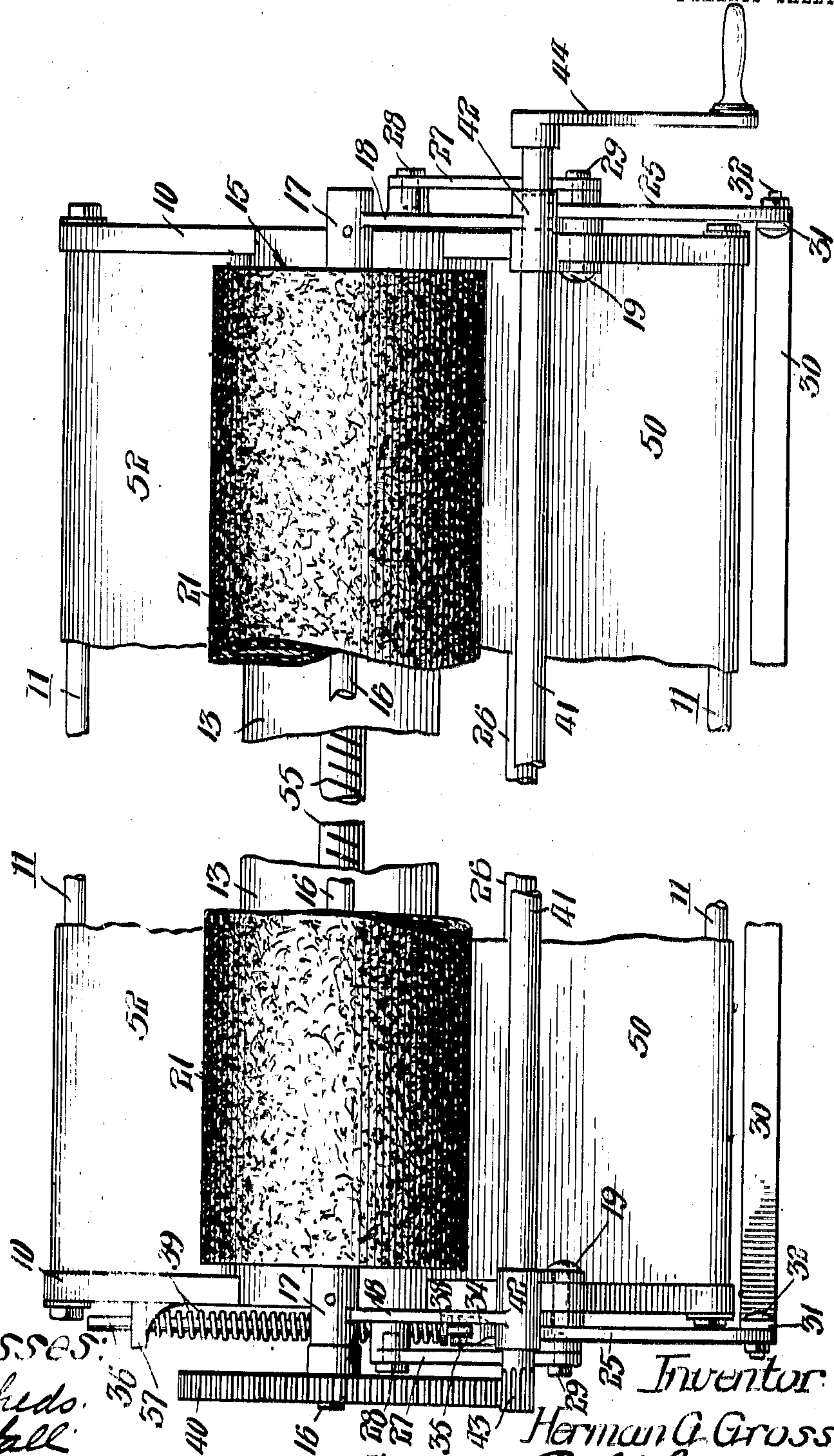


H. G. GROSSE.
IRONING MACHINE.
APPLICATION FILED OCT. 4, 1907.

914,716.

