

T. A. WEBER & F. WAGNER.
Leather-Crimping Machine.

No. 218,350.

Patented Aug. 5, 1879.

Fig. 1.

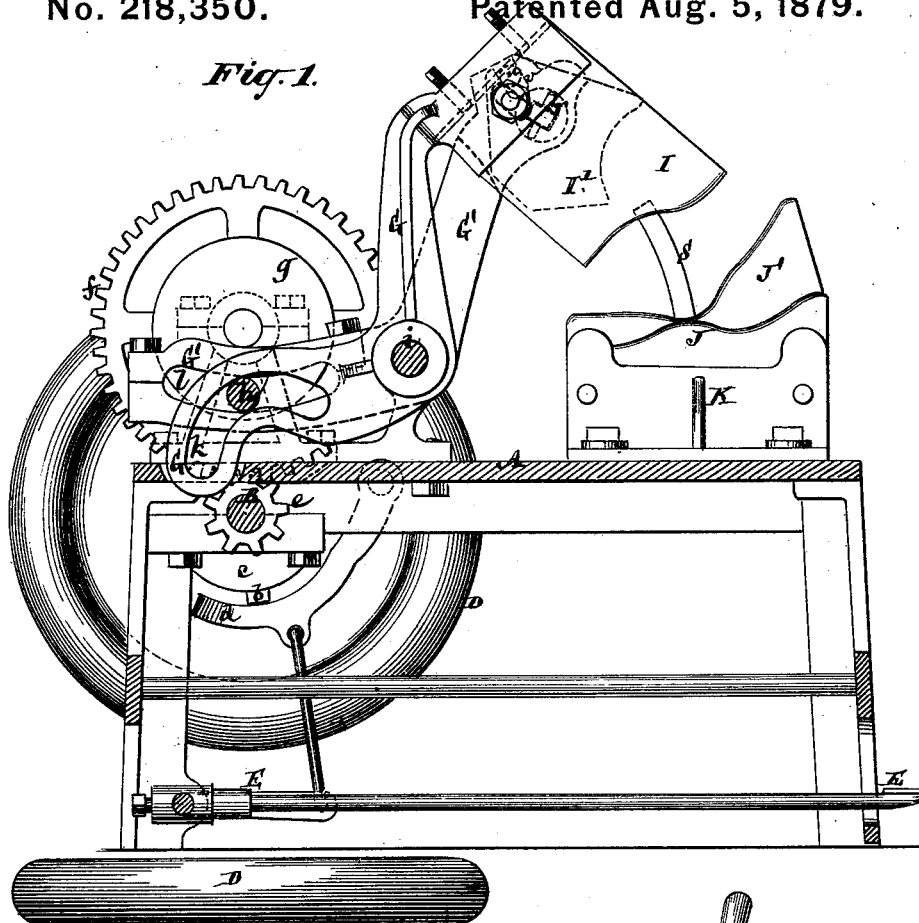
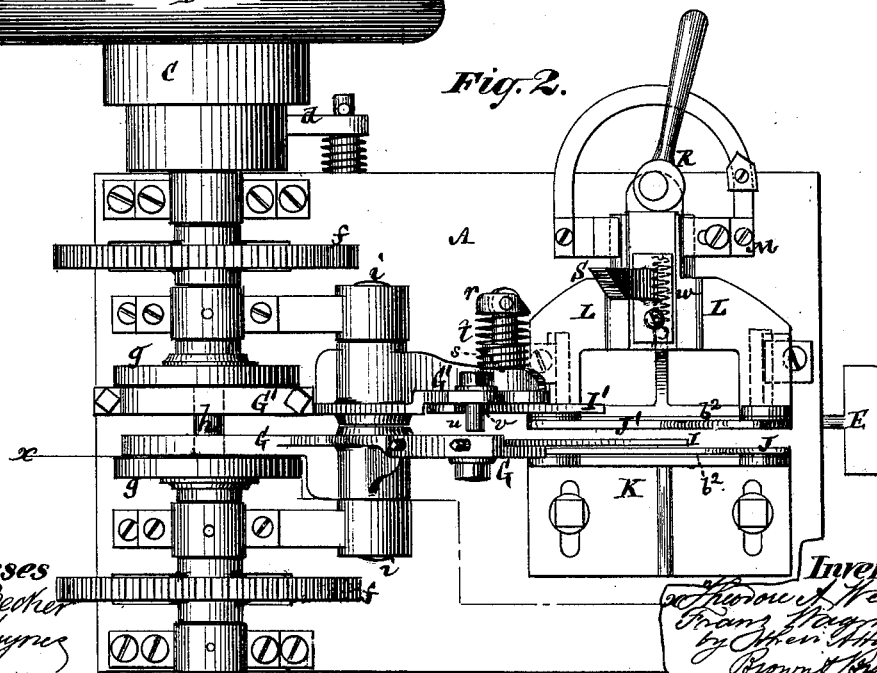


Fig. 2.



