

J. T. BRUEN.
Ironing and Seam Opening Machine.

No. 216,507.

Patented June 17, 1879.

Fig. 2.

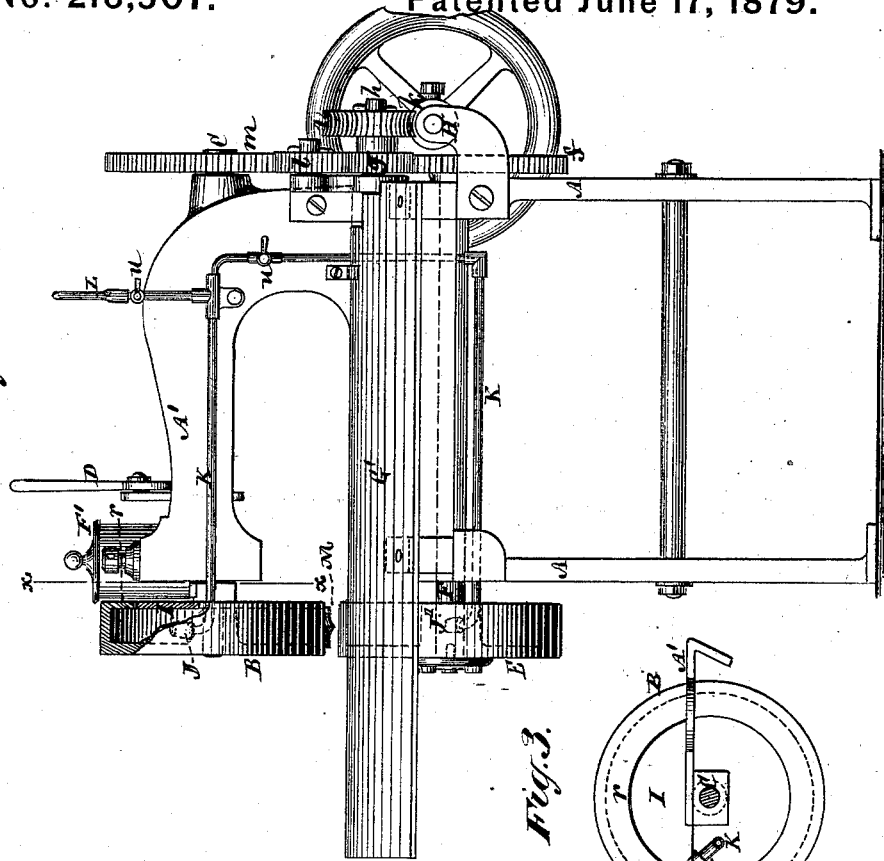


Fig. 3.

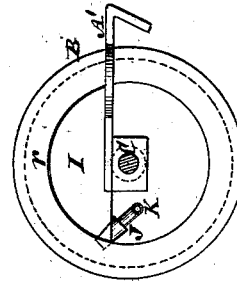
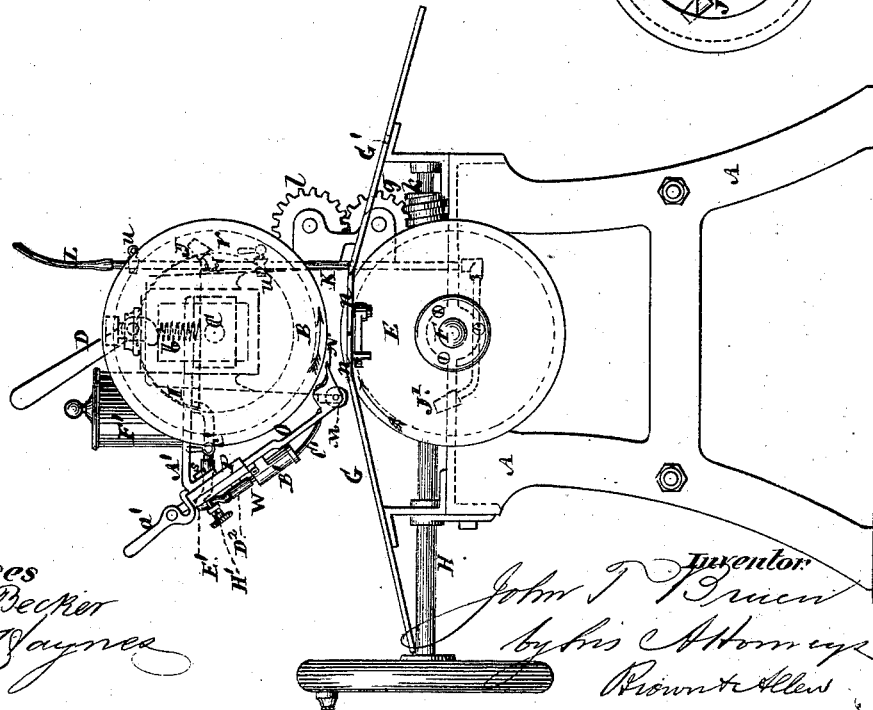