Patented Mar. 9, 1909.
2 SHEETS—SHEET 1.

Fig. 1



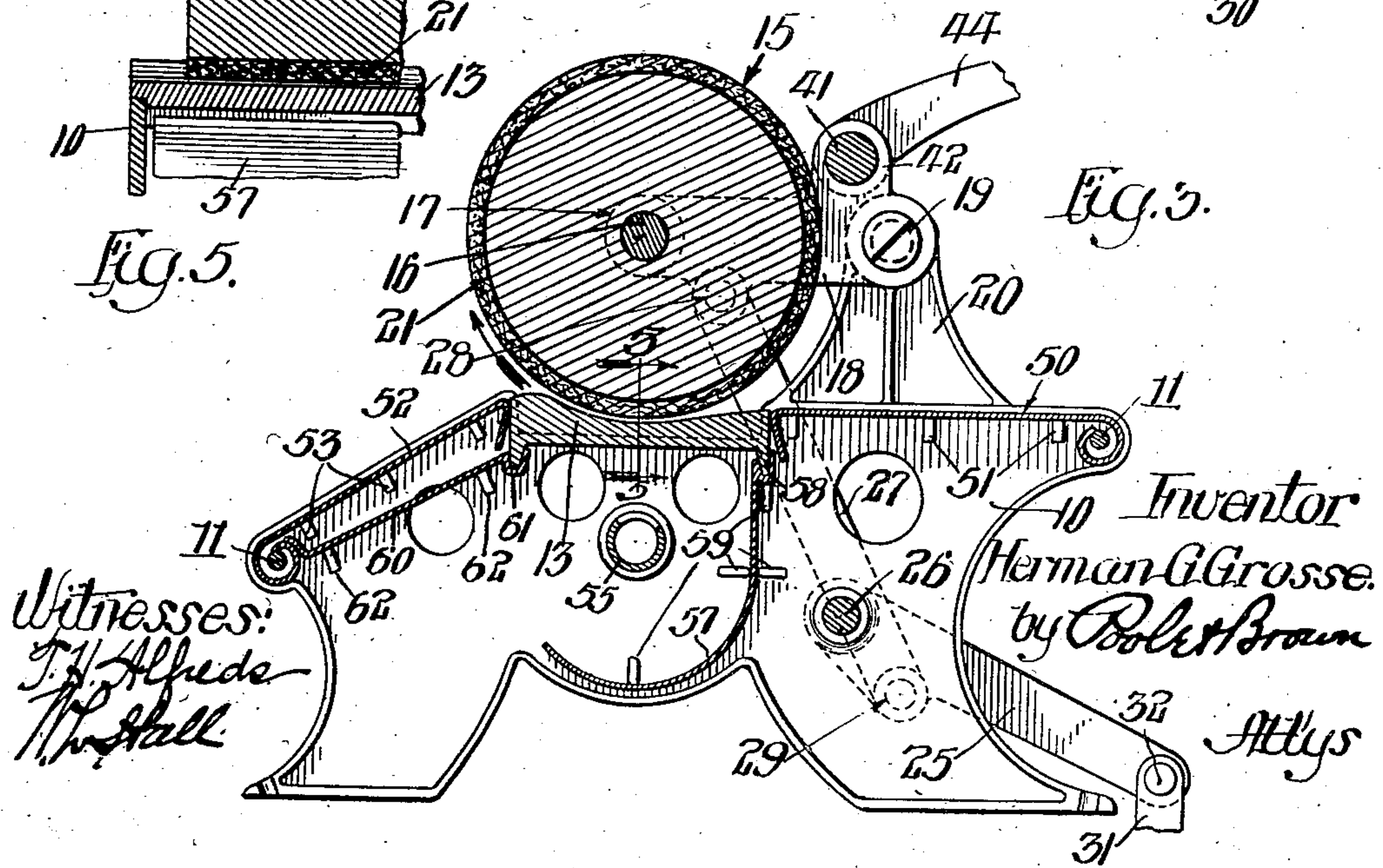
