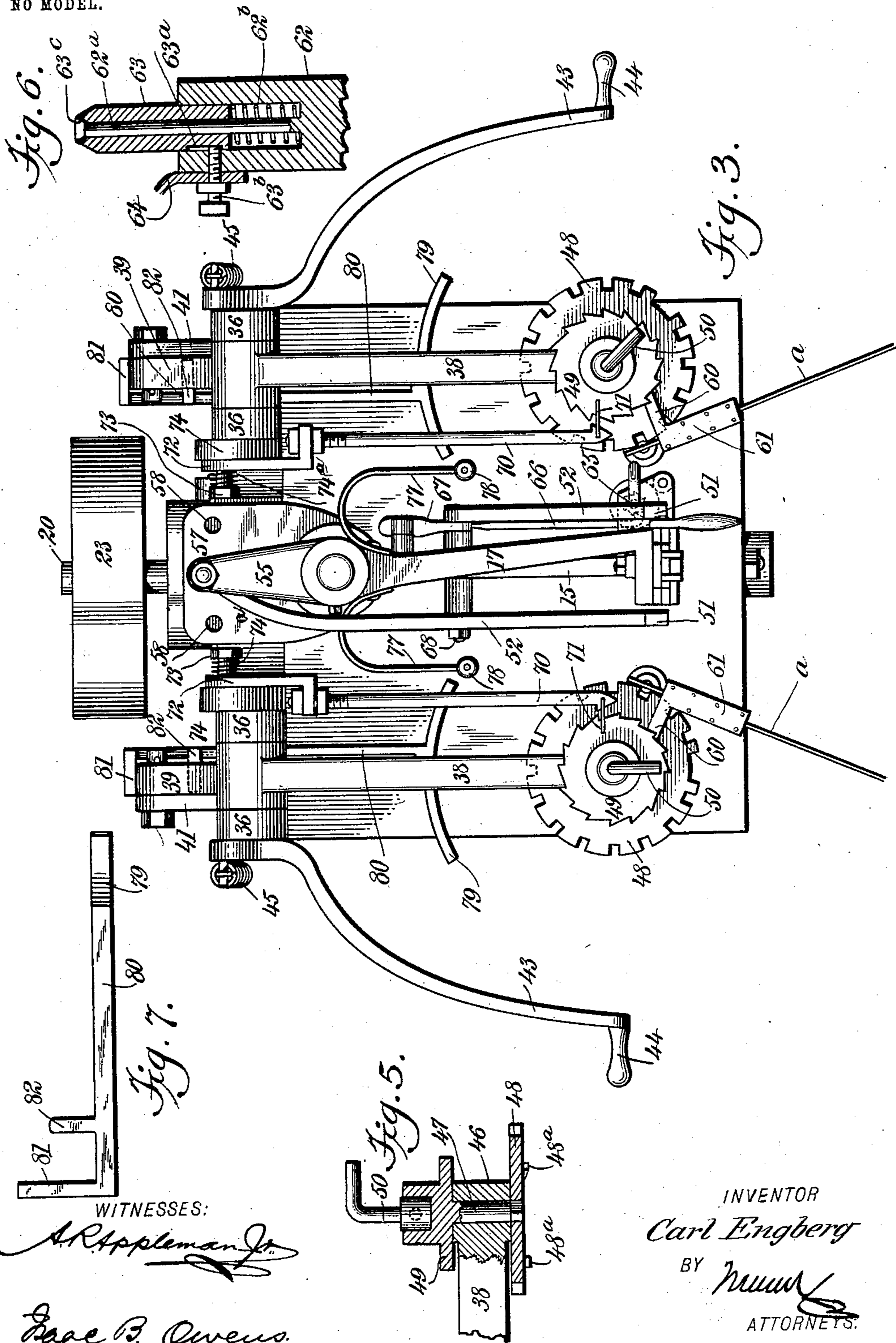
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4 SHEETS—SHEET 3.



