

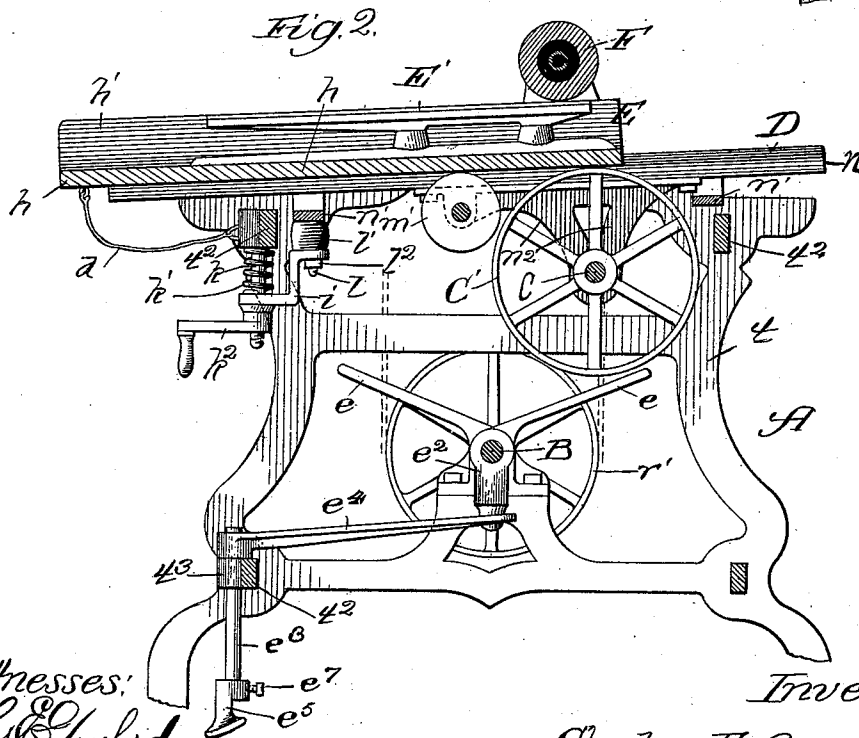
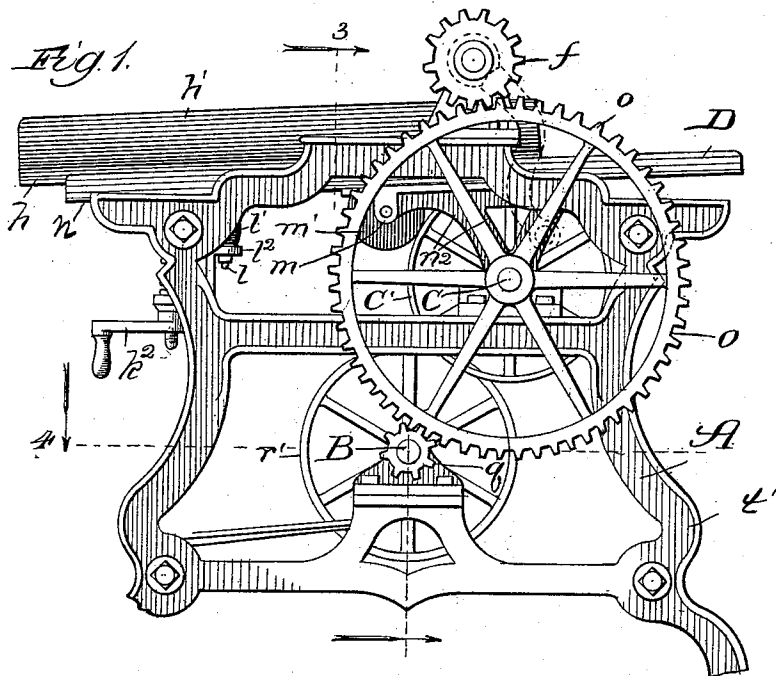
(No Model.)

2 Sheets—Sheet 1.

C. E. QUARNSTRÖM.
IRONING MACHINE.

No. 472,954.

Patented Apr. 12, 1892.



Witnesses:
 Carl Gaylord
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UNITED STATES PATENT OFFICE.

CHARLES E. QUARNSTRÖM, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF
TO NELS P. HEDIN, OF SAME PLACE.

IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 472,954, dated April 12, 1892.

Application filed October 15, 1891. Serial No. 408,802. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. QUARNSTRÖM, a subject of the King of Sweden and Norway, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Ironing-Machines, of which the following is a specification.

My invention relates to an improvement in ironing-machines of the class employed more especially for ironing and polishing shirt-bosoms, collars, and cuffs, and which involve as their main operating parts a hot revolving ironing or polishing roller and a support for the article to be ironed reciprocating below and in contact with the ironing-roller.

