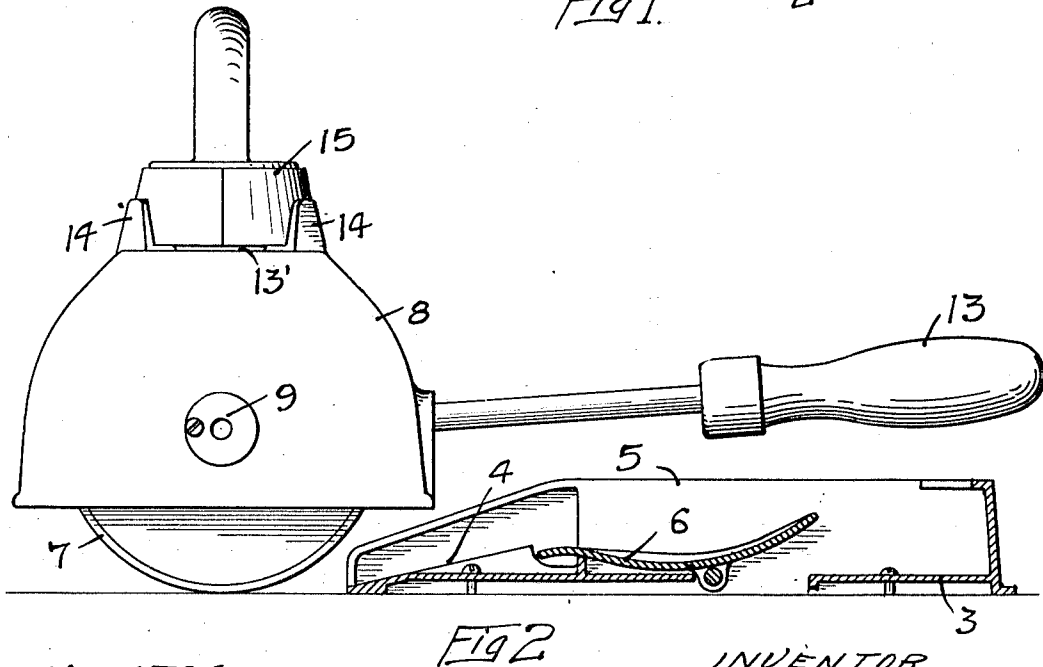
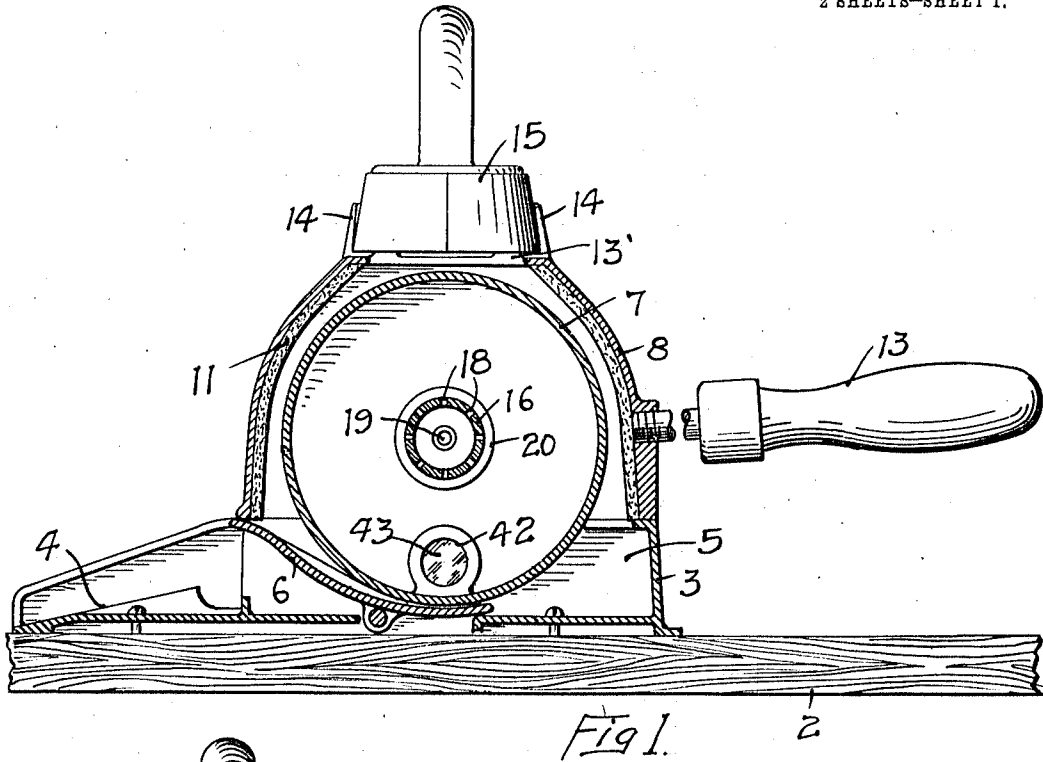