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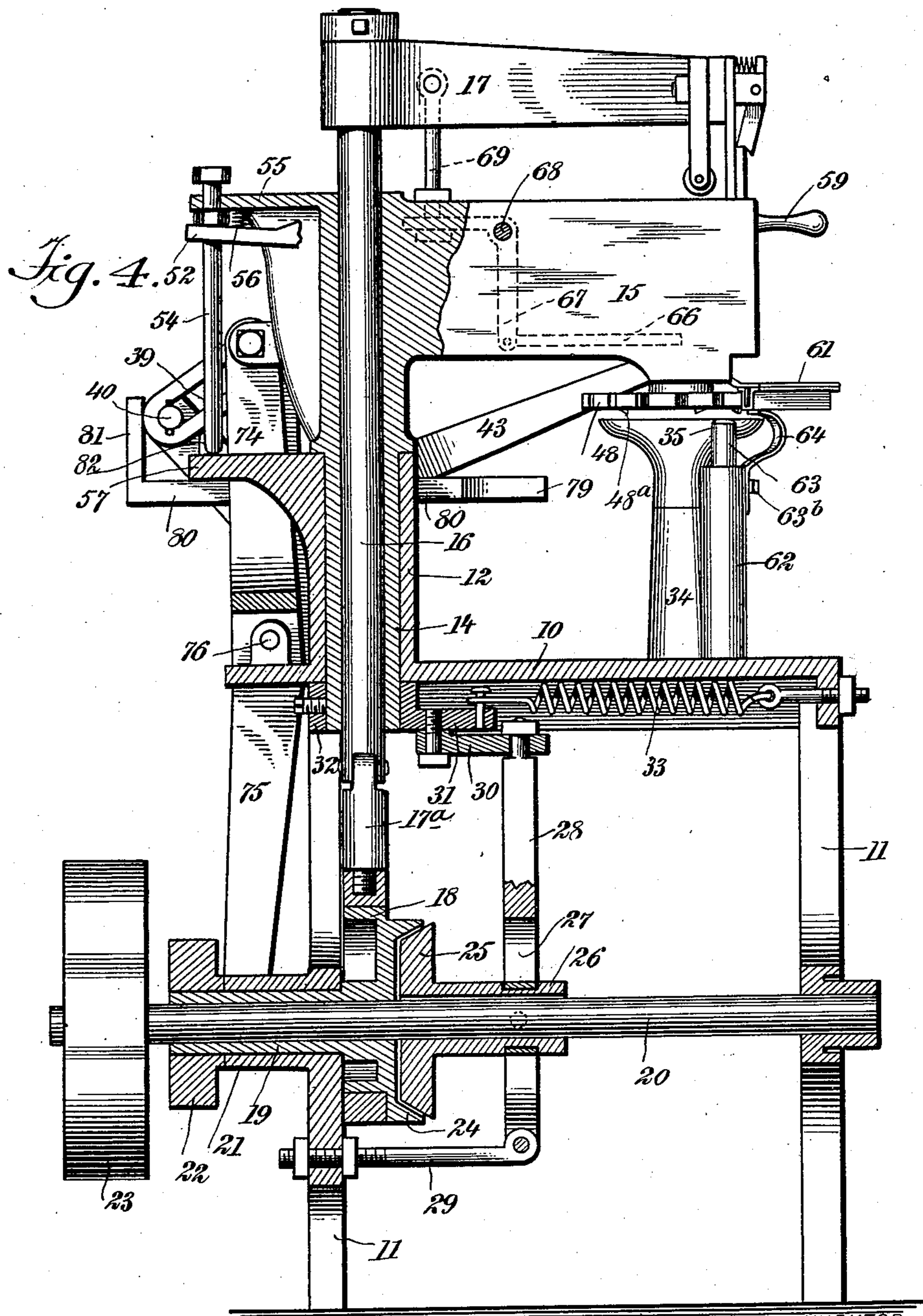
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NO MODEL.