My object is to provide a machine of the above character of a simple, durable, and comparatively inexpensive construction and which shall be eminently effective and quick in its operation.

In the drawings, Figure 1 is view of my improved machine in side elevation; Fig. 2, a central longitudinal section of the same; Fig. 3, a section taken on line 3 of Fig. 1 and viewed in the direction of the arrow, and Fig. 4 a sectional plan view taken on line 4 of Fig. 1 and viewed in the direction of the arrow.

A represents the frame of the machine, comprising two sides or castings $t t'$, connected together by cross-bars t^2 .

B is the drive-shaft, mounted in and extending through bearings $s s'$ in the frame A. The shaft B carries at one end the fast pulley r and two loose pulleys r' , and at its opposite end it is provided with a pinion q . Above and somewhat back of the shaft B is a shaft C in bearings in the frame A and carrying outside the frame a cog-wheel o , which meshes with the pinion q . Between its bearings the shaft C carries a friction wheel or drum C' , the outer circumference of which affords a friction-surface.

D is a swinging frame comprising side bars $n n$, connected together at their end portions by cross-bars n' . The side bars $n n$ are rabbeted in their adjacent faces to afford a grooved track n^3 , as shown in Fig. 3. The frame D is supported on arms or brackets n^2 ,

rigid therewith and which are pivotally mounted at their lower ends on the shaft C between the drum C' and sides of the frame A. Journalled in bearings m , extending downward from the side bars n of the frame D, is a roller m' . Extending downward from the center of the cross-bar n' , nearest the front of the machine, is a lug l , threaded at its lower end, and extending downward from the cross-bar t^2 at the forward end of the frame A is a lug k , threaded along its lower end portion. A bracket i of the angular shape shown in Fig. 2 is provided near its opposite ends with openings which fit, respectively, closely, but loosely, over the lugs $l k$. Interposed between the bracket i and bar n' on the lug l is a cushion l' , which may be of rubber, as indicated by the drawings, or any convenient form of spring, and the bracket i is maintained against the cushion by a nut t^3 on the threaded end of the lug l . Surrounding the lug k and confined between the bracket i and cross-bar t^2 is a spring k' . Below the bracket i on the threaded portion of the lug k is a crank k^2 . Turning of the crank k^2 in one direction causes it to travel up the lug k , and by bearing against the bracket i carrying the latter up against the resistance of the spring k' . The bracket i in its rise lifts the frame D and swings it upward on its pivot, which, as before stated, is the shaft C. Turning of the crank k^2 in the other direction causes it to travel downward on the lug k and permit the frame D to swing downward on its pivot.

The reciprocating ironing-board frame or support E for the goods comprises a base-board h , centrally upon which is mounted the ironing-board proper E' . At the sides of the base h are flanged upwardly-extending plates h' .

F is a hollow ironing or polishing roller mounted near opposite ends in bearings $g g'$ at the tops of the sides $t t'$, respectively, of the frame A. Outside the bearing g' the ironing-roller carries a pinion f , which meshes with the cog-wheel o . Extending into the roller F is a gas-burner x . The drum C' and roller m' extend at the highest points of their circumferences in a plane about one-eighth of an inch above the guide-grooves n^3

in the side bars *n*, and the base-board *h* of the reciprocating ironing-board frame, which slides in the grooves *n*³, rests upon the drum *C'* and roller *m'*. The ironing-roller *F* is
5 mounted slightly forward of the shaft *C* and back of the roller *m'*.

G is belt-shifting mechanism, comprising the shifter *e*, which engages the belts and which is connected by rods *e'* with a sliding
10 collar *e*² on the shaft *B*. Mounted in a bearing *t*² at the center of the lower forward cross-bar *t*² of the frame *A* is a vertical rod *e*³, to the upper end of which is keyed a backward-extending arm *e*⁴. At its opposite end the arm
15 *e*⁴ is connected pivotally to the collar *e*². Adjustable up and down on the rod *e*³ is a cross-bar *e*⁵, formed at opposite ends with foot-rests *e*⁶. The cross-bar *e*⁵ may be secured in adjusted position by a set-screw *e*⁷, which thus
20 operates, also, to fix the bar *e*⁵ against independent rotation upon the rod *e*³.

The shaft *B* is rotated from a suitable driving-power by belts, one of which is crossed, so that when they are shifted alternately to the fixed pulley *r* they will rotate the latter
25 in opposite directions.

