

No. 658,074.

Patented Sept. 18, 1900.

C. RIESENWEBER.
IRONING MACHINE.

(Application filed Oct. 30, 1899.)

(No Model.)

4 Sheets—Sheet I.

Fig. I.

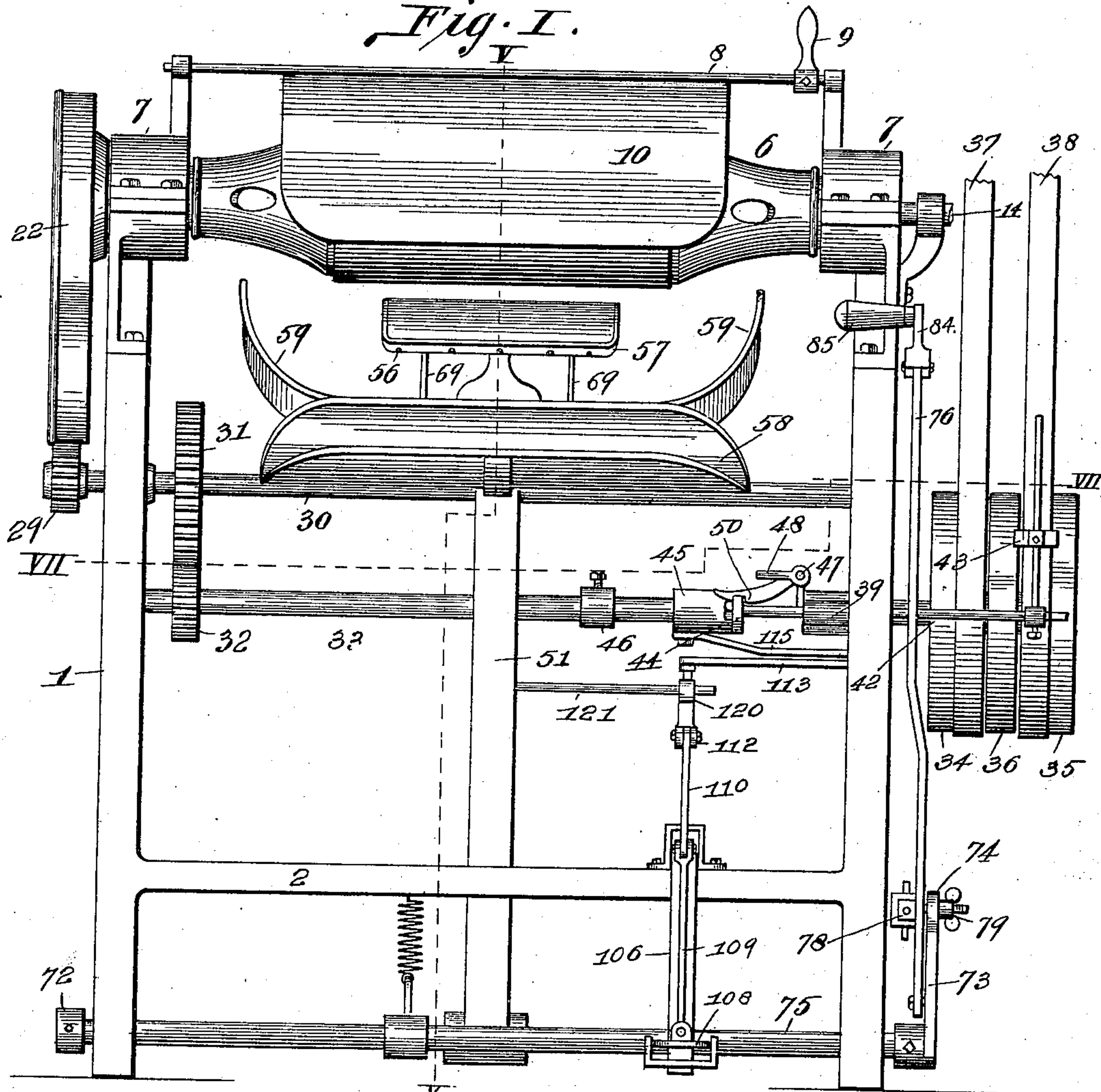


Fig. II.

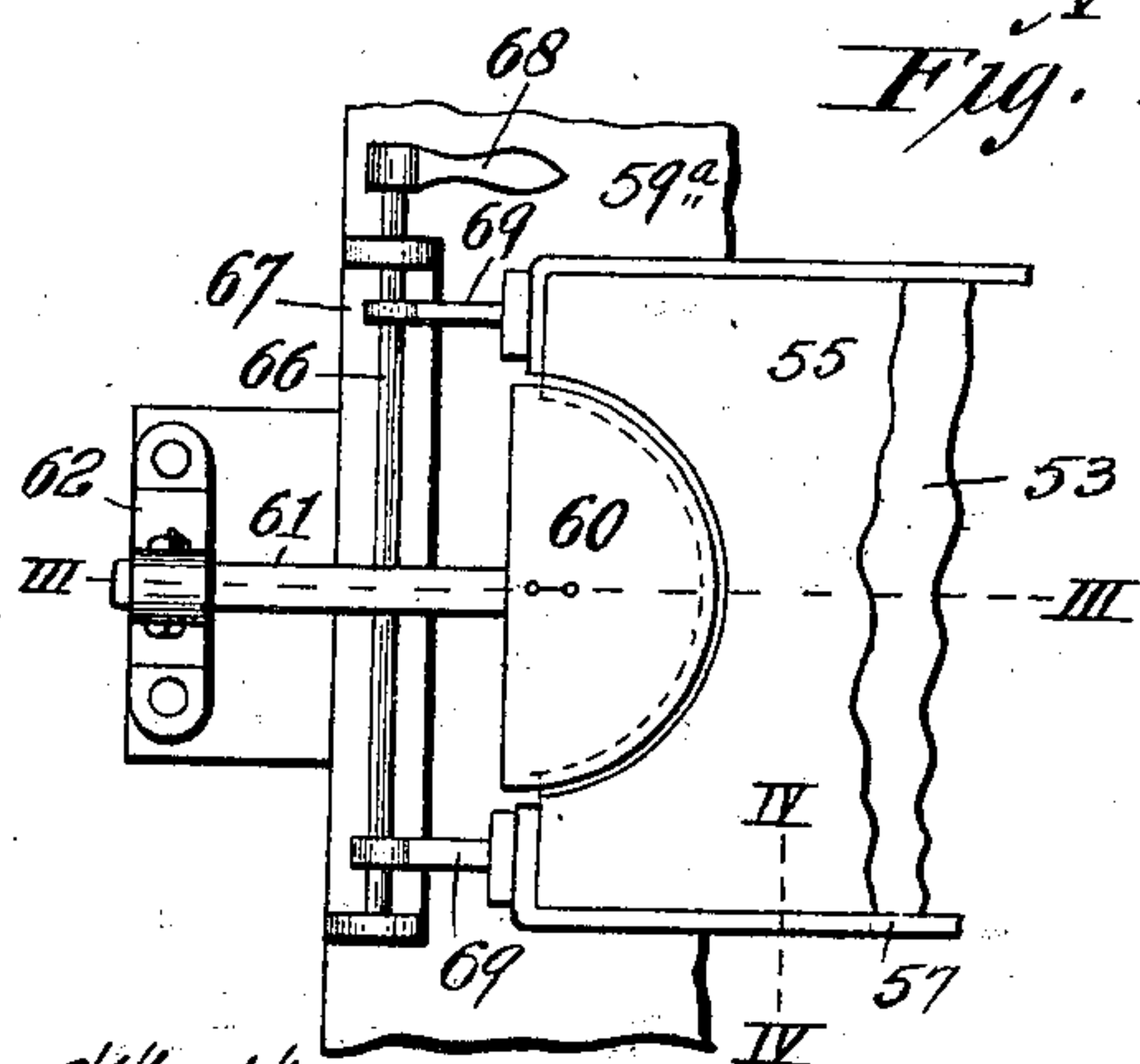


Fig. III.