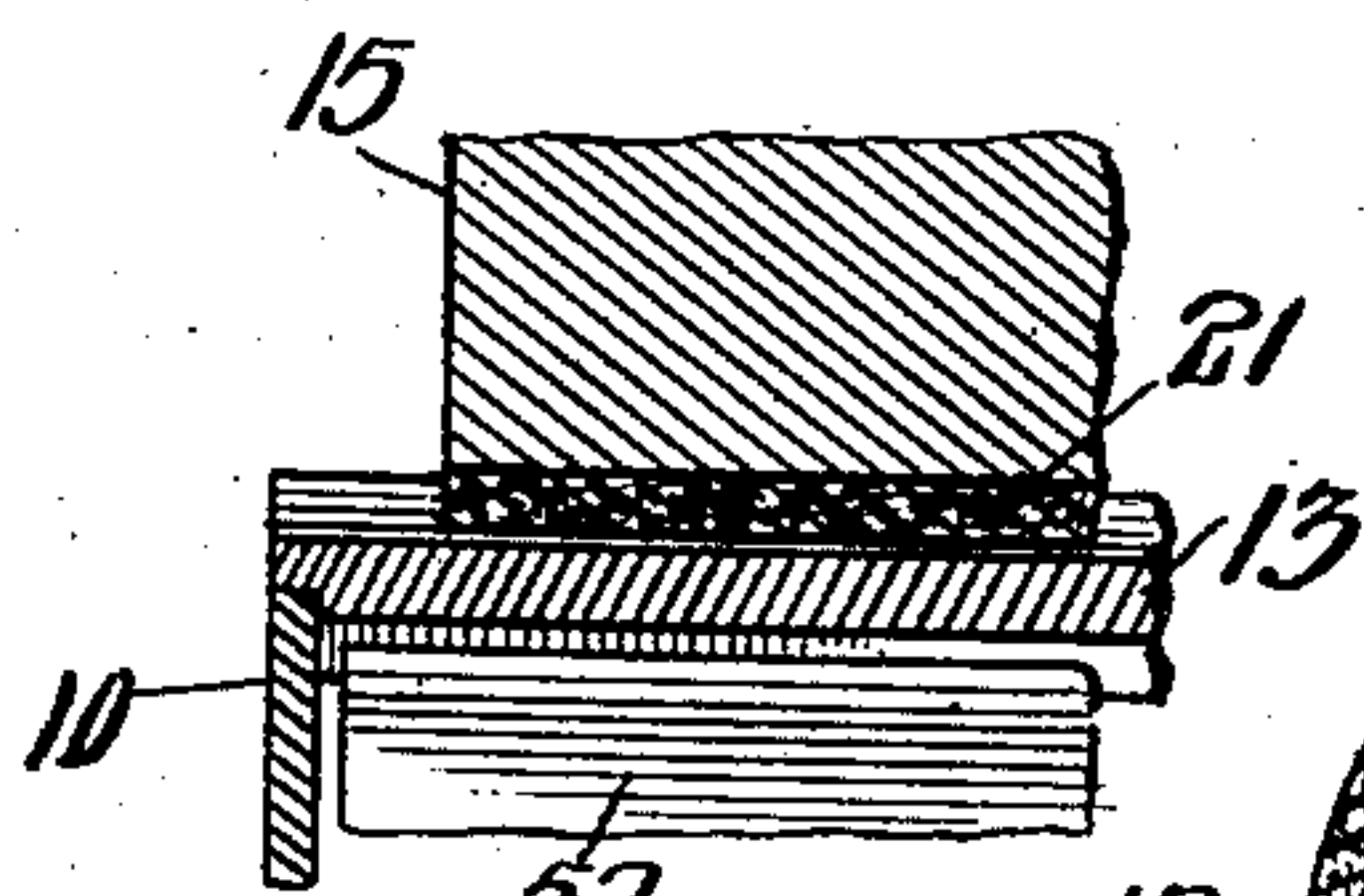
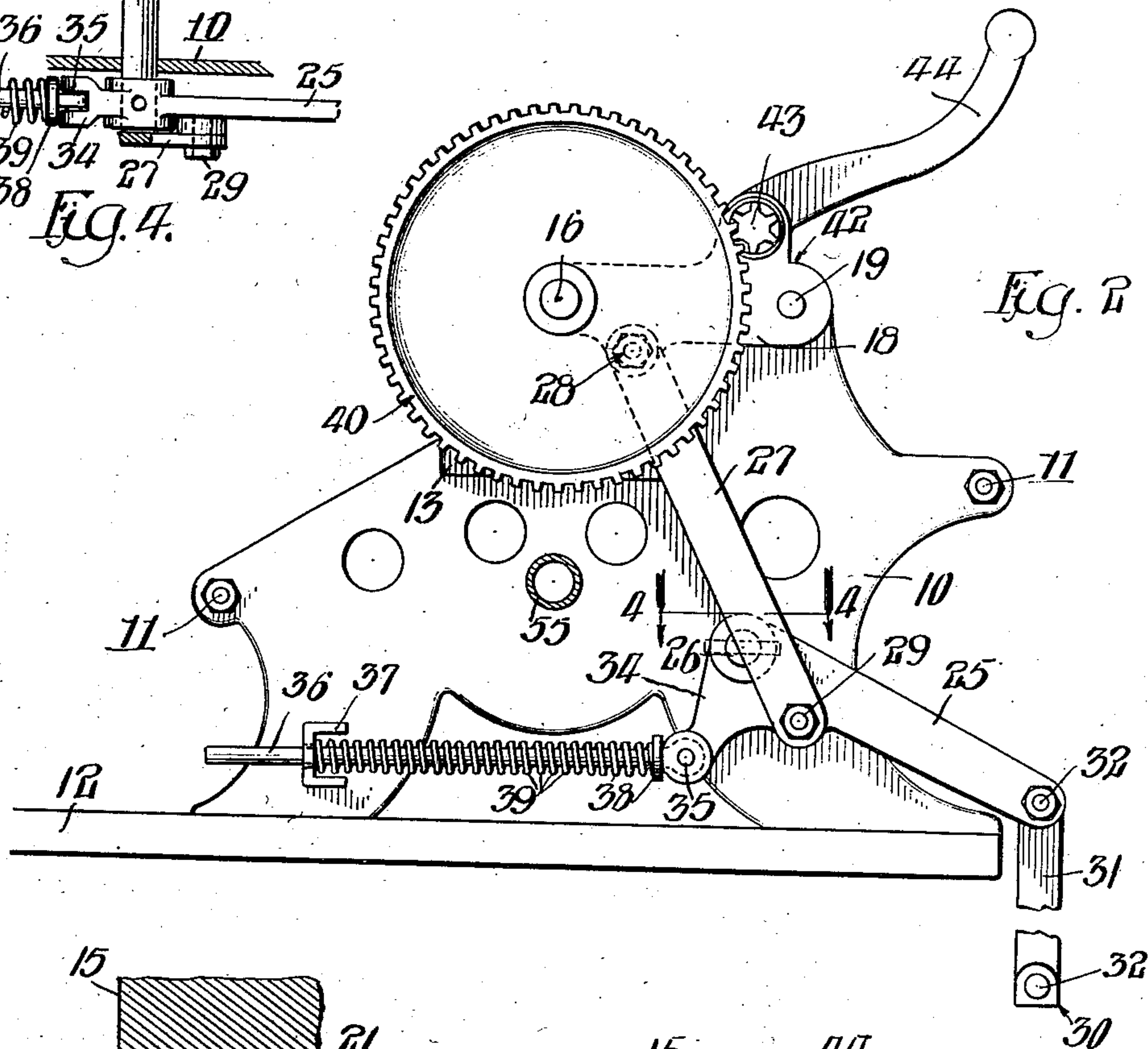
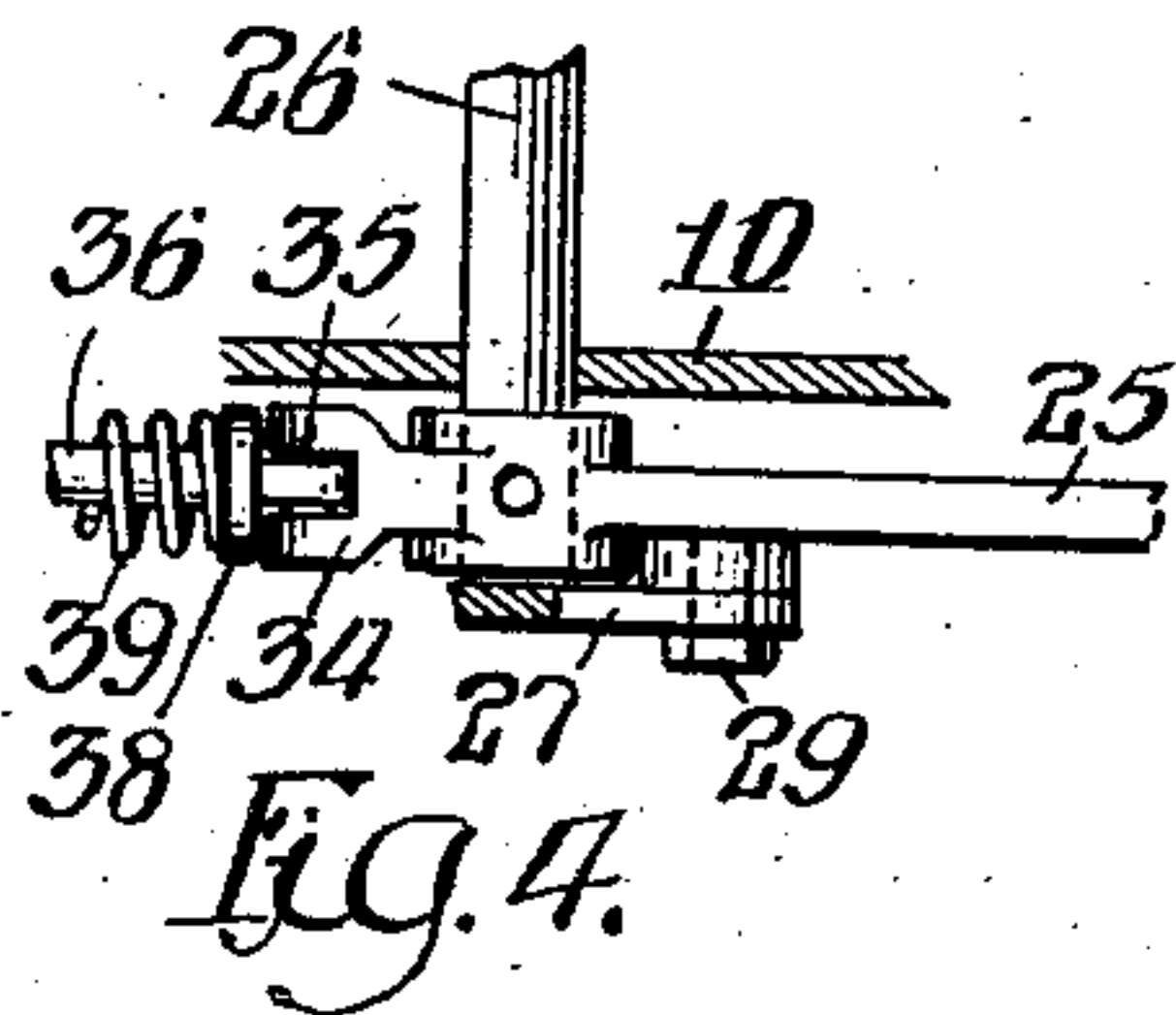
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 IRONING MACHINE.
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 2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