In operation the ironing-board is slid forward out of engagement with the drum *C'* and the article to be ironed placed thereon. The
30 belt-shifting mechanism is turned by the operator with his feet to cause the drum *C'* to rotate in a direction which will cause it to carry the ironing-board in the backward direction when the latter is pushed backward
35 into engagement therewith. The frame *D* is adjusted upon its pivot by turning the crank *k*² to cause the upper surface of the ironing-board to engage the ironing-roller *F*. The operator then pushes the ironing-board frame
40 in a backward direction until it is engaged by the drum *C'*, which, owing to its frictional engagement with the under side of the base-board *h*, carries the ironing-board in the backward direction. When the ironing-board
45 has passed under the roller *F*, the operator by turning the cross-bar *e*⁵ with his feet will shift the other belt to the fast pulley *r* and cause the motion of the drum *C'* to reverse and slide the ironing-board in the forward direction. The ironing-board may thus be reciprocated backward and forward until the
50 article carried by it is suitably ironed. By simply turning the crank *k*² the pressure of the ironing-board against the ironing-roller may be regulated at will. To prevent the ironing-board frame from being caused to travel too far in either direction, I fasten it at its forward end by means of a chain or other flexible medium *u*, of suitable length, to the
60 upper forward cross-bar *t*².

As the frame *D* is pivoted upon the shaft *C*, the drum *C'* will always project the same distance above the lower sides of the grooves *n*³. Owing to the relative positions of the
65 drum *C'* and ironing-roller *F*, the adjustment of the frame *D* on its fulcrum to regulate the

pressure of the ironing-board against the roller *F* is under perfect control of the operator and may be quickly changed at will.

The operator may sit down, if he desires, 70 while operating the machine, and the cross-bar *e*⁵ may be raised and lowered to suit his convenience.

I do not claim the belt-shifting mechanism in this application. 75

Some articles have to be ironed under a great pressure to produce the best results, and, owing to the frame *D* being pivoted on the shaft *C* and the relative position of the ironing-roller, much greater leverage comparatively may be had than were the frame *D* pivoted at the back of the machine, as is usual in machines of this class. In my improved machine, furthermore, the relative positions of the cog-wheel *o* and pinions *q* and *f* are
80 never changed. In those ironing-machines wherein the shaft *C* is journaled in the swinging frame *D* the teeth of the cog-wheels have necessarily to be considerably longer than in my machine to compensate for the swinging
90 of the frame *D*, and as a consequence of the teeth being long they mesh loosely and there is a constant rattling of the gears in their operation which it is desirable to overcome and which is not present in my machine. 95

What I claim as new, and desire to secure by Letters Patent, is—

1. In an ironing-machine, the combination, with the main frame and support for the goods, of a rotating shaft *C*, a friction-wheel *C'*
100 on the shaft *C*, a swinging frame *D*, in which the said support is mounted to reciprocate, pivoted on the shaft *C*, ironing-roller *F* above the shaft *C*, the center of the roller *F* being to one side of a line perpendicular to the
105 plane of the path of the said support and passing through the center of the shaft *C*, and means for swinging the frame *D* on its pivot, substantially as described.

2. In an ironing-machine, the combination, 110 with the main frame *A*, of a drive-shaft *B*, shaft *C*, and ironing-roller *F*, journaled in the frame *A*, the center of the roller *F* being to one side of a line perpendicular to the plane of the path of the support for the goods
115 and passing through the center of the shaft *C*, a cog-wheel *o* on the shaft *C*, pinions *q* and *f* on the shaft *B* and roller *F*, respectively, engaging the said cog-wheel, friction-wheel *C'* on the shaft *C*, swinging frame *D*, pivoted on the
120 shaft *C*, reciprocating support for the goods in the frame *D*, resting on the wheel *C'*, and means for raising and lowering the frame *D* on its pivot, substantially as described.

3. In an ironing-machine, the combination, 125 with the main frame and reciprocating support for the goods, of a rotating shaft *C*, a swinging frame *D*, pivoted on the shaft *C*, guideways *n*³ in the frame *D* for the said support, a friction-wheel *C'* on the shaft *C*, and
130 a roller *m'* on the frame *D*, engaging the said support, ironing-roller *F*, journaled in the

frame A, the center of the roller F being to
one side of a line perpendicular to the plane
of the path of the said support and passing
through the center of the shaft C, and means
5 for raising and lowering the frame D on its
pivot, comprising the lug *l* on the frame D,
spring *l'* on the lug *l*, threaded lug *k* on the

frame A, bracket *i*, sliding on the lugs *l* *k*, and
traveling crank *k*² on the lug *k*, substantially
as described.

CHARLES E. QUARNSTRÖM.

In presence of—

J. W. DYRENFORTH,
M. J. FROST.