F. CHATFIELD.
 ROLLER IRON.
 APPLICATION FILED JUNE 5, 1911.

1,053,572.

Patented Feb. 18, 1913.

2 SHEETS—SHEET 1.



WITNESSES
Am. Val. Stern
E. A. Paul

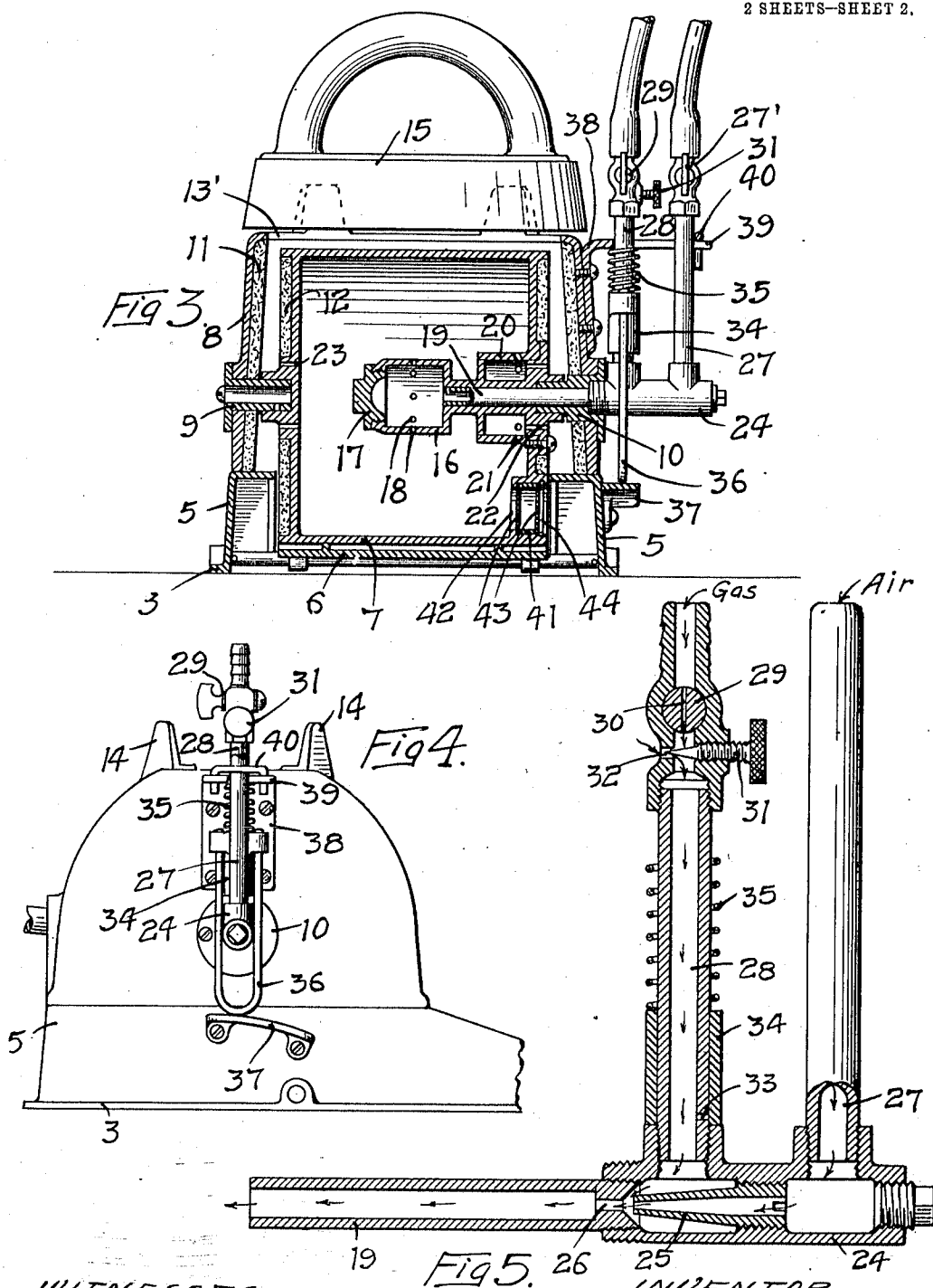
INVENTOR
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 ATTORNEYS