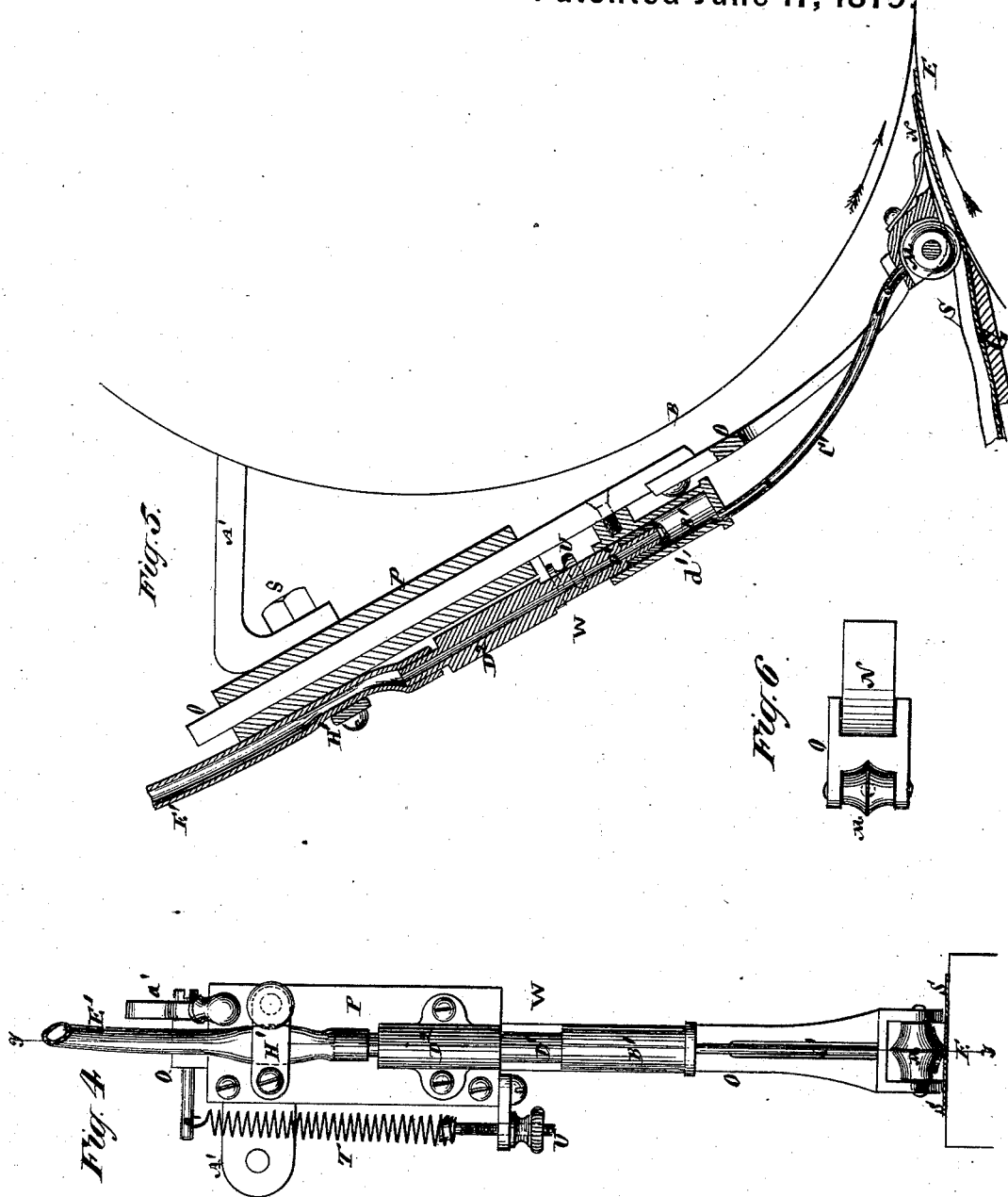
Fig. 1.