4 SHEETS—SHEET 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CARL ENGBERG, OF ST. JOSEPH, MICHIGAN, ASSIGNOR TO ENGBERG'S ELECTRIC AND MECHANICAL WORKS, OF ST. JOSEPH, MICHIGAN.

BASKET-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 722,962, dated March 17, 1903.

Application filed September 17, 1902. Serial No. 123,725. (No model.)

To all whom it may concern:

Be it known that I, CARL ENGBERG, a citizen of the United States, and a resident of St. Joseph, in the county of Berrien and State of Michigan, have invented new and useful Improvements in Basket-Making Machines, of which the following is a full, clear, and exact description.

This invention relates to a machine for stapling hoops on baskets, and is especially intended for putting into place the bottom hoops of bushel-baskets, which baskets have rounding bottoms, the hoops serving not only to strengthen the baskets, but also to form a flat bottom surface, allowing the basket to stand upright.

The machine in its general form embodies two work-holding devices, including means for feeding the hoops with a step-by-step motion, and a single stapling mechanism, which is mounted to work alternately over the work-holding device, so that one basket may be operated on while another is being adjusted into position on the other work-holder.

This specification is a specific description of one form of my invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the machine. Fig. 2 is a side elevation with parts broken away. Fig. 3 is a plan view. Fig. 4 is a vertical section. Fig. 5 is a detail section of the feed-basket wheel. Fig. 6 is a detail section of the anvil-pin, and Fig. 7 is a detail view of the adjusting or gage bar.

10 indicates the table or base of the machine, which is suitably supported on legs 11 and which has a rigid upwardly-projecting bottom portion 12, forming a box in which turns the tubular shank 14 of the arm 15 of the stapling mechanism. This arm projects forwardly and is arranged to turn with the tubular shank 14 to a position either to the right or left of that shown in Fig. 3, said view illustrating the arm in its intermediate or inactive position.

16 indicates the shaft which operates the stapling-head 17, this shaft being vertically

movable in the tubular shank 14 and connected at its lower end by a link 17^a with a strap of an eccentric 18. Said eccentric 18 has an axially elongated hub 19, mounted loosely on the drive-shaft 20 and carried in a box 21 beneath the table 10. The hub 19 carries at its outer end a cam 22, the purpose of which will be hereinafter described.

23 indicates a band-wheel on the shaft 20. Formed on or fastened to the eccentric 18 is a clutch member 24, wherewith coacts a member 25, fastened on a sleeve 26, which sleeve is splined on the shaft 20 and is connected with the forked end 27 of a lever 28. This lever has its lower end fulcrumed on a stud-shaft 29, carried in the framing below the box 21, and the upper end of said lever is connected by a link 30 with an arm 31, carried on a collar 32, fastened securely to the lower end of the tubular shank 14.

33 indicates a retractile spring connected with the arm 31 and fastened to the front of the table 10, beneath the same. The arm 31 lies in vertical plane with the arm 15, and the spring 33, connected as described, tends to hold said arm 15 in the intermediate position illustrated. In this position the clutch member 25 is disengaged from the member 24 and the shaft 20 rotates idly in its bearings. When, however, the arm 31 is thrown to either side, the upper end of the lever 28 is thrown rearward and the clutch members 25 and 24 are engaged, thus turning the elements 18 and 22 with the shaft 20. The consequent rotation of the eccentric 18 imparts a vertical reciprocating movement to the parts 16 and 17, and thus operates the stapling mechanism. This mechanism may be of any desired form and does not in itself constitute a part of the present invention.

Pedestals 34 are mounted on the table at each side thereof, and each pedestal carries revolvably a work-holder 35, said work-holders being adapted to have the baskets placed thereon in inverted positions, as shown by dotted lines in Fig. 2.

