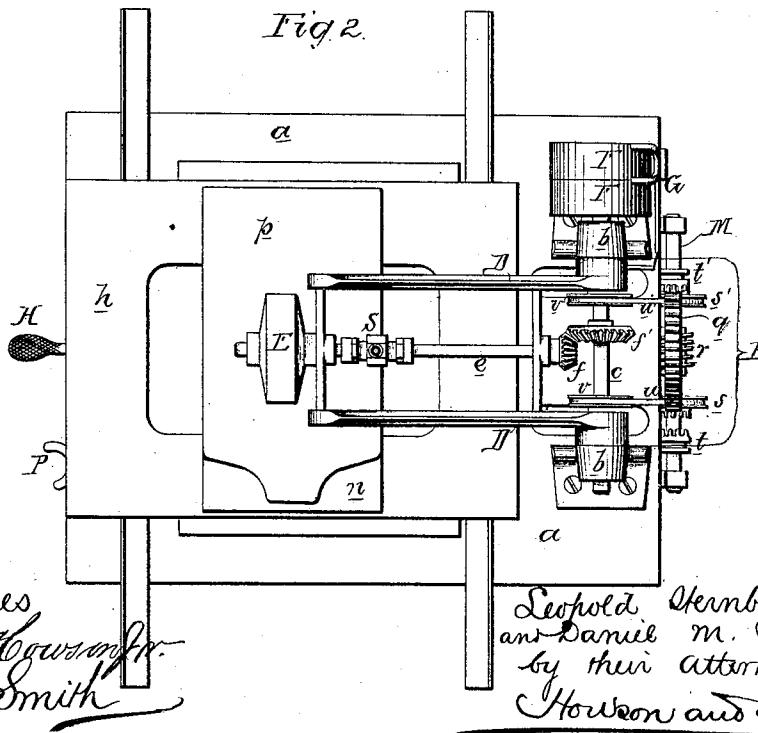
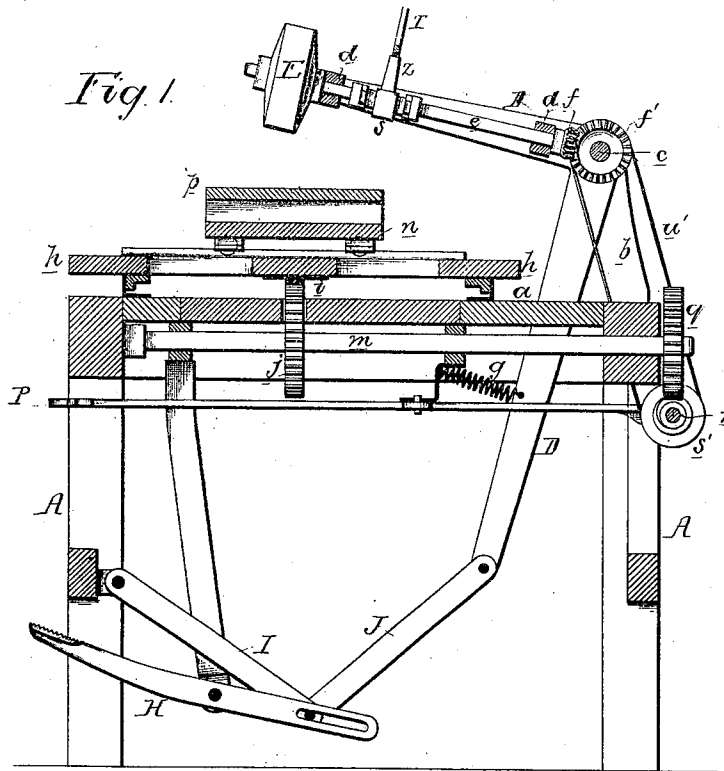


L. STERNBERGER & D. M. PFAUTZ.

IRONING APPARATUS.

No. 179,367.

Patented June 27, 1876.