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UNITED STATES PATENT OFFICE.

JOHN T. BRUEN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN IRONING AND SEAM-OPENING MACHINES.

Specification forming part of Letters Patent No. **216,507**, dated June 17, 1879; application filed September 24, 1878.

To all whom it may concern:

Be it known that I, JOHN T. BRUEN, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Ironing-Machines, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

This invention, like that for which Letters Patent were allowed me on March 21, 1878, has more particularly for its object the smooth pressing of the seams of partly-made clothing and other articles, including coat-sleeves, shoes, boot-legs, and other closed or tubular bodies.

The machine having the invention applied may either use duplicate ironing or pressure rolls for the material under operation to pass in between, or a vibrating arc-shaped horn or goods-carrier, and a single rotating ironing-roll arranged to operate in connection with said carrier, according to the description of the work to be ironed, as in the case of my previous invention hereinbefore referred to. Such rolls or ironing devices may be variously heated—as, for instance, by introducing hot irons within them, or by jets of gas, as in other ironing-machines, but preferably by one or more jets of gas, as hereinafter described.

The invention consists in a combination of an inclined or arched feeding table or bed, a goods supporting and feeding roll or traveling device arranged to partially project up through an opening in said table or bed, and a seam opening and spreading roller.

The invention also consists in a combination of a seam opening and spreading roller with a rising and falling upper ironing-roll, having its axis in advance of said roller, an inclined or arched feeding table or bed, having an opening in it beneath the upper ironing-roll and receiving said seam opening and spreading roller within it, and a lower goods supporting and feeding roll or traveling device arranged to project up through the opening in the feeding table or bed.

The invention likewise consists in a certain construction and combination of parts for use in connection with a gas-burner to heat the ironing-roll.

Again, the invention consists in a combination, with a rising and falling upper ironing-

roll, of a seam opening and spreading roller having a dampening device combined with it and arranged to rise and fall in common with said roll.

Furthermore, the invention consists in a combination, with a seam opening and spreading roller, of a dampening or water-supplying device, provided with a drip-tube arranged to conduct the water onto said roller, whereby the latter not only serves to open and spread the seam, but also to distribute the water in line with and inside of the seam.

In the accompanying drawings, Figure 1 represents a front view of an ironing-machine constructed in accordance with my invention; Fig. 2, a side view of the same; and Fig. 3, a rear view of the upper ironing-roll on the sectional line *x x* in Fig. 2. Fig. 4 is a face view or elevation of the dampening device, and of the seam opener or spreader upon a larger scale; Fig. 5, a sectional side view of the same on the line *y y* in Fig. 4; and Fig. 6, an under view, in part, thereof.

A is the main frame, which may be of any suitable construction, and be formed, in part, of an upper goose-neck, A', at the front end of which a hollow heated ironing or pressure roll, B, is arranged. This roll is fast on the forward end of a shaft, C, that passes longitudinally through the goose-neck, and is hung so as to admit of its front end, and with it the roll B, rising and falling, subject to the control of a spring, *b*, which tends to keep the roll B depressed, and serves to give an elastic downward pressure of said roll on the goods. Such spring-pressure attachment to the roll B may be variously constructed, and be made capable of adjustment according to the stiffness or flexibility of the material under operation.