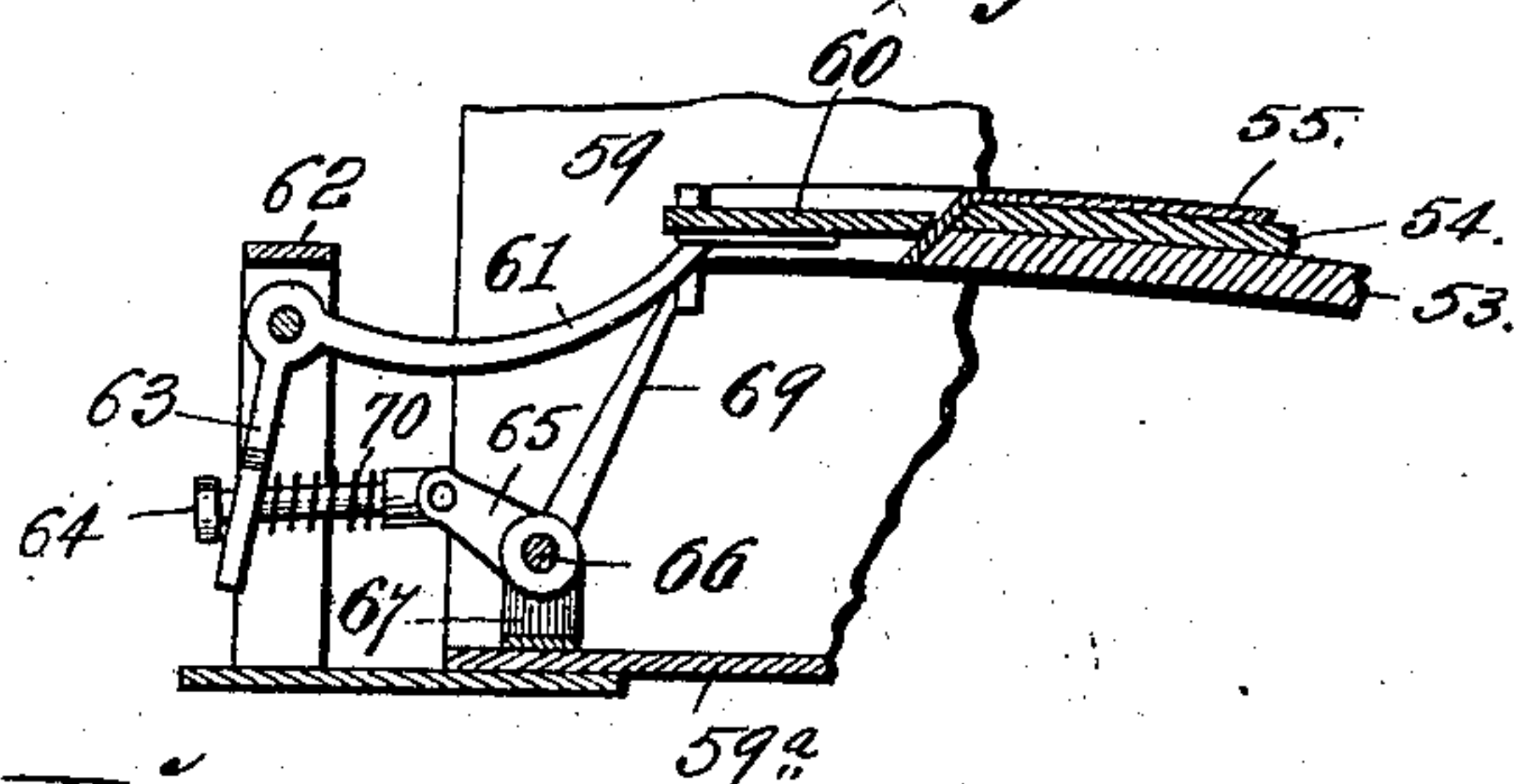
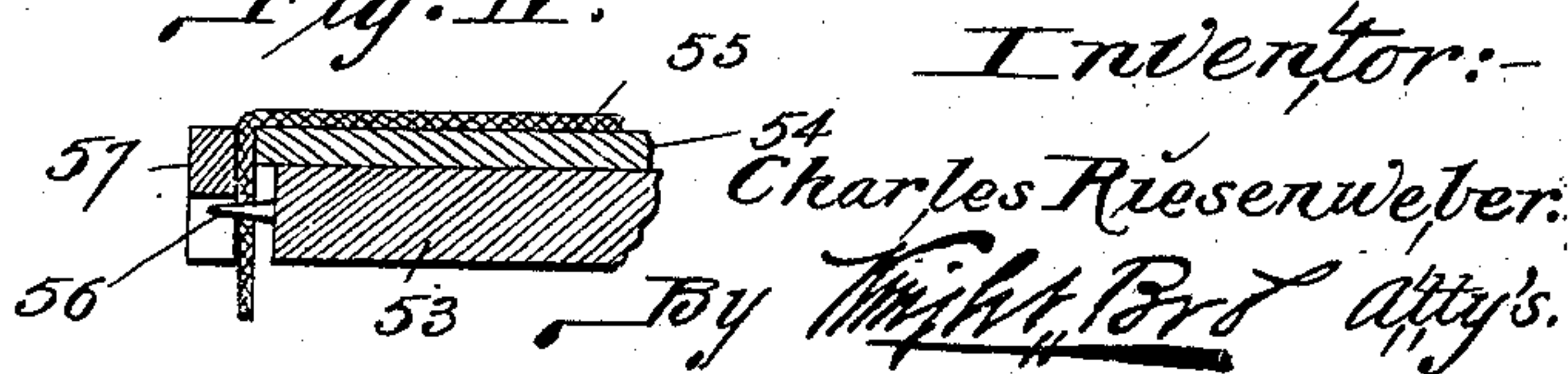


Fig. IV.



Attest M. Smith
E. Krivonozhko

Inventor:-

Charles Riesenweber.

By Wright, Brod & Atty's.

No. 658,074.

Patented Sept. 18, 1900.

C. RIESENWEBER.
IRONING MACHINE.

(Application filed Oct. 30, 1899.)

(No Model.)

4 Sheets—Sheet 2.

Fig. V.