1,053,572.

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2 SHEETS—SHEET 2.



WITNESSES
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UNITED STATES PATENT OFFICE

FRANKLIN CHATFIELD, OF MINNEAPOLIS, MINNESOTA.

ROLLER-IRON.

1,053,572.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application file June 5, 1911. Serial No. 631,484.

To all whom it may concern:

Be it known that I, FRANKLIN CHATFIELD, a citizen of the United States, and resident of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Roller-Irons, of which the following is a specification.

My invention relates to devices for ironing knit fabric and the object of the invention is to provide a roller iron having improved means for feeding air and gas there-through and controlling such feed and regulating the mixture.

A further object is to provide means for retaining the heat of the roll when it is not in use.

Other objects will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a sectional view of a roller iron, cover and base embodying my invention, showing the roll mounted on the base, Fig. 2 is a view showing the roll removed from the base, the base being illustrated in section, Fig. 3 is a detail sectional view through the roller iron at right angles substantially to the section line of Fig. 1, Fig. 4 is a side view, showing the gas and air connections to the roll, Fig. 5 is a sectional view, showing the means for mixing the air and gas and controlling the proportions of the mixture.

In the drawing, 2 represents an ironing board, 3 a base secured thereon having an inclined way 4 over which the roller may be moved to its seat on the base. The base has side walls or flanges 5 and a hinged plate 6 that is adapted to tilt under the contact of the roller therewith and close the passage leading to the way 4 and shut off, as far as possible, the escape of heat by radiation from the roller when the device is not in use.

7 represents a hollow roller or cylinder and 8 is a cover inclosing the upper portion of the roller and resting upon the flanges 5 and having hollow studs 9 and 10 on which the roller is journaled. The cover has a lining 11 of asbestos or other non-heat conducting material, and the ends of the roller are preferably provided with panels of similar material. A suitable handle 13 is mounted on the cover 8 and by means of which the

device is moved back and forth over the goods to be ironed. The top of the cover has an opening 13' with lugs 14 at intervals around said opening, between which lugs a sad iron 15 may be placed for heating purposes. 16 is a burner centrally disposed in the roller 7, having an imperforate head 17 and provided with a series of ports 18 at intervals in its walls through which the flames are directed outwardly against the walls of the roller. This burner is preferably formed on one head of the roller and is supplied with gas and air through a feed pipe 19 that is journaled in one head of the roller and in the stud 10, the roller and burner turning freely on this supply pipe. A flange 20 incloses the supply pipe and the bearing therefor, and has ports 21 leading to ports 22 in the head of the roller. Through these ports the products of combustion from the burner may escape into the space between the roller and cover and from thence through the opening in the top of the cover. Similar ports 23 are preferably provided in the opposite head of the roller.