A lifter, D, of any suitable construction, capable of operation by hand, may be used to raise the forward end of the shaft C and roll B thereon to relieve said roll of contact with the goods when required.

E is a lower roll, between which and the upper roll, B, the goods to be ironed are introduced—that is to say, when a vibrating arc-shaped horn suitable for carrying closed goods, such as coat-sleeves and various other closed articles, is not used in place of the lower roll,

E, which latter, or the horn substituted for it, constitutes the lower feeding or pressure and supporting device for the goods against or as opposed to the pressure of the ironing-roll B. These rolls B and E travel in like directions as regards the contiguous portions of their peripheries, as indicated by arrows in Fig. 1.

The lower roll, E, is fast on the forward end of a shaft, F, which may work in fixed bearings below an inclined or arched table or bed, G G', which serves to support the material to the ironing devices and to deliver the same after it has been ironed.

The shaft F, which carries the roll E, is extended backward, and has secured on its rear end a spur-wheel, *f*, which is in gear with a pinion, *g*, on a counter-shaft, *h*, that also carries a toothed wheel, *i*, with which a screw, *k*, upon a driving-shaft, H, gears. The pinion *g* also gears with an independent pinion, *l*, that in its turn gears with a pinion, *m*, on the rear end of the shaft C of the upper roll, B. This method of gearing or driving the rolls B C is both simple and effective.

The inclined or arched table or bed G G' has an opening, *n*, in it, through or above which the roll E partly projects. The feeding portion G of said table inclines upward toward the opening *n*, for a purpose which will be hereinafter explained.

The rolls B and E are hollow and open at their backs. The upper roll, B, which is actually the ironing one, and therefore specially requires to be heated, is constructed with a back flange, *r*, arranged to project inward toward the center of the roll; and combined with said flange is a stationary curtain, I, fitted to inclose the upper portion of the space circumscribed by the inner margin of the flange *r*. Said curtain and flange combined serve to shield a flame derived from a Buusen or other suitable gas-burner, J, used to heat the rim portion of the roll B, and to confine the heat within the roll, said burner J projecting up within the flanged portion of said roll at or near the junction of the curtain I with the flange *r* on one side of the center of the roll. This burner J is supplied with combustible gas by or from a pipe, K, which is extended to also supply a burner, J'', within the lower roll, E, for the purpose of more or less heating, if necessary, said lower roll.

The pipe K may be connected by a flexible supply-pipe, L, with any suitable gas reservoir or connection, and one or more cocks, *u*, may be provided for regulating the supply of gas to the burners J J'', or either of them, and for shutting off the supply of gas when required.

To smooth-press or iron seamed work S, as represented in Figs. 4 and 5, said work is passed in between the upper roll, B, and lower roll, E, or other goods-supporting traveling device, so as to present the inner or open surface of each seam to the ironing-roll B. To facilitate this action the seam to be ironed is opened or spread as the goods are passed up over the table to the ironing or pressure de-

vices by entering the work beneath an immediately ridged or flanged opening or spreading roller, M, arranged in advance of the ironing-rolls or pressure devices and over the opening *n* in the feed-table. This seam opener and spreader is preferable to a mere shoe, inasmuch as it has an easy rolling action, and reduces to its minimum the friction consequent on the resistance of the goods when entering or introducing them to the rolls, is more gradual and effective in its operation, and less liable to injure fine or biased goods; also, in connection with the lower roll, E, or goods-supporting device, assists in feeding the goods. Said seam opening and spreading roller M is elastically supported, to bear with a yielding pressure on the goods, and it has preferably combined with it, or with the device which carries it, a spring-tongue or elastic presser, N, arranged back of the roller M, and serving to keep the seam spread open as it passes from the roller M to the points of contact or pressure of the rolls B E. Said tongue also serves to yield to the difference in the arc of the supporting-surface of the traveling goods-carrier. The elastic support of the roller M may be effected by attaching it to the foot of a bar, O, which is fitted so as to admit of its sliding up and down within a box or guide, P, and is borne downward by a spring, T, capable of adjustment by a tension-regulating screw, U, the whole forming a holder, W, of the seam opening and spreading devices. Said holder is attached by a bracket, A', to a box or bearing on the rising and falling end of the shaft C of the ironing-roll B, so that when said roll is raised or lowered the seam opening and spreading devices are also raised or lowered to bring them down onto or to remove them from the work, as required; but it is also desirable to provide for raising the seam opening and spreading roller M independently of the roll B, to adjust the seam in proper position with said roller, and for other purposes. To this end the sliding bar O has applied to it, on top of the box or guide P, a lifting cam lever or device, *a*'.