At each side of the machine and at the rear thereof are mounted two pairs of standards 36. In each pair of standards is mounted a fulcrum 37 of an elbow-lever 38. The long arms of these levers project forwardly to a

point directly over the respective work-holders, and the short arms incline downward and rearward and are formed with slots 39 therein. In the slots 39 pins 40 play loosely, and these pins are carried on arms 41, said arms being mounted fast on the respective shafts 42, carried in the beforementioned standards 36. To the shafts 42 are respectively fastened elbow-levers 43, the long arms of which project forward at each side of the machine and are provided with handles 44, facilitating the manual operation of the levers, while the short arms of said elbow-levers 43 have retractile springs 45 connected thereto, which springs serve to hold the levers yieldingly in either one of their two positions. The front ends of the levers 38 each carry a vertically-disposed box 46, and in these boxes are mounted to turn vertical shafts 47, (see Fig. 5,) each shaft 47 carrying on its lower end a hoop-feeding ratcheted or notched wheel 48 and on its upper end a ratcheted wheel 49. The wheel 48 has slight spurs 48^a on its under side to engage and turn the basket, as will be fully described hereinafter. Each shaft 47 has an upward and laterally-turned extension 50, which turns with the shaft, and these lateral extensions 50 are adapted to engage the hooked ends 51 of levers 52. Said levers are fulcrumed at each side of the arm 15 on a transverse shaft 53, the levers being fastened to this shaft and one lever extending rearward to a point back of the arm 15, where it is connected with a vertically-movable lock-bar 54. Said lock-bar is mounted to move in an arm 55, projecting rearward from the arm 15, as best shown in Fig. 3, and 56 designates a spring pressing down the rear end of the lever. When the stapling mechanism swings to either one of its operative positions, the extension 50 of the shaft 47, toward which the stapling mechanism is moved, will strike at the end of the stapling operation the hooked end 51 of the adjacent lever 52 and throw said lever down into position shown by full lines in Fig. 2, whereupon the stop-bar 54 will be raised. This bar extends down to a rearwardly-disposed bracket 57. Said bracket is formed, as best shown in Fig. 3, with two openings 58 therein, and in these openings the stop-bar 54 is adapted to enter, whereby to hold the stapling mechanism in either one of its operating positions. When the stapling mechanism is thrown to one side, the spring 56 automatically throws the stop-bar 54 into one of the openings 58, and this holds the stapling mechanism against further swinging movement. The extensions 50 of the shafts 47 are so adjusted that at the end of the stapling operation said extensions will ride over the ends 51 of the levers 52. This withdraws the pin 54, and the spring 33 then acts to throw the stapling mechanism in its intermediate or inactive position.

59 indicates a handle which is attached to the arm 15 to facilitate throwing said arm

from inactive to active position. As pointed out above, the arm is automatically thrown from active to inactive position. 70

Attached to the bearings 46 by means of arms 60 are the tubular guides 61 for the hoops. These hoops are indicated by the letter *a* in the drawings. The guides 61 are disposed tangentially to the toothed feed-wheels 48, so that the hoops are fed to the periphery of these wheels, and the rotary movements of said wheels cause the hoops to be drawn over the basket. 75

62 indicates standards which are mounted on the table 10 alongside of the work-holders 35, and these standards carry anvil-pins 63, against which the stapling mechanism works. (See Fig. 6.) The anvil-pins 63 have a concave top 63^c. The pins 63 are sustained on the standards 62 by springs 62^b, and 62^a indicates pins which are carried rigidly on the standards and fit loosely in the longitudinally-orificed anvil-pins. The movement of the pins 63 is limited by a screw 63^b, which plays in a groove 63^a. The basket is held up against the under side of the hoop-feed wheels 48 by means of springs 64, which are attached to the said standards 62 through the medium of the screws 63^b. In the stapling operation the staple is first struck on the concave end 63^c of the pin 63, and as this yields it turns the points of the staple inward, and finally these points strike the top of the pins 62^a, and the clenching operation is thus completed. 80 85 90 95 100