The outer end of the supply pipe 19 is connected to a head 24 in which is a nozzle 25 with its discharge end near the port 26 provided in the outer end of the pipe 19. An air supply pipe 27 communicates with the head 24 and the passage through the nozzle 25 and supplies air under pressure to the roller burner and a pipe 28 communicates with the head 24 and supplies gas to said head near the discharge end of the nozzle 25, the passage of air through the nozzle creating a partial vacuum in the head around the nozzle and causing a suction in the pipe 28 to draw the gas into the supply pipe and mix it with the air from the pipe 27. The air supply pipe is provided with a valve 27' and the gas pipe has a valve 29 provided with a port 30 for regulating the feed of gas and a needle valve 31 controls the admission of air through the port 32 leading to the gas pipe. By means of this needle valve the proportion of air mingling with the gas can be increased or decreased, according to the desired richness of the mixture. I also prefer to provide a port 33 in the pipe 28, normally closed by a sleeve 34 that is slidably mounted on said pipe and held in its depressed position by a spring 35. A yoke 36 has its ends mounted in said sleeve and when the roller and cover are placed upon the base the lower end of the

yoke will contact with the cam plate 37 and the weight of the roller and cover will cause the sleeve 34 to slide upwardly, compressing its spring and exposing the port 33 and allowing a still larger volume of air to flow to the burner and produce a corresponding reduction in the richness of the mixture. As soon as the roller and cover are removed from the base the spring will return the sleeve to its normal position, closing the port 33. I prefer also to provide a bracket 38 secured to the cover and having a fork 39 to straddle the gas and air pipes, a fastening device 40 being inserted into holes in the forks to prevent accidental separation of the cover and gas and air pipes and their connections. Whenever desired, however, this fastening device may be removed and the head 24 and supply pipe can be pulled out of the roller and cover. I also prefer to provide a relief in connection with the roller, which consists in a collar 41 fitting within an opening 42 in the head of the roller, and having mica plates 43 normally closing the opening and held in place by a spring ring 44. In case of explosion in the burner, these mica plates will be broken and prevent damage to the roller or cover.

I claim as my invention:—

1. A roller iron comprising a hollow roll, a cover inclosing the upper portion of said roll and wherein said roll is journaled, a burner within said roll and having a supply pipe extending outwardly through the head of said roll and the wall of said cover, air and gas pipes communicating with said supply pipe, and means actuated by the pressure of the roll for automatically increasing the admission of air to said supply pipe.

2. The combination, with a hollow roll, of a burner therein provided with a supply pipe, air and gas pipes communicating with said supply pipe, said gas pipe having an air port therein, a sleeve normally closing said port, a spring normally holding said sleeve in its closed position, and means for moving said sleeve to expose said port to decrease the richness of the mixture.

3. A roller iron comprising a cover, a hollow roll journaled therein, a burner projecting into said roll concentric with the axis thereof and having a supply pipe and means for supplying a mixture of air and gas to said burner, the end wall of said burner opposite the inlet opening being

imperforate and having a concave surface adapted to direct the gas laterally within said burner, the side walls of said burner having a series of holes therein at intervals opposite to and spaced from the walls of said roll.

4. The combination, with a base and a cover adapted to rest thereon, of a hollow roll journaled in said cover and inclosed thereby, a burner provided within said roll and having a gas supply pipe, and means actuated by the placing of said cover on said base for admitting air to said supply pipe and decreasing the richness of the mixture.

5. The combination, with a base and a cover adapted to rest thereon, of a hollow roll journaled in said cover, a burner within said roll having a supply pipe and a gas pipe connected therewith, said gas pipe having an air port, a sleeve normally closing said air port, a spring for holding said sleeve in its closed position, an arm mounted on said sleeve and means on said base in position to engage said arm and move said sleeve to expose said port when said roll and cover are in position on said base.

6. The combination, with a base having an opening on one side, of a roll adapted to enter the opening in said base, a cover for said roll adapted to rest on said base over the opening therein, and means actuated by the weight of the roll in said base for closing the opening between said base and cover.

7. The combination, with a base having an open side, of a cover, a roll journaled in said cover and having a burner and a supply pipe therefor, a plate pivoted in said base and adapted to be engaged by said roll when placed in position on said base to close the open side of said base.

8. A roller iron comprising a hollow roll, a cover inclosing the upper portion of said roll and spaced therefrom and having bearings for said roll, a hollow burner mounted in said roll and having ports in its walls, and a supply pipe leading thereto, the wall of said roll having a relief port and a frangible material mounted therein, for the purpose specified.

In witness whereof, I have hereunto set my hand this 29th day of May, 1911.

FRANKLIN CHATFIELD.

Witnesses:

GENEVIEVE E. SORENSEN,
C. H. REHFUSS.