Witnesses
Harry H. Brown
Harry Smith

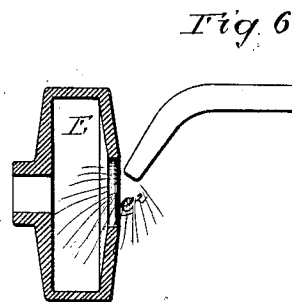
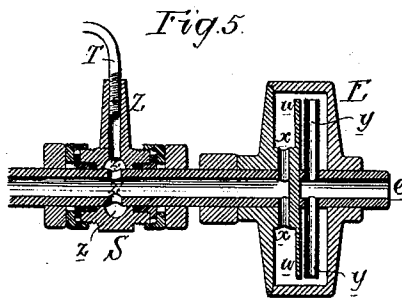
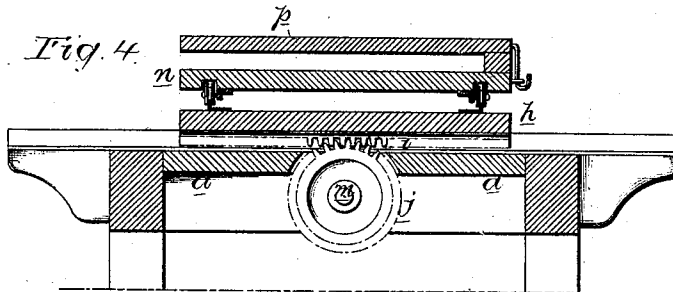
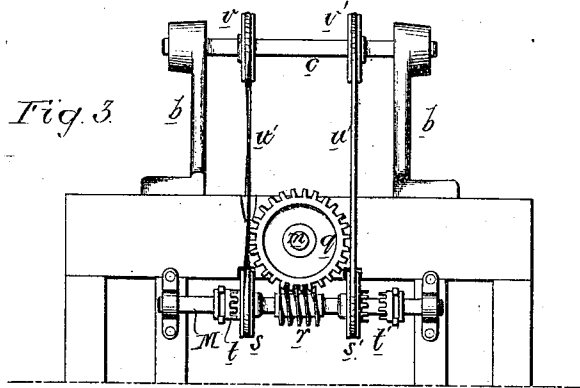
Leopold Sternberger
 and Daniel M. Pfautz
 by their attorneys
Hobson and son

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Harry Howson Jr.
Harry Smith

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Howson and son

UNITED STATES PATENT OFFICE.

LEOPOLD STERNBERGER AND DANIEL M. PFAUTZ, OF PHILADELPHIA,
PENNSYLVANIA, ASSIGNORS TO SAID STERNBERGER.

IMPROVEMENT IN IRONING APPARATUS.

Specification forming part of Letters Patent No. **179,367**, dated June 27, 1876; application filed
May 16, 1876.

To all whom it may concern:

Be it known that we, LEOPOLD STERNBERGER and DANIEL M. PFAUTZ, of Philadelphia, Pennsylvania, have invented certain Improvements in Ironing, Polishing, or Starching Machines, of which the following is a specification:

The object of our invention is to construct a machine for rapidly and effectively ironing, polishing, or starching textile fabrics, and this object we attain in the manner which we will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a longitudinal vertical section of our improved ironing-machine; Fig. 2, a plan view of the same; Fig. 3, a rear view of a portion of the machine; Fig. 4, a transverse vertical section; Fig. 5, an enlarged sectional view of the iron, and Fig. 6 a view of a modified form of iron.

A is the frame-work of the machine, supporting a table, *a*, and in brackets *b*, near the rear edge of this table, are formed bearings for a shaft, *c*, to which is pivoted a frame, B, consisting of two bell-crank levers, D D, braced by suitable strips *d*. The short arms of the levers D project over the table, and in the strips which brace these arms are formed bearings for a shaft, *e*, to the outer end of which is secured the iron E, while its inner end is furnished with a bevel-wheel, *f*, adapted to a bevel-pinion, *f'*, on the shaft *c*, to a fast or loose pulley, F, on the end of which power is applied from any adjacent shaft, a belt-shifter, G, being so arranged and so connected to the frame B that, when the iron E is elevated, the belt will be thrown on the loose pulley, and the rotation of the shaft *c* stopped; but when the iron is depressed the belt will be moved onto the fast pulley and power applied to the said shaft. The outer ends of the short arms of the levers D, and, consequently, the iron E, are held in an elevated position by the action, upon the long arms of the levers, of springs *g g*; but the iron may be depressed so as to bear upon the article to be operated upon, by depressing the outer end of the treadle H, the inner end of which is slotted and adapted to the pivot-pins of two forked arms, I and J, the former hung at its opposite end to the frame A, and the latter to the strip which connects the lower

ends of the long arm of the levers, so that the arms I and J form a toggle-joint, and upon the depression of the treadle, cause an outward movement of the lower ends of the long arms of the levers, and a depression of the iron E.

The table on which the fabric rests while being subjected to the action of the iron is shown in Fig. 4, and consists of a bed, *h*, adapted to transverse ways on the table *a*, and having on its under side a rack, *i*, which gears into a pinion, *j*, on a longitudinal shaft, *m*, beneath the table, to which shaft motion is imparted, as described hereafter, so as to move the bed *h* laterally across the table *a*. To longitudinal tracks on the bed *h* are adapted wheels on a carriage, *n*, which can be moved longitudinally over the bed *h* by hand or otherwise. In ironing ordinary fabrics they may be laid directly on the surface of this carriage; but in ironing shirts or tubular fabrics, we prefer to furnish said carriage with a hinged leaf, *p*, supported at its inner end, but free at the outer end, in order to allow the tube of fabric to be slipped over the same. (See Fig. 4.)