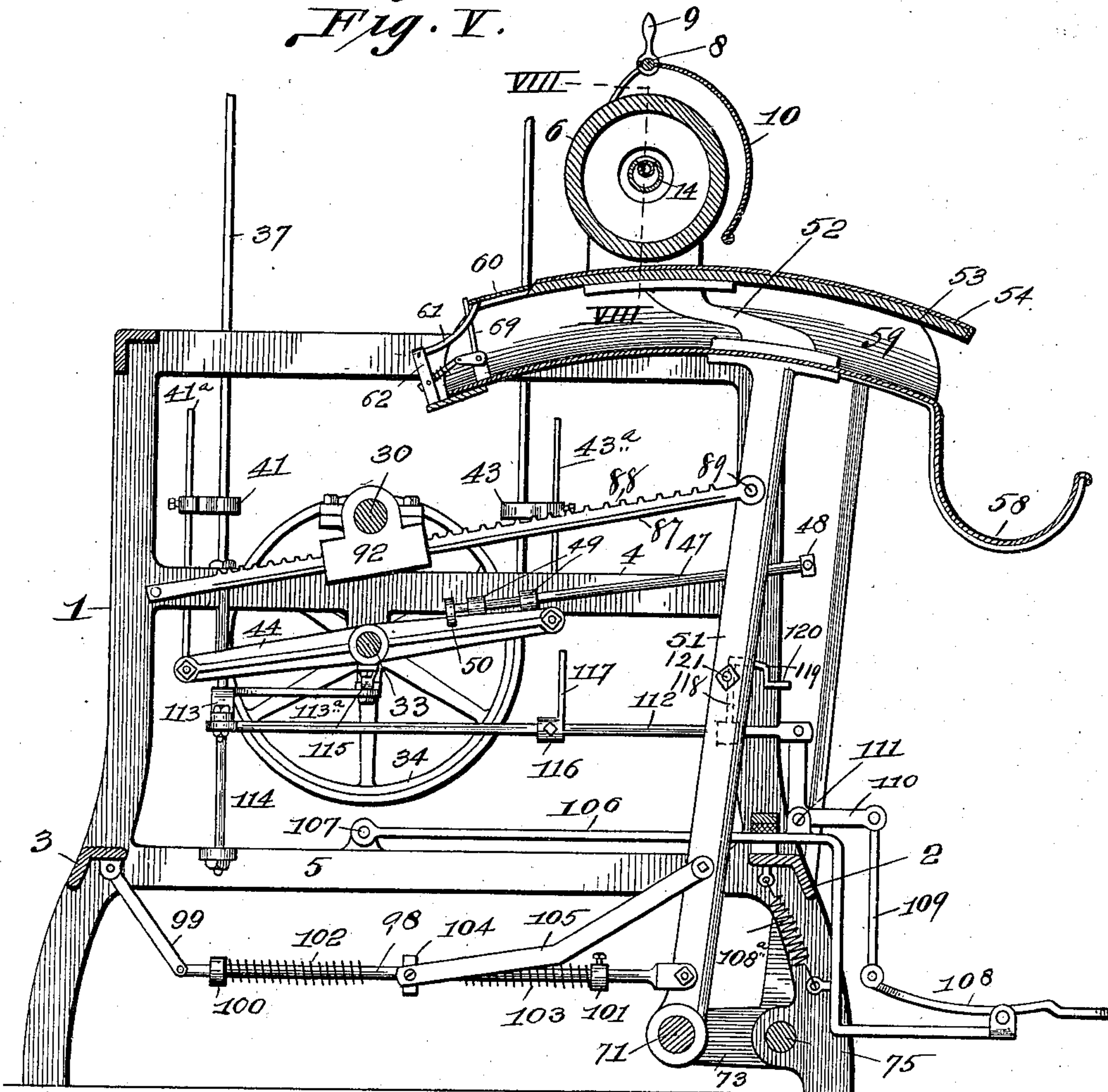
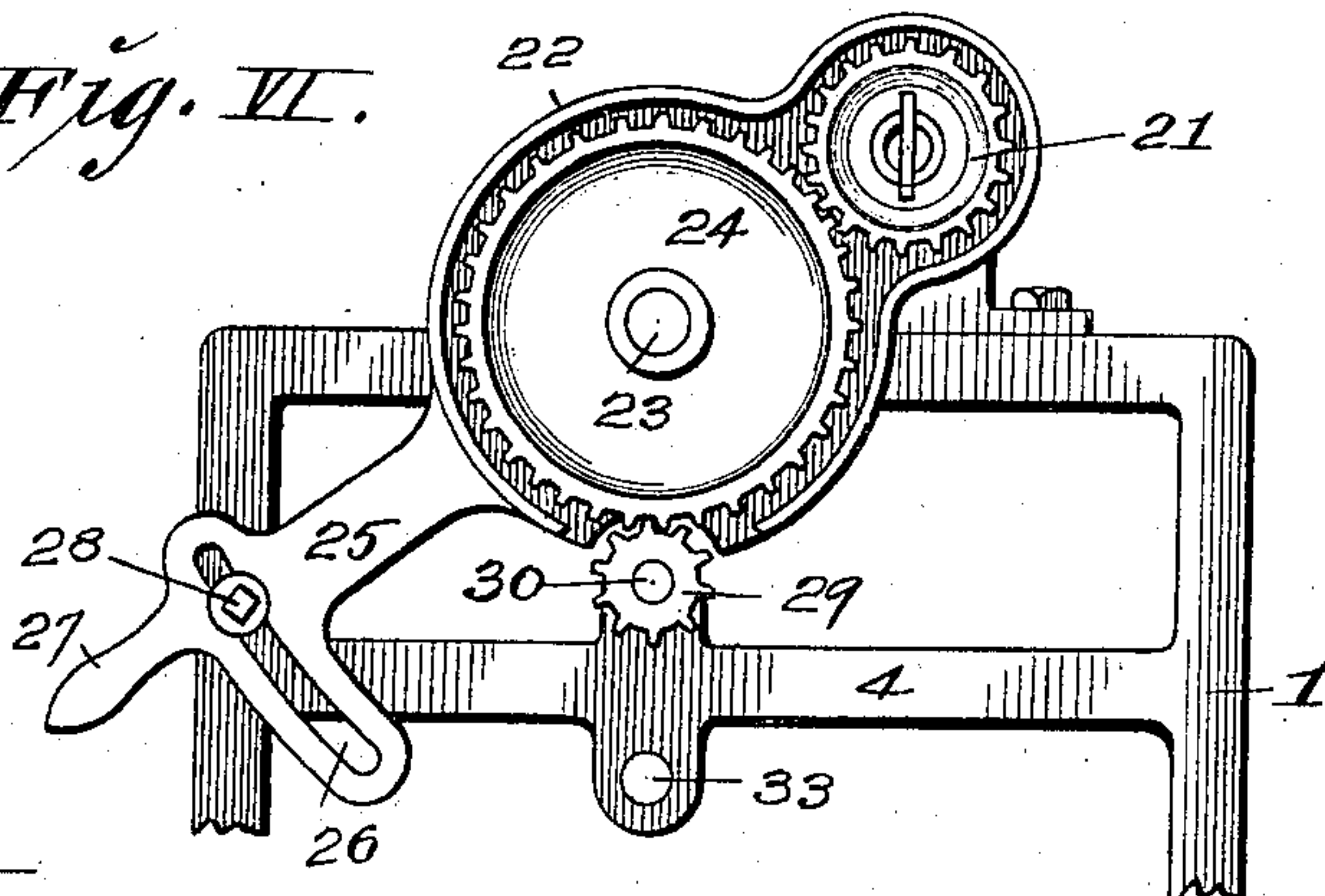


Fig. VI.



attest
W. B. Smith
E. A. Knight

Inventor:—
Charles Riesenweber:—
J. W. Wright, Bro. Atty's.

No. 658,074.

Patented Sept. 18, 1900.

C. RIESENWEBER.
IRONING MACHINE.

(Application filed Oct. 30, 1899.)

(No Model.)