HERMAN G. GROSSE, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN IRONING MACHINE CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

IRONING-MACHINE.

No. 914,716.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed October 4, 1907. Serial No. 395,849.

To all whom it may concern:

Be it known that I, HERMAN G. GROSSE, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ironing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates to improvements in ironing machines for ironing flat work such as bed sheets, table linen and the like, and the invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

Among the objects of my invention is to provide a simple, inexpensive and efficient ironing machine designed more particularly for household use.

As shown in the drawings:—Figure 1 is a top plan view, with parts broken away, of an ironing machine made in accordance with my invention. Fig. 2 is an end view thereof. Fig. 3 is a transverse section. Fig. 4 is a section taken on line 4—4 of Fig. 2. Fig. 5 is a fragmentary section taken on line 5—5 of Fig. 3.

The frame of the machine consists of two vertical end members 10, 10 and tie-rods 11, 11 extending between and connecting said end members. The said machine is designed to rest upon a suitable horizontal support, as a table 12, and may be attached thereto by bolts or screws extending through bolt holes provided in said frame members, as shown in Fig. 3.

13 designates a horizontal ironing shoe which extends between and is supported at its ends by the end members in the manner shown in Fig. 5, the ends of the shoe being recessed to fit the upper margins of the end members. Said shoe is provided with an upwardly facing, smooth concave surface against which the articles to be ironed are pressed and over which they are advanced by means of a pressing roll 15 located above the ironing shoe, and movable toward and away therefrom. The shaft 16 of said roll is mounted at its ends in bearing sleeves 17 of roll supporting arms 18, 18, one at each end of the machine, which are pivoted at their forward ends by pivot pins or studs

19 to standards 20 rising from or constituting parts of said end members. The roll 15 is provided with a yielding cylindric face 21, made of felt or like material, as is common in machines of this type. The said roll is normally held elevated from the ironing shoe by a spring device, hereinafter to be described, and is pressed toward the shoe to press the work between the roll and shoe by means which will now be described.

25, 25 designate roll actuating levers which are located one at each end of the machine. Said levers are fixed to the opposite ends of a horizontal rock-shaft 26 located below and in front of the roll and extending between and rotatively mounted in suitable bearings in the end members of the frame. The levers extend forwardly and downwardly from said rock-shaft. 27, 27 designate links which are pivoted at their upper ends by bolts or pins 28 to the roll supporting arms between the ends of the latter and are pivoted at their lower ends by other pivot bolts or pins 29 to said roll operating levers in front of said rock-shaft 26. 30 designates a treadle bar extending from side to side of the machine at the front end thereof, and it is connected at its ends with said levers 25 by links 31, 31 which are pivoted at their upper and lower ends to said levers and treadle bar by pivot pins or bolts 32. Downward pressure on said treadle bar operates through said levers 25, the links 27 and the roll supporting arms to force the pressing roll against the work on the ironing shoe. The table or support 12 is elevated a distance above the floor and the machine is supported near one margin thereof so that the roll operating levers, from which the treadle bar is suspended, may project beyond said support. One of said roll operating levers 25 is provided with a short integral arm 34 extending downwardly and rearwardly therefrom. To the lower end of said arm is pivoted, by means of a pivot pin 35, one end of a rod 36 which extends rearwardly and has sliding engagement at its rear end with an apertured guide lug 37 formed on the adjacent end member of the frame. Surrounding said rod and interposed between the lug 37 and a disk or washer 38, near the pivoted end of the rod, is a spiral expansively acting spring 39 which operates to swing the arm 34 of the adjacent roll actuating lever 25 forwardly and, through its connections with