In Figs. 1 and 3, 65 indicates the devices for feeding the wire of which the staples are formed, and this device is operated, as best shown by the dotted lines in Fig. 4, by a pawl 66, connected with one arm of an elbow-lever 67. Said lever is fulcrumed at the point 68 and is operated by a link 69, attached to the vertically-reciprocating arm 17. The rocking of the lever 67 drives the pawl 66 reciprocally. 105 110

The shafts bearing the hoop-feed wheels 48 are driven by pawls 70, which work with the ratchet-wheels 49, said pawls having guides 71 loosely engaging the top and bottom faces of the ratchet-wheels, whereby to hold the pawls in operative position and prevent them from falling out of engagement with the ratchet-wheels 49. Said pawls extend rearward and are attached to links 72, which in turn are connected by pins 73 with the arms 74 of a forked lever 75. Said lever is fulcrumed at the point 76. (See Figs. 1 and 4.) The pins 73 are loosely engaged by the links 72, and 74^a indicates springs which are coiled around the pins and press the links yieldingly against the arms 74. This allows the pawls 71 a slight lateral movement and normally holds said pawls disengaged from their ratchets. (See Fig. 3.) Fastened to each side of the arm 15 is a spring-arm 77, these arms carrying at their free ends rollers or the like 78, which rollers are opposite the respective pawls 70, and when the stapling 115 120 125 130

mechanism is thrown to one side or the other the roller strikes the adjacent pawl and throws it laterally into engagement with its ratchet-wheel. With respect to these parts
 5 it will be observed that by throwing down the levers 43 the arms 38 may be raised into vertical or approximately vertical positions, these arms carrying with them the guides 61 and wheels 48 and 49. The pawls 70 also
 10 move upward, turning around the centers of the pins 73. The purpose of this is to uncover the work-holders 35 and enable the basket to be placed thereon, the springs holding the levers 38 either raised or lowered.
 15 The lever 75 engages its lower end with the cam 22, and by means of this cam the lever is rocked, which rocking movement of the lever drives the pawls 70. These pawls are not however active with the wheels 49 until
 20 they are pressed sidewise by the spring-arms 77, as above explained.

79 indicates arc-shaped adjusting-bars, which are carried on longitudinal reciprocal arms 80. Said arms extend forward and
 25 backward and are mounted suitably in the standards 36. The rear end of each arm 80 is turned upward, as indicated at 81, and these upturned ends are engaged, respectively, with the ends of the arms 41. The
 30 arms 80 have upward extensions 82, (see Fig. 7,) which bear against the forward side of the slotted arms 39 of the levers 38, and thereby throw the arms 80 forward into active position when the levers 43 are thrown down,
 35 thus holding the adjusting-bars 79 forward to engage the basket and position it properly on the work-holder. When the arms 43 are thrown up to return the levers 38 to their lowered position, the ends of the arms 41
 40 bearing against the upturned ends 81 of the arms 80 withdraw the arms 80 and move the adjusting-bars 79 rearward out of engagement with the basket.

In the use of the invention the hoops are
 45 placed in the guides 61, and the basket is adjusted on the work-holders 35, the levers 38 having been raised previously to placing the basket in position. The raising of the levers 38 results in the movement of the adjusting-
 50 bars 79 forward into active position in the manner before described. The baskets having been placed on the work-holders against the adjusting-bars, which gage the position of the baskets, the levers 38 should then be
 55 thrown down into operating position, the adjusting-bars 79 moving out of the way, so as not to interfere with the turning of the basket on the work-holder. The spurs 48^a engage the basket and cause it to turn as the
 60 disk 48 turns. After this has been done the stapling mechanism is thrown toward the side on which is located the basket to be first operated upon. Assuming that the stapling mechanism be thrown to the right in Fig. 3,
 65 this movement will result immediately in driving the eccentric 18 and cam 22. The right-hand pawl will be engaged with its