4 Sheets—Sheet 3.

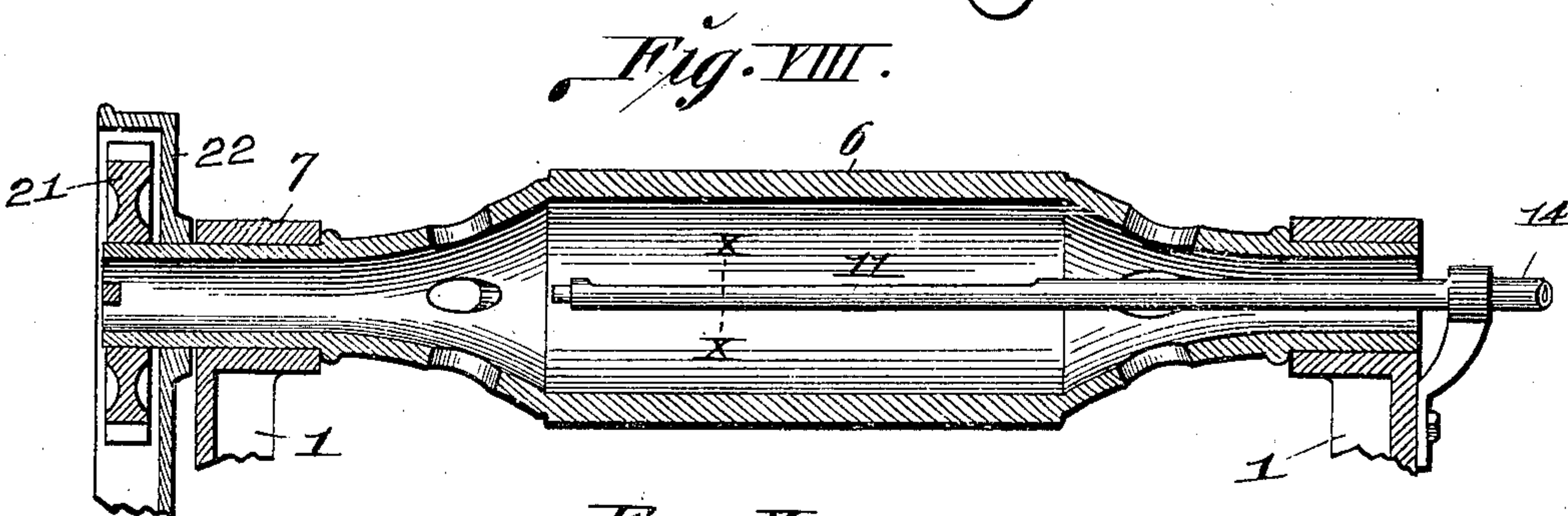
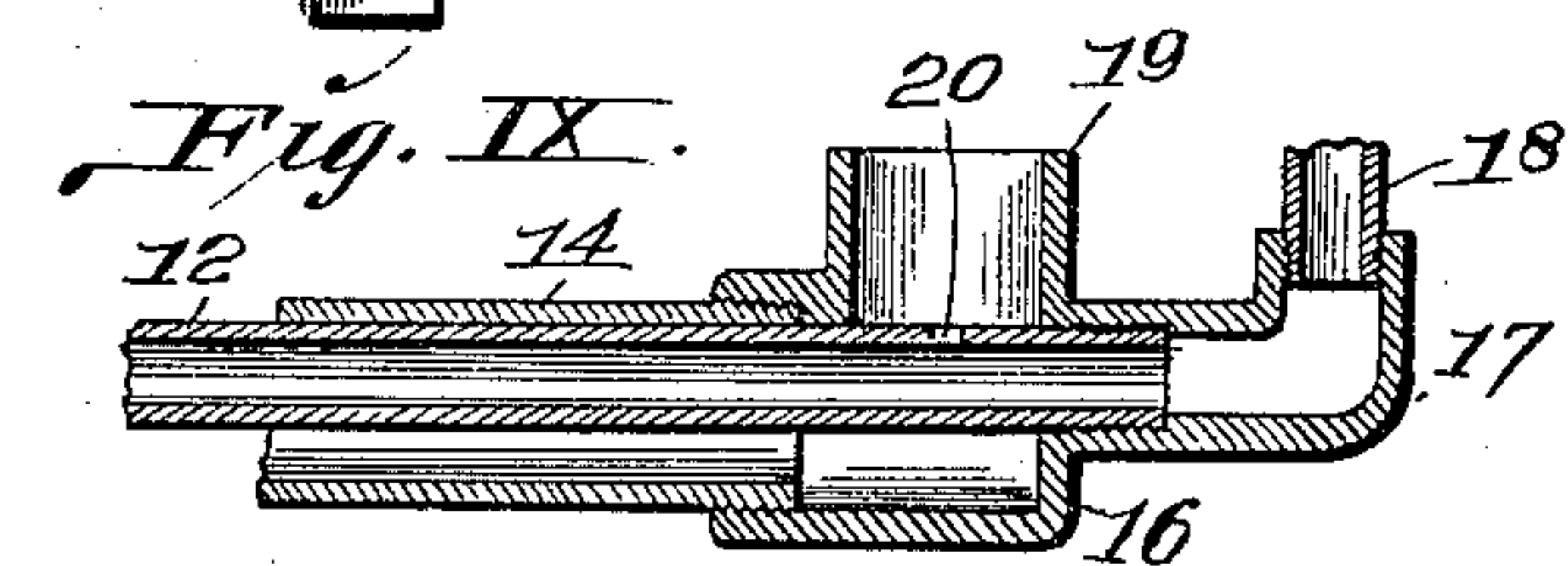
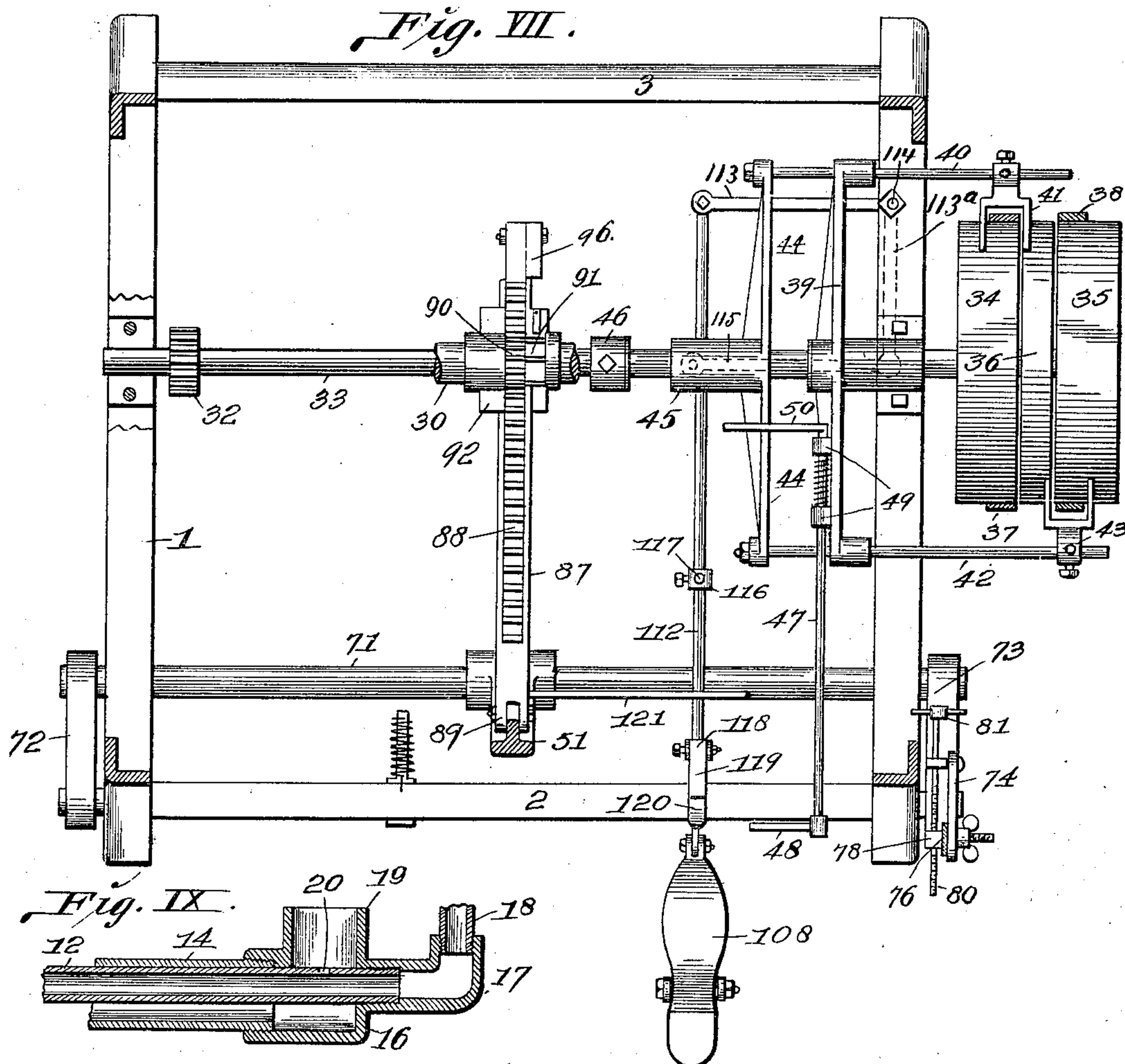
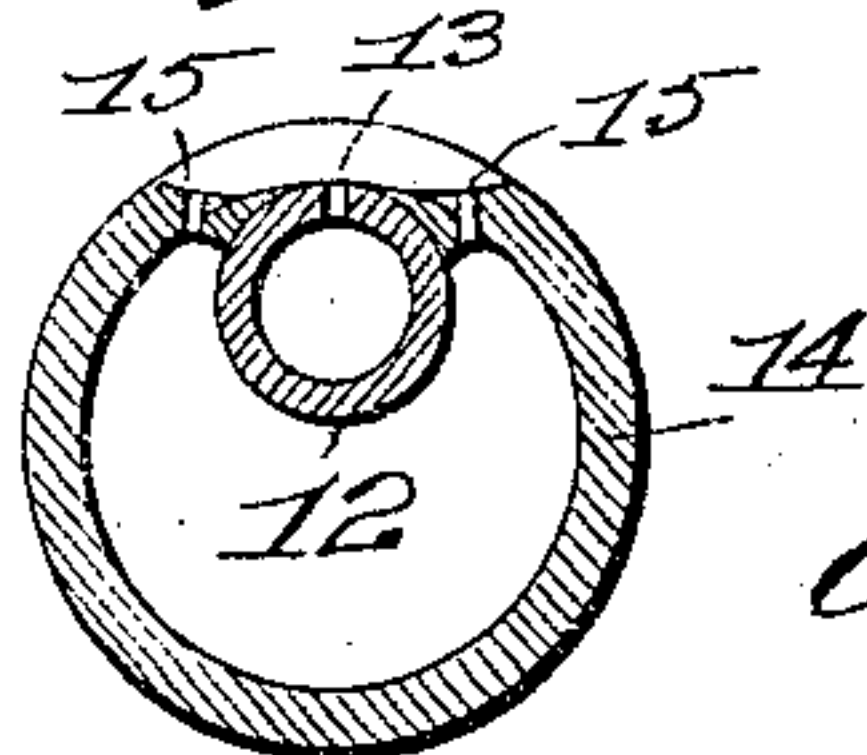