the roll supporting arms, to raise the roll from the ironing shoe. By reason of the fixed attachment of the levers 25 to the rock-shaft 26 the force of said spring 39 is exerted on both ends of the rock-shaft to lift the roll through the links 27. The arm 34 of the roll operating lever against which the spring directly acts constitutes in effect a crank of the rock-shaft, and when so considered may be located otherwise than shown. Said spring 39 thus serves to normally hold the roll raised from the shoe and the roll is forced toward the shoe by pressure applied to the treadle bar against the action of said spring. Said roll is rotated in a direction to advance the work between it and the shoe and pass said work over the shoe for the purpose of ironing the same by mechanism made as follows: Fixed to one end of the shaft 16 of said roll is a gear wheel 40. 41 designates a horizontal operating shaft which extends between the end members of the frame in front of the roll and is rotatively mounted at its ends in bearing lugs 42 rising from and carried by the roll supporting arms 18. Said operating shaft is provided at one end with a pinion 43 which meshes with said gear wheel 40 and is provided at its other end with a crank 44 by which the shaft is rotated. As herein shown said pinion 43 is formed directly on the shaft but may, obviously, be otherwise applied. By reason of the fact that the bearing lugs 42 in which the operating shaft is rotatively mounted are carried by the roll supporting arms 18, it will be observed that the meshing engagement of the pinion with the gear is not effected in any manner by the raising and lowering of the pressing roll. In other words, both of the gears 40 and 43 are movable with the roll supporting arms and are therefore raised and lowered with the roll.

50 designates a feed plate located in front of the roll over which the work is fed to the space between the ironing shoe and the roll. Said feed plate may be made of sheet metal and is supported at its ends on the end members of the frame through the medium of lugs 51 extending inwardly from the inner faces of said end members. The rear margin of said plate is shown as curved about one of the rods 11 in order to avoid an obstruction at the feed end of the machine.

52 designates a downwardly inclined plate located in rear of the ironing shoe and roll over which the work is discharged from the machine. Said plate may also be made of sheet metal and is supported at its ends on lugs 53 formed integral with the end members.

The ironing shoe is heated through the medium of a burner pipe 55 which is located horizontally beneath the said shoe and is supported at its ends in the end members of

the frame. The said burner pipe is slitted at its top for the egress of the products of combustion of the gas which is supplied to the pipe. Said pipe may be connected in any suitable manner, not herein shown, with a source supplying a burning gas. In order to confine the heat of the flame issuing from the burner pipe to the space beneath the ironing shoe and to prevent the heat radiating forwardly and downwardly so as to unduly heat the support and the space in which the operator stands, I provide a shield 57 which is located in front of and below the burner pipe and extends between and is supported at its ends on the end members of the frame. As herein shown, the said shield, which may be made of any suitable material, is provided at its upper edge with a grooved portion 58 which fits a depending rib on the rear edge of the ironing shoe and it is held in place by lugs 59 formed on the inner faces of said end members and engaging the side faces of the shield at the end marginal portions thereof. Likewise a suitable shield 60 is located beneath the discharge plate 52 of the machine and between the same and the burner pipe to prevent undue heating of said discharge plate. Said shield 60 is formed at its front edge with a grooved portion 61 engaging a depending rib on the rear margin of the ironing shoe and is supported by lugs 62, 62 extending inwardly from the end members of the frame.

The pressing roll 15 is normally held elevated from the ironing shoe through the medium of the spring 39 acting through the medium of the arm 34, the rock-shaft, the links 27 and the roll supporting arms 18.

In the use of the machine the work is placed with its advance edge between the roll and the ironing shoe and the work is thereafter pressed toward the shoe through power applied to the treadle bar 30. Thereafter the roll is turned by manual power applied to the crank 44, said roll being turned in the direction indicated by the curved arrow in Fig. 3. The pressure of the roll on the work operates both to press the work against the ironing surface and to advance the same along the surface so as to properly smooth and iron the same, and the work is discharged from the said machine over the plate 52. The said ironing shoe is kept heated to the proper temperature through the medium of the flame issuing from the burner pipe and the arrangement of the shields operates to confine the heat from said flame to the area where it most effectively and economically heats said ironing shoe.