ratchet-wheel, and the elements 49 and 48 at the right-hand side will be driven with a step-by-step motion, imparting a like movement
 70 to the basket. Simultaneously the arm 17 is reciprocated, and the stapling operation is thereupon carried on. When the first staple is driven, the hoop is thereby attached to the
 75 basket, and as the basket turns the hoop is drawn through the guide 61. During this movement the hoop is caused to run around the periphery of the disk 48, which thereby gages the position of the hoop on the basket. The notches in the periphery of this disk are
 80 provided to allow the stapling mechanism to work through the notches. This operation continues until the basket has been turned once on the work-holder, and the hoop will
 85 thereby be placed in a circle around the basket. At this period the lateral extension 50 of the shaft 47 strikes the right-hand lever 52 and throws upward the stop-bar 54, and the spring 33 then moves the parts into the
 90 position shown in Fig. 3. The operator then throws the stapling mechanism toward the left, and the operation is repeated, as above described. During this second operation the
 95 right-hand lever 43 should be thrown down and the right-hand lever 38 thereby raised, so that a third basket may be placed on the right-hand work-holder in readiness for a repetition of the operation.

Having thus described my invention, I claim as new and desire to secure by Letters
 100 Patent—

1. The combination of two work-holding means, a stapling means movable from one to the other, means tending to hold the stapling means in intermediate position, and
 105 driving devices for the stapling means, said devices including a clutch thrown into active position when the stapling means are moved out of intermediate position.

2. The combination of two work-holding
 110 means, a stapling mechanism movable from one to the other, a spring tending to hold the stapling mechanism in inactive position, and driving means for the stapling mechanism, said means including a clutch connected with
 115 the stapling mechanism to be thrown into active position as the stapling mechanism moves out of its intermediate position.

3. The combination of two work-holding
 120 means, a stapling means movable from one to the other, a swinging arm moving in time with the stapling means, a spring connected to said arm, a driving-gear for the stapling means, said gear including a clutch, and a lever connected with the clutch and with the
 125 said swinging arm.

4. The combination of a work-holder, a lever swinging toward and from the same, means on the lever for feeding a hoop, stapling means coacting with said means on the lever, and an
 130 adjusting-bar in connection with the lever and movable toward and from the work-holder in time with the lever.

5. The combination of a work-holder, a

work-moving device, a pawl for driving the same, and stapling mechanism movable toward the work - holder and having a part adapted to engage the pawl to move it into operative position.

6. The combination of a work - holder, a stapling mechanism movable toward and from the same, a latch for the stapling mechanism, and means for automatically releasing the latch upon the termination of the stapling operation.

7. The combination of two work-holding means, a stapling means movable from one to the other and devices for driving the stapling means, said devices including a clutch thrown into active position when the stapling means are moved out of inactive position.

8. The combination of a stapling mechanism, a work-holder, a work-turning device, means for carrying the work-turning device to move toward and from the work-holder, and an adjusting-bar arranged to move in and out of action in time with the movement of said means for carrying the work-turning device.

9. The combination of a work - holder, a swinging arm, means carried thereby for turning the work, a hoop-guide, a stapling means, and a work-adjusting or gage bar arranged to move in and out of action in time with the movement of the said arm.

10. The combination with a stapling mechanism movable in and out of operative position, of means for moving the work, comprising a part normally inactive, and a member moving with the stapling mechanism for engaging said normally inactive part to throw it into action.

11. The combination with a stapling mechanism arranged to move in and out of action, of a means for moving the work, comprising a ratchet and a pawl normally out of action, and a member moving with the stapling mechanism for engaging said pawl to throw it into action.

12. The combination of a stapling mechanism movable in and out of action, a latch for holding the stapling mechanism in action, a lever connected to the latch, an operated means for turning the work, and a laterally-extended member turning with the work-turning means and arranged periodically to engage the said lever, for the purpose specified.