Fig. X.



Attest:
W. Smith
E. A. Wright

Inventor:
Charles Riesenweber:
By Thos. H. Port atty's.

No. 658,074.

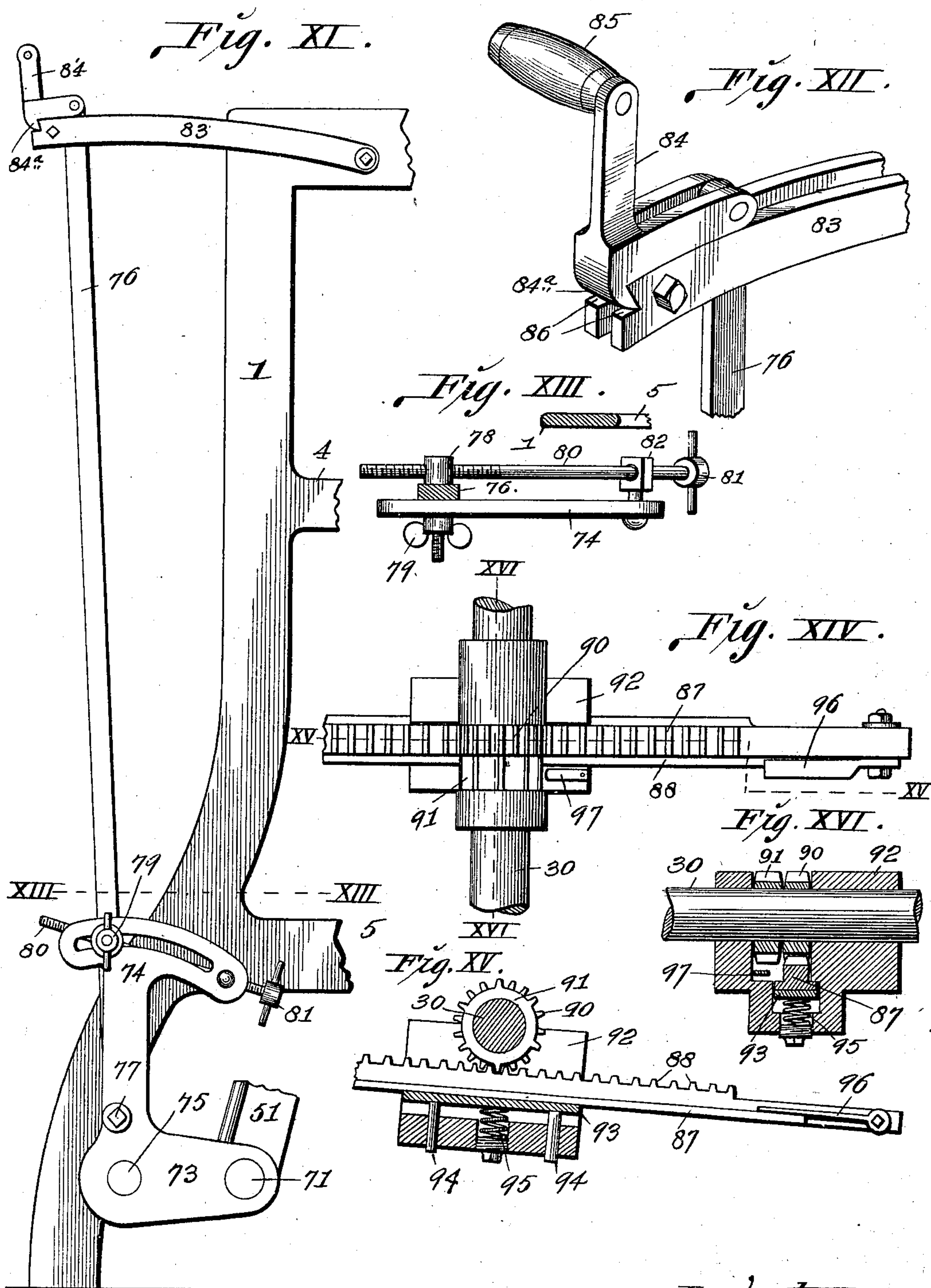
Patented Sept. 18, 1900.

C. RIESENWEBER.
IRONING MACHINE.

(Application filed Oct. 30, 1899.)

(No Model.)

4 Sheets—Sheet 4.



attest
my hand
E. A. Smith

Inventor:—
Charles Riesenweber:—
By Wright, Bro. & Co. atty's.

UNITED STATES PATENT OFFICE.