It will be evident that I have provided a machine which is exceedingly simple and efficient and which may be built at a low cost, thus adapting it to household uses

where a low price and easily operated machine is required.

I claim as my invention:—

1. An ironing machine comprising a frame, a stationary ironing shoe supported thereon, a pressing roll movable toward and from the shoe, roll supporting arms pivoted at their forward ends to the ends of the frame and provided at their rear ends with bearings in which the shaft of the roll is rotatively mounted, means acting on said arms, through the medium of which means and said arms the roll may be moved toward and from the ironing shoe, an operating shaft, located in front and above the plane of the axis of rotation of said roll, rotatively mounted in bearings rising from the ends of said roll supporting arms near the pivots of the latter, a pinion on said operating shaft, a gear wheel on the roll shaft meshing with the pinion, and a crank attached to one end of said shaft.

2. In an ironing machine, the combination with a frame, a horizontal ironing shoe supported thereon, and a pressing roll located above and movable toward and from the shoe, of two roll supporting arms pivoted to the frame at the ends of the latter and provided with bearings in which the shaft of said roll is rotatively mounted, roll actuating levers pivoted in the lower part of the frame, links affording operative connection between said levers and said roll supporting arms, a treadle connected with said levers for depressing the roll, and a spring operating on a part carried by one of said levers for elevating the roll above the said shoe.

3. An ironing machine comprising a frame, a horizontal ironing shoe supported thereon, a pressing roll located above and movable toward and from the shoe, two roll supporting arms pivoted to the frame at the ends of the latter and provided at their swinging ends with bearings in which the shaft of said roll is rotatively mounted, a rock-shaft mounted in said frame below the roll, roll operating levers fixed to said rock-shaft, a treadle connected with said levers, links connecting said levers with said roll supporting arms, an arm rigid with said rock-shaft, and a spring acting on said latter arm and operating through said rock-shaft and links to raise the roller from the shoe.

4. An ironing machine comprising a frame, a horizontal ironing shoe supported thereon, a pressing roll located horizontally above and movable toward and from the shoe, two roll supporting arms pivoted to the frame at the ends of the latter and provided at their swinging ends with bearings

in which the shaft of said roll is rotatively mounted, roll operating levers pivoted to the machine frame, a treadle bar connected with said levers, links connecting said levers with said roll supporting arms, a rigid arm extending laterally from one of said levers, a rod pivotally connected with said lever arm and having guiding engagement with the frame, and a spring surrounding said rod and interposed between the frame and a shoulder on said rod and operating through said rock shaft and links to raise the roll from said ironing shoe.

5. An ironing machine comprising a frame, an ironing shoe supported thereon, a pressing roll movable toward and from the shoe, roll supporting arms pivoted to the frame at the ends of the latter and provided at their swinging ends with bearings in which the shaft of the pressing roll is rotatively mounted, means for rotating said pressing roll, a rock-shaft mounted in the frame below said roll, roll operating levers fixed to the ends of said rock-shaft and extending forwardly therefrom, a treadle bar connected with the forward ends of said levers, links pivotally connected at their upper ends with said roll supporting arms and at their lower ends with said levers in front of said rock-shaft, one of said roll actuating levers being provided in rear of said rock-shaft with a downwardly and rearwardly extending arm, and a spring acting on said latter arm to raise the roll from the shoe.

6. In an ironing machine, the combination with a frame comprising rigidly connected end members, an ironing shoe extending between and supported at its ends on said end members, a rotative pressing roll located over and movable toward and from said shoe, a feed-plate in front of said roll and shoe, and a burner pipe located beneath said shoe, of a single piece shield extending between and supported at its ends on said end members and arranged between said feed plate and burner pipe, said shield extending at its upper margin to said ironing shoe and being curved rearwardly at its lower side to extend beneath said burner pipe.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 21st day of September A. D. 1907.

HERMAN G. GROSSE.

Witnesses:

WILLIAM L. HALL,

GEORGE R. WILKINS.