The inclination or arched configuration of the table or bed G G' is important, inasmuch as if a flat table or bed were used the lower roll, E, would be caused to project unduly or to an excessive and improper height above it; to provide, by suitably proportioning the opening *n* in the tables, for the arrangement of the seam opening and spreading roller M over said opening to bear on the goods as they pass to the lower roll, E; and to provide for the proper relative close arrangement of the roller M to the rolls B E. Furthermore, by the organization of the seam opening and spreading roller, as described, and its combination with the lower roll or goods supporting and feeding device and inclined feed-table, increased facility is afforded for properly entering the goods, the inclination of the feeding-table or feeding portion G of the table materially aiding in placing the goods, and which would be difficult,

especially when operating on soft or flimsy material, owing to the liability of burning the fingers by contact with the rolls B and E, or of the fingers of the operator being drawn in between said rolls, were it not for the interposition of the roller M, which acts as a guard.

To smooth-press or iron the goods it is very desirable and generally usual to dampen the goods in or over the surface to be ironed. When this is done by hand with a sponge there is not only an uncertainty or irregularity as regards the proper distribution of the water in line with the seam or surface to be ironed, but water is apt to settle or be distributed on or over the material outside of the surface to be ironed, thereby raising the nap in certain kinds of goods and disfiguring the latter. To obviate this I combine with the ironing-roll B and lower roll, E, or its vibrating horn equivalent, also with the seam opening and spreading roller M, when the latter is used, or exclusively with the seam opening and spreading roller, and an ironing roll or device, a dampening or water-distributing device operating as a percolator to distribute the water in drops or small quantities by or through a drip-tube, C', attached to a water chamber or cylinder, B', and arranged to lead down to and over the roller M, thereby causing the latter not only to open and spread the seam, but also to distribute the water in line with the seam. Said dampening or water-distributing device may be variously constructed and supported, and is represented in the drawings as of a special construction, so far as regards the supply and discharge of water to and from it is concerned, which special construction it is my intention to make the subject of a separate application for Letters Patent; but it is important in every case that the drip-tube C', which takes its supply of water from the chamber B', should lead down to and over the seam opening and pressing roller M, for the reason hereinbefore stated.

I claim—

1. The combination of an inclined or arched feeding table or bed, a goods supporting and feeding roll or traveling device arranged to partially project up through an opening in said table or bed, and a seam opening and spreading roll arranged for operation in relation with said feeding roll or device, essentially as described.

2. The combination of the seam opening and spreading roller with the rising and falling upper ironing-roll, having its axis in advance of said roller, the inclined or arched feeding table or bed, having an opening in it beneath the upper ironing-roll and receiving the laterally-arranged seam opening and spreading roller within it, and a lower goods supporting and feeding roll or traveling device arranged to project up through said opening, substantially as specified.

3. The combination of a gas-burner with a hollow ironing-roll having an inwardly-projecting back flange, and with a stationary curtain fitted and adapted to said flange, substantially as specified.

4. The combination, with the rising and falling upper ironing-roll, of a seam opening and spreading roller having a dampening device combined with it, and arranged to rise and fall in common with said roll, essentially as described.

5. The combination, with the seam opening and spreading roller, of a dampening or water-supplying device provided with a drip-tube arranged to conduct the water over and onto said roller, whereby the latter not only serves to open and spread the seam, but also to distribute the water in line with the seam, substantially as specified.

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