CHARLES RIESENWEBER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE PARAGON LAUNDRY AND MACHINE COMPANY, OF SAME PLACE.

IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 658,074, dated September 18, 1900.

Application filed October 30, 1899. Serial No. 735,236. (No model.)

To all whom it may concern:

Be it known that I, CHARLES RIESENWEBER, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Ironing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of ironing-machines especially intended for use in ironing the bosoms of shirts, the object of the invention being to so construct such a machine that it will be automatic in its operation and can be readily and quickly controlled at any time by the operator in starting or stopping the machine.

My invention consists in the novel construction of the machine in its various parts, as will be hereinafter described and claimed.

Figure I is a front elevation of my improved machine. Fig. II is an enlarged detail top view of the neckband-clamp. Fig. III is a vertical sectional view taken on the line III III, Fig. II. Fig. IV is an enlarged cross-sectional view taken on the line IV IV, Fig. II. Fig. V is a vertical sectional view taken on the line V V, Fig. I, through the central portion of the machine. Fig. VI is a detail view of the changeable gearing for operating the ironing-roll. Fig. VII is a horizontal sectional view taken on the line VII VII, Fig. I. Fig. VIII is a longitudinal sectional view taken on the line VIII VIII, Fig. V, through the ironing-roll. Fig. IX is an enlarged longitudinal sectional view of the gas and air inlet portion from which the supply of gas and air is conveyed to the burner within the ironing-roll. Fig. X is a cross-sectional view taken on the line X X, Fig. VIII, through the burner that heats the ironing-roll. Fig. XI is an enlarged detail view of the adjusting device for the ironing-table rocker. Fig. XII is an enlarged perspective view of the upper end of the adjusting-lever seen in Fig. XI and the catch-handle by which said lever is manipulated. Fig. XIII is a cross-sectional view taken on the line XIII XIII, Fig. XI, showing the adjusting-link in plan view. Fig. XIV is an enlarged

detail top view of the device by which the ironing-table rocker is operated. Fig. XV is a side view of the rocker-operating device, with parts thereof shown in vertical section, taken on the line XV XV, Fig. XIV. Fig. XVI is a cross-sectional view taken on the line XVI XVI, Fig. XIV.

1 designates the frame of the machine, provided with a forward cross-bar 2, a rear cross-bar 3, and side bars 4 and 5.

6 designates the ironing-roll, journaled in boxes 7 at the top of the machine. Suspended from a rod 8, provided with a handle 9, is a shield 10, that projects over and in front of the ironing-roll to protect the operator from the radiation of heat from said roll and also to avoid danger of the operator's hands being brought into contact with the roll when placing an article to be ironed upon the ironing-table.

The ironing-roll is heated by means of a burner 11, (shown in detail in Fig. X,) which is comprised of a gas-pipe 12, provided with apertures 13, and an air-tube 14, provided with apertures 15, so that the gas and air may discharge together into the interior of the ironing-roll and combine for consumption. The gas-pipe 12 and air-tube 14 extend to the exterior of the ironing-roll, (see Fig. VIII,) and they are joined to a box 16. (See Fig. IX.) The gas-pipe 12 is seated at its outer end in the leg 17 of the box 16, through which it receives a supply of gas from a pipe 18.

19 is an air-receiving chamber into which air may enter to pass through the tube 14 into the interior of the ironing-roll. Communication from the air-chamber 19 to the gas-pipe 12 is provided through an aperture 20 in said pipe, through which air may pass to mix with the gas as it is conveyed to the burner.

Fixed to the ironing-roll is a spur-wheel 21. (See Figs. VI and VIII.) Loosely mounted on the ironing-roll beside the spur-wheel 21 is a flanged plate 22, that is capable of being rocked on said roll, and mounted on an arbor 23, carried by said plate, is a gear-wheel 24, the teeth of which are arranged to mesh with the teeth of the spur-wheel 21. The plate 22 is provided with an arm 25, containing a slot 26 and having a handle 27.

28 is a set-screw secured to the frame of the machine and fitting in the slot 26.

The gear-wheel 24 receives the engagement of a driving-pinion 29, from which motion is transmitted through said gear-wheel to the spur-wheel 21 to drive the ironing-roll. The object in mounting the gear-wheel 24 on the movable plate 22 is to provide for the application of varied sizes of driving-pinions 29, through means of which arrangement the speed of the ironing-roll may be altered as found desirable. When the driving-pinion 29 is to be removed and replaced by another pinion, it is only necessary to loosen the set-screw 28 and elevate the gear-wheel-carrying plate 22 by grasping the handle 27. After the pinion has been put in place the gear-wheel 24 is brought into engagement therewith by lowering the plate 22, and the set-screw 28 is again tightened. The cog-wheel 29 is carried by a shaft 30, mounted in suitable bearings on the frame cross-bars 4.

Within the frame of the machine, on the shaft 30, is a gear 31, that meshes with a gear 32 on the main drive-shaft 33, mounted in bearings carried by the frame cross-bars 4. On the drive-shaft 33, exterior of the machine-frame, are two loose pulleys 34 and 35 and an intermediate tight pulley 36.

37 is a drive-belt adapted to travel on the loose pulley 34 or be thrown onto the intermediate tight pulley, and 38 is a drive-belt on the loose pulley 35, adapted to be thrown onto the tight pulley.

39 is a guide-bar fixed to the frame of the machine and provided at its ends with apertures that receive shifting-rods 40 and 42, equipped at their outer ends with shifting-forks 41 and 43 on uprights 41^a and 43^a. The shifting-forks 41 and 43, respectively, straddle the drive-belts 37 and 38. The inner ends of the shifting-rods 40 and 42 are mounted in arms 44, carried by a slidable shifting-collar 45, loosely mounted on the drive-shaft 33. The play of the collar 45 is limited by the guide-bar 39 and a set-collar 46 on the drive-shaft.

For the purpose of locking the belt-shifting mechanism I have provided a means whereby the arms of the shifting-collar 45 may be held from movement. This means comprises a rocking rod 47, provided with a handle 48 and mounted in eyes 49 on the guide-bar 39. The rocking bar is provided with a notched arm 50, (see particularly Figs. I, V, and VII,) that is adapted to be thrown into engagement with one of the shifting-collar arms 44 when both of the drive-belts 37 and 38 are on their loose pulleys, and whereby the shifting-collar is securely held to prevent the throwing of the drive-belts.

51 designates a rocker arranged to partake of a vibratory motion at its upper end and by which the ironing-table is carried, said table being fixed to an arm 52, carried by the rocker. The table comprises a plate 53, preferably of metal, on which is a pad 54, of rub-