13. The combination of a stapling mechanism movable in and out of action, a latch for holding the stapling mechanism in action, a lever connected to the latch, an operated means for turning the work, and a laterally-extended member turning with the work-turning means and arranged periodically to engage the said lever, for the purpose specified, and a spring serving to move the stapling mechanism out of action upon the release of the latch.

14. The combination of a stapling mechanism movable in and out of action, a latch for holding the stapling mechanism in action, a

lever connected to the latch, an operated means for turning the work, and a laterally-extended member turning with the work-turning means and arranged periodically to engage the said lever, for the purpose specified, and a spring pressing the latch into active position, the lever having a hooked end to be engaged by said laterally-extended member.

15. The combination of a stapling mechanism movable in and out of action, a latch for holding the stapling mechanism in action, a lever connected to the latch, an operated means for turning the work, and a laterally-extended member turning with the work-turning means and arranged periodically to engage the said lever, for the purpose specified, a spring serving to throw the stapling mechanism out of action upon the release of the latch, and a spring tending to throw the latch into action, the lever having a hooked end to be engaged by the spring laterally-extended member.

16. The combination of a stapling mechanism, a work - holder, a hoop-guide, a work-turning device and means for carrying the hoop-guide and work-turning device to move toward and from the work-holder.

17. The combination of a stapling mechanism, a work - holder, a hoop-guide, a work-turning device, and means for carrying the hoop-guide and work-turning device to move toward and from the work-holder, said means comprising a lever carrying the hoop-guide and work-turning device at one end and having the other end slotted, a crank having a pin working in the slot of the lever and means for turning the crank.

18. The combination of a stapling mechanism, a work - holder, a hoop-guide, a work-turning device and means for carrying the hoop-guide and work-turning device to move toward and from the work-holder, said means comprising a lever carrying the hoop-guide and work-turning device at one end, and having the other end slotted, a crank having a pin working in the slot of the lever and means for turning the crank, and a movable work gaging or adjusting bar having a part engaged by the slotted end of the lever to be worked therefrom.

19. The combination of a stapling mechanism, a work-holder, a hoop-guide, a work-turning device and means for carrying the hoop-guide and work-turning device to move toward and from the work-holder, and a work adjusting or gaging bar arranged to move toward and from the work-holder and having connection with the means for carrying the hoop-guide and work-turning device to be operated by said means.

20. The combination of a stapling means, a work-holder, a means for turning the work, a reciprocal member for operating said work-turning means, a lever connected to the reciprocal member, a rotary drive-shaft, and a cam on said shaft for operating the lever.

21. In a basket-making machine, the com-

5 combination of a work-holder, means movable toward and from the same to engage the work when in place on the holder, and a work-gage or adjusting bar in connection with said means, and arranged to move into and out of action in time therewith.

10 22. The combination of a work - holder, means adapted to turn the work thereon, a stapling mechanism, an anvil, and a spring juxtaposed to the anvil and adapted to bear under the work.

15 23. In a basket-making machine, the combination of a work-holder, a means for turning the work, an arm or lever on which said means is mounted to move toward and from the work-holder, a hoop-guide, an arm attached to the hoop-guide and connected to the first-named arm or lever to support the hoop-guide from said arm or lever, and a stapling mechanism substantially as described.

20 24. In a basket-making machine, the combination of a work-holder, means for turning the work, a spring-sustained anvil-pin, a spring juxtaposed to the anvil-pin and adapt-

ed to bear under the work, and a stapling means, substantially as described. 25

25. In a basket-making machine, the combination of means for holding the work, a means for turning the work, an arm mounted to swing and carrying said work - turning means and moved toward and from the means for holding the work, and a stapling mechanism, substantially as described. 30

26. The combination of a stapling mechanism movable into and out of action, a latch for holding the stapling mechanism in action, means for holding and turning the work, and means for releasing the latch, the last-named means being operated by the means for turning the work. 35

40 In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL ENGBERG.

Witnesses:

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