Motion is imparted to the traveling bed *h* by means of the devices shown in Figs. 1 and 3, on reference to which it will be seen that the rear end of the shaft *m* carries a worm-wheel, *q*, adapted to a worm, *r*, on a transverse shaft, M, adapted to bearings on the rear frame of the machine. Turning loosely on this shaft are two pulleys, *s* and *s'*, which can be geared to the shaft by means of clutches *t* and *t'*, operated by a lever, P, extending to the front of the machine. The pulley *s* is connected by means of a crossed belt, *u*, with a pulley, *v*, on the driving-shaft *c* of the machine, and the pulley *s'* is connected by means of a straight belt, *w*, with a similar pulley, *v'*, on said shaft.

It will thus be seen that movements in different directions are imparted to the pulleys *s* and *s'*, so that, by clutching one or other of them to the shaft M, the movement of the said shaft, and, consequently, of the shaft *m* and traveling bed *h*, can be changed at pleasure.

The iron E may be heated by steam, gas, hot air, &c.; but we prefer to use steam, and

for this purpose we make the shaft *e* hollow at its outer end, and provide it with a steam-tight coupling of peculiar construction, as shown in Fig. 5, by means of which steam from a pipe, *T*, is allowed to enter the hollow shaft and pass thence through perforations *x* in the same, into the hollow iron. The coupling by means of which the steam is introduced into the shaft *e*, consists of a casing, *S*, having a branch, *Z*, with which the pipe *T* communicates, and having a groove, *z*, surrounding a perforated portion, *z'*, of the shaft *e*. The casing *S* has at each end a stuffing-box, by means of which a steam-tight joint is insured. Steam entering through the pipe *T* passes into the groove *z* and through the perforated portion *z'* into the hollow shaft *e*. In a central position within the iron *E* is arranged a disk or partition, *w*, which extends almost, but not quite, to the rim of the iron, and between this disk and the front edge of the iron the shaft *e* has a number of hollow arms, *y*, which extend close to the rim of the iron, and serve as exits by which the steam escapes from the same.

Thus, the steam, entering the iron through the perforations *x*, passes around the partition *w*, in intimate contact with the rim of the iron, to which a high degree of heat is imparted, the steam then escaping through the hollow arms *y* and hollow shaft *e*, the end of which communicates with a suitable discharge-pipe.

By using the hollow arms *y*, the water of condensation, which would otherwise collect in the bottom of the iron and interfere with the proper heating of the same, is forced by the pressure of the steam up through these arms, and is discharged with the exhaust steam from the end of the shaft *e*.

When gas is used a plain hollow iron is employed, this iron being secured to the end of the solid shaft, and the gas-jets introduced through an enlarged opening, *e'*, in the front side of the same, as shown in Fig. 6.

Although we have described our invention more particularly with reference to ironing and polishing fabrics, it may be employed for the purpose of rubbing starch into the same, and, by slight changes in construction, a re-

ciprocating-iron may be used in place of the rotary iron shown and described.

We claim as our invention—

1. The combination, in an ironing, polishing, or starching machine, of a vertically-adjustable rotating or reciprocating iron, with a longitudinally and laterally adjustable table for receiving the fabric to be operated upon.
2. The frame *B*, consisting of two bell-crank levers, *D D*, connected together and arranged as shown and described.
3. The combination of the shaft *c* and its bevel-pinion *f'* with the shaft *e*, carried by the frame *B*, having a bevel-wheel, *f*, and carrying a rotating iron, all substantially as set forth.
4. The combination of the hollow perforated shaft *e* with the hollow iron *E* and its partition *w*, as described.
5. The combination of the hollow iron *E* with the hollow shaft *e* and its hollow arms *y*, as set forth.
6. The combination of the lower end of the frame *B* with the treadle *H* and pivoted arms *I* and *J*, as shown.
7. The combination of the traveling bed *h*, adapted to transverse ways on the table *a*, with the sliding carriage *n*, adapted to longitudinal tracks on the said bed *h*, as set forth.
8. The combination of the carriage *n*, on which the fabrics may be ironed, with the detachable leaf *p*, hinged to the carriage at one end, as set forth.
9. The combination of the shaft *m*, its pinion *j*, and worm-wheel *q*, with the bed *h* and its rack *i*, and with mechanism, substantially as described, by which a movement in opposite directions is imparted to said shaft, as set forth.
10. The combination of the hollow perforated shaft *e* with the casing *s*, its groove *z*, and stuffing-boxes, as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

LEOPOLD STERNBERGER.
DANIEL M. PFAUTZ.

Witnesses:

HARRY HOWSON, Jr.,
HARRY SMITH.