ber, that is inclosed by a covering 55, of cloth, (see Fig. IV,) on which the ironing is accomplished. The plate 53 is provided with a series of prongs 56, projecting from the edge thereof, (see Fig. IV,) that receive the cloth covering 55 and retain it on the table when stretched thereover. The covering is confined to the table and upon the prongs by a notched metal band 57, that extends around the edge of table and the notches of which receive the prongs 56. (See Figs. I and IV.) In ironing the bosom of a shirt the shirt is stretched over the ironing-table, with the bosom lying thereon and the lower end of the shirt supported in the pocket 58, (see Figs. I and V,) while the sleeves of the shirt lie in the pockets 59, located at each side of the ironing-table. In this way the shirt is entirely supported to move with the ironing-table without any liability of its becoming soiled or caught in the parts of the machine. At the rear end of the table there is a concavity corresponding to the shape of the neckband of a shirt. The neckband is placed in this concavity and is held against the edge of the ironing-table by a clamping-plate 60, carried by the rocking bell-crank 61, pivotally mounted in a standard 62. (See Figs. II and III.) The opposite arm 63 of the bell-crank from that which carries the clamping-plate 60 is apertured to receive a headed stem 64, carried by a crank-arm 65. The crank-arm 65 is fixed to a rocking rod 66, mounted in a frame 67, seated on the plate 59^a, from which the side pockets 59 are formed. The rocking rod 66 is provided with a handle 68, by which it may be moved, and on this rod is a pair of arms 69, adapted to be thrown against the rear end of the ironing-table to hold the shirt placed therein firmly to the table. When a shirt is placed on the table, the clamping-plate 60 is first pressed inwardly and downwardly to bring it into contact with the neckband of the shirt, and the plate is held against the neckband by the spring 70, bearing against the bell-crank arm 63 of the bell-crank 61. The shirt is then properly adjusted on the table to cause it to lie smoothly thereon, this being permissible by reason of the shirt being held by the neckband only. After the shirt has been smoothed out the handle 68 is moved forwardly and the rocking rod 66 is turned to cause the arms 69 to be thrown against the portion of the shirt lying against the edge of the table to thereby hold the yoke of the shirt fixed in the same manner as is the neckband. When the parts have been moved into the positions described, the spring 70 holds the clamping-plate 60 against the neckband by reason of its pressing against the bell-crank arm 63, and the arms 69 are also held against the shirt by the spring 70, acting inwardly against the inner end of the stem 64 to hold the crank-arm 65 upwardly, as seen in Fig. III.

The lower end of the rocker 51 is mounted on a shaft 71, journaled in one end of a link 72 and in one end of a bell-crank-adjustment

link 73, having a slotted arm 74. (See Fig. XI.) The links 72 and 73 are rigidly connected to a shaft 75, journaled in bearings on the frame of the machine. These links 72 and 73 provide a pivotal support for the rocker, and the adjustment-link has means connected to it by which it may be set to accomplish the desired elevation of the ironing-table relative to the ironing-roll. It also has connected to it a lever for raising and lowering the rocker. These parts are constructed as follows:

76 designates a lever pivoted at 77 to the adjustment-link 73. This lever is equipped with a set-bolt 78, that passes through the slot in the link-arm 74, where it may be secured by a nut 79 to hold the lever in any desired position relative to the extent of the slot. Seated in the bolt 78 is a screw-rod 80, mounted in an arm 82, carried by the link-arm 74. The screw-rod 80 is provided with a handle 81, by which the rod may be manipulated to move the set-bolt 78 in the slot of the link-arm 74 on the loosening of the nut 79. By this arrangement the lower end of the adjustment-link to which the rocker-carrying shaft is connected may be raised or lowered to adjust the elevation of the ironing-table relative to the ironing-roll.

The ironing-table and its rocker are raised and lowered by the lever 76, the upper end of which is arranged in a guide 83, fixed to the machine-frame, and pivoted to the lever is a handle 84, provided with a grip 85, by which the lever may be moved. The guide 83 is provided at its outer end with a notch 86, that receives a catch 84^a, carried by the handle 84, the catch entering the notch when the lever is thrown outwardly and the ironing-table has been elevated to the ironing-roll, thereby holding the ironing-table elevated during the ironing operation. When the table is to be lowered, the handle 84 is raised to disengage the catch 84^a, and the weight of the ironing-table and its rocker causes the adjustment-link to be rocked inwardly, and the lever 76 consequently travels inwardly in the guide 83. The rocker 51 receives its driving power from the shaft 30 through the connection of a bar 87, having on its upper side a rack 88 and pivotally connected to the rocker at 89. (See Figs. V and VII.) The rack 88 meshes with the teeth of a pinion 90, carried by the shaft 30, whereby the motion of said shaft is transmitted to the bar 87 to operate the ironing-table rocker. Beside the pinion 90 on the shaft 30 is a toothed wheel 91, having teeth of less number than the teeth of said pinion, the purpose of which will presently be stated.

92 is a box loosely hung on the shaft 30 and forming a pocket or support in which the rack-bar 87 reciprocates.

The rack 88 is yieldingly held in engagement with the pinion 90 upon a supporting-plate 93, provided with guide-stems 94, seated in the bottom of the box 92 and upheld by a

spring 95, located beneath the plate. Pivotally connected to the rack-bar 87 at its rear free end is a dog 96, (see Figs. VII, XIV, and XV,) said dog being adapted to travel in the path of the toothed wheel 91. When the operation of the ironing-table is to be stopped, it is required that its movement cease at the end of the forward stroke, and in so doing the rack-bar 87 travels forwardly until the pinion 90 is out of mesh with the rack. At such time the pivoted dog 96 has been moved forwardly with the rack and occupies a position on the flat spring 97, carried by the box 92. (See Figs. VII, XIV, and XVI.) In such position the teeth of the wheel 91 travel in contact with the dog, each tooth depressing the dog against the upward pressure of the spring 97. When the ironing-table is to be again reciprocated in operation, the shaft 30 is reversed in motion, and one of the teeth of the wheel striking against the end of the pivoted dog 96 causes the rack-bar to be moved a requisite distance rearwardly to cause the first engaging tooth of the pinion 90 to properly mesh with the first tooth of the rack 88, thereby avoiding danger of improper meshing and liability of breaking the pinion or the rack-teeth. To prevent any sudden jarring in the end of the stroke of the rocker 51, I have provided a buffer device, which consists of the following:

98 designates a rod one end of which is pivoted to the rocker at its lower end (see Fig. V) and the opposite end of which is pivotally connected to a supporting-link 99, hinged to the frame cross-bar 3. On the rod 98 are collars 100 and 101, that confine springs 102 and 103, surrounding the rod.

104 is a slidable bumper loosely mounted on the rod 98 between the springs 102 and 103. The said bumper is connected to the rocker 51 by a link 105. On each stroke of the rocker the bumper 104 is brought against either the spring 102 or 103, thereby relieving the rocker from any jarring action when it reaches the end of its stroke.

106 designates a foot-lever pivoted at 107 to the frame cross-bar 5 and having its outer free end projecting beyond the front of the machine, where it receives the pivotal connection of a treadle 108. The foot-lever is sustained by a spring 108^a, connected to said lever and to the frame cross-bar 2. The inner or toe end of the treadle 108 is pivoted to a link 109, which is in turn pivoted to one end of a bell-crank 110, pivoted at 111 to the foot-lever. The opposite end of the bell-crank 110 has pivoted to it a connecting-rod 112, that leads rearwardly and is pivoted to one end of a bell-crank 113. The bell-crank 113 is pivotally mounted upon an upright rod 114, secured to the frame cross-bars 4 and 5. The forwardly-projecting arm 113^a of the bell-crank 113 is pivotally connected to a link 115. The link 115 is joined to the belt-shifting collar 45.

To set the machine in operation, the treadle

108 is depressed by the operator placing his foot thereon. He then depresses the toe portion of the treadle, moving the connecting-rod 112 forwardly, rocking the bell-crank 113, and thereby moving the link 115 to carry the shifting-collar 45 toward the driving-pulley of the machine. By so doing the shifting-arms 44 are moved outwardly and carry the rods 40 and 42 in a corresponding direction. This results in the shifting-fork 41 carrying the belt 37 onto the pulley 36 and setting the driving-shaft 33 and the parts leading therefrom into motion, when the ironing-table will be reciprocated beneath the ironing-roll. To provide for the automatic and continued operation of the machine, so that the article being ironed may be passed over several times by the ironing-roll, I apply to the connecting-rod 112 an adjustable collar 116, provided with an arm 117, and also an upright 118, that is adjustably fixed to the connecting-rod and provided with a forwardly-projecting arm 119, having a step 120.

121 is a rod carried by and projecting from the rocker 51 across the connecting-rod 112 between the arm 117 and upright 118. Each time that the rocker travels rearwardly, carrying the ironing-table therewith, the rod 121 strikes the arm 117 and moves the parts leading to the shifting-collar 45, thereby carrying the belt 37 from the tight pulley 36 to the loose pulley 34 and the belt 38 from the loose pulley 35 to the tight pulley 36, thereby reversing the motion of the machine. Then as the rocker reaches the other end of the stroke the rod 121 strikes the upright 118, shifts the connecting-rod 112, and reverses the position of the parts, again throwing the belt 37 to the tight pulley and reversing the motion. These actions go on continuously, reversing at the end of each stroke of the rocker until the ironing is accomplished. When it is desired to stop the ironing operation, the foot-lever 106 is depressed against the sustaining action of the spring 108^a by pressing directly downwardly upon the treadle 108, thereby lowering the forward end of the connecting-rod 112 with the foot-lever. Then as the rocker moves forwardly the rod 121, carried thereby, travels past the upright 118 instead of stopping thereagainst. At this time the operator's foot is removed from the treadle, and the spring 108^a elevates the foot-lever, carrying the connecting-rod upwardly, so that the rod 121 is caught in the step 120 of said upright, thereby holding the rocker from a return movement. It will be understood that in the extreme forward movement of the rocker the rack-bar 87 is carried therewith, so that the teeth of the rack 88 are removed from the engagement of the driving-pinion 90, and therefore the rack is out of driving connection with the driving mechanism. It has been explained that when the rocker is to be again put into motion the dog 96, carried by the rack-bar, engages the toothed wheel 91 on the shaft 30 and causes

the proper meshing of the pinion 90 with the rack 88.

By employing a changeable-gear arrangement consisting of the plate 22, carrying the gear-wheel 24, that meshes with the spur-wheel 21 and pinion 29, I obtain a most valuable feature, in that this construction enables the attainment of variable speeds of the ironing-roll. By driving the ironing-roll at different speeds I am enabled to produce finishes of different natures upon the bosom of the shirt being ironed. If the finish desired is an unglossed one, or what is known as "domestic" finish, the ironing-roll is driven at a slow speed by using a small pinion 29. If a glossy finish is desired, a larger pinion 29 is used, the size of the pinion increasing according to the intensity of the gloss to be produced.

I claim as my invention—

1. In an ironing-machine, the combination of a revolving ironing-roll, a reciprocating ironing-table, a rocker on which said table is mounted, means for operating said rocker, links to which said rocker is pivotally connected, a swinging lever connected to one of said links, and a handle carried by said lever by which it may be moved to operate said links and raise and lower the ironing-table, substantially as described.

2. In an ironing-machine, the combination of a revolving ironing-roll, a reciprocating ironing-table, a rocker on which said table is mounted, links to which said rocker is pivotally connected, means for operating said rocker, a lever connected to one of said links, a notched guide in which said lever operates and a pivoted handle connected to said lever and arranged to engage said guide, substantially as described.

3. In an ironing-machine, the combination of a revolving ironing-roll, a reciprocating ironing-table, a rocker on which said table is mounted, means for operating said rocker, an adjustment-link to which said rocker is pivotally connected, and a lever adjustably connected to said link, substantially as described.

4. In an ironing-machine, the combination of a revolving ironing-roll, a reciprocating ironing-table, a rocker on which said table is mounted, means for operating said rocker, a pivoted adjustment-link to which said rocker is pivotally connected, said link being provided with a slotted arm, a lever connected to said link, an adjustment-bolt carried by said lever, and fitting in the slot in said arm, and a screw-rod carried by said link fitted in said adjustment-bolt, substantially as described.

5. In an ironing-machine, the combination of an ironing-table having a recess for the neckband of a shirt, a swinging support having a clamp-plate adapted to be moved into and out of the recess, a rock-shaft having arms adapted to be moved toward and from the table, means whereby the rock-shaft is mounted independently of the swinging sup-

port, and means whereby the rock-shaft is connected with the swinging support so that the movement of the rock-shaft controls the movement of the swinging support; substantially as described.

6. In an ironing-machine, the combination of a table having a recess in one end thereof, a clamp-plate adapted to enter said recess, a pivoted bell-crank by which said plate is carried, a rocking shaft, arms carried by said rocking shaft adapted to be thrown against the end of said table, a crank-arm carried by said shaft, a stem carried by said crank-arm fitting in said bell-crank, and a spring on said stem bearing against said bell-crank, substantially as described.

7. In an ironing-machine, the combination of a reciprocating table, a rocker on which said table is carried, means for operating said rocker, a rack connected to said rocker, a driven pinion arranged to engage said rack, a toothed wheel located beside said pinion, said toothed wheel being provided with fewer teeth than said pinion, and a dog carried by said rack adapted to engage the teeth of said toothed wheel, substantially as described.

8. In an ironing-machine, the combination of a reciprocating table, a rocker by which said table is carried, means for operating said rocker, a rack carried by said rocker, a box in which said rack operates, a driven pinion adapted to engage said rack, a toothed wheel located beside said pinion having fewer teeth than the pinion, a spring mounted on said box, and a dog carried by said rack adapted to travel onto said spring and to engage the teeth of said toothed wheel, substantially as described.

9. In an ironing-machine, the combination of a reciprocating ironing-table, a rocker by which said table is carried, means for operating said rocker, a rack carried by said rocker, a box in which said rack operates, a spring-supported plate in said box on which the rack bears, and a driven pinion adapted to engage said rack, substantially as described.

10. In an ironing-machine, the combination of a reciprocating ironing-table, a rocker by which said table is carried, means for operating the rocker, pulleys, a belt-shifter, a connecting-rod having connection with said belt-shifter, an adjustable arm carried by said connecting-rod, an adjustable upright

carried by said rod and having a stepped arm, and a rod carried by said rocker adapted to strike against said arm and upright and to engage in the step of the arm of said upright, substantially as described.

11. In an ironing-machine, the combination of a reciprocating ironing-table, a rocker by which said table is carried, pulleys, a belt-shifter, a connecting-rod having connection with said belt-shifter, a foot-lever, and a treadle pivotally connected to said foot-lever and having connection to said connecting-rod, substantially as described.

12. In an ironing-machine, the combination of a reciprocating ironing-table, a rocker by which said table is carried, pulleys, means for operating said rocker, a belt-shifter, a connecting-rod, a foot-lever, a spring for sustaining said foot-lever, a treadle pivotally connected to said foot-lever and having connection to said connecting-rod, substantially as described.

13. In an ironing-machine, the combination of an ironing-roll, a reciprocating ironing-table, a rocker by which said table is carried, means for operating said rocker, a rod connected to said rocker and to the frame of the machine, a bumper on said rod, springs on said rod against which said bumper may strike, and a connection between said bumper and said rocker; substantially as described.

14. In an ironing-machine, the combination of a reciprocating ironing-table, a rocker by which said table is carried, means for operating said rocker, a rod connected to the lower end of said rocker and to the frame of the machine, springs on said rod, a bumper slidable on said rod, and a link connecting said bumper and said rocker, substantially as described.

15. In an ironing-machine, the combination of a reciprocating ironing-table, means for moving said table, a revolving ironing-roll, a driven shaft, a removable pinion on said shaft, a spur-wheel carried by said ironing-roll, a plate movably mounted on said ironing-roll, and a gear-wheel carried by said plate arranged to mesh with said pinion and said spur-wheel, substantially as described.

CHARLES RIESENWEBER.

In the presence of—

E. S. KNIGHT,
M. P. SMITH.