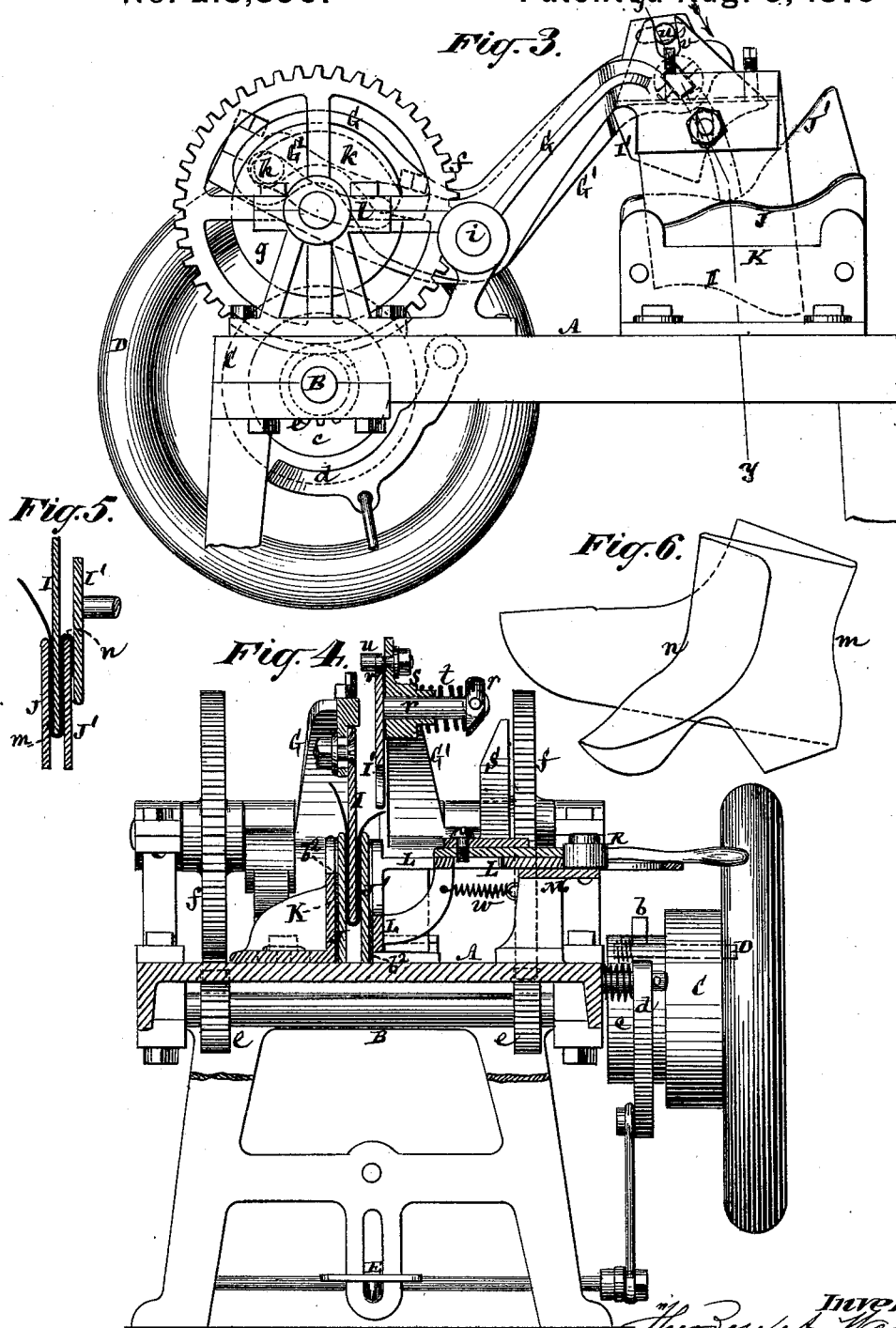
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UNITED STATES PATENT OFFICE.

THEODORE A. WEBER AND FRANZ WAGNER, OF NEW YORK, N. Y., ASSIGNORS
TO THEODORE VON BREMSSEN AND EDWARD J. BREMER, OF SAME PLACE;
SAID BREMER ASSIGNOR TO SAID VON BREMSSEN.

IMPROVEMENT IN LEATHER-CRIMPING MACHINES.

Specification forming part of Letters Patent No. **218,350**, dated August 5, 1879; application filed
January 24, 1879.

To all whom it may concern:

Be it known that we, THEODORE A. WEBER and FRANZ WAGNER, both of the city and State of New York, have invented certain Improvements in Leather-Crimping Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention more particularly relates to machines for crimping the heel and instep portions of boots and shoes; and consists in various novel combinations of devices whereby the crimping blades or plates are exempted from guides or frames interfering with the placing or removal of the leather, also whereby one portion of the leather or heel portion of a boot-upper is crimped in advance of another portion of the leather or instep part of said upper, but both during the same crimping stroke or action, and every necessary provision is made for adjustment of the crimping-plates to facilitate the ready entry, removal, and working of the leather.

In the accompanying drawings, Figure 1 represents a sectional side elevation, on the line *xx* in Fig. 2, of a machine for crimping boot-uppers constructed in accordance with our invention; and Fig. 2, a plan of the same. Fig. 3 is a side view of said machine, in part, showing the moving crimping-blades in different positions to those represented for them in Fig. 1. Fig. 4 is a vertical transverse section on the line *yy*; Fig. 5, a diagram in illustration of the action of the crimping-blades on the leather; and Fig. 6, a view, in perspective, of a boot-upper after it has been crimped and as it is taken from the machine.

A is the table of the machine, and B a main driving-shaft arranged horizontally across or under the rear end of the table, and driven by a pulley, C. This pulley, which may have attached to it a fly-wheel, D, is arranged loosely upon the shaft B, and is put in or out of driving connection with the latter by means of a spring-bolt, *b*, which is carried by a hub, *e*, fast on the shaft B, and is held from engaging with the pulley C, or its attached fly-wheel D, when it is not required to run the machine, by

a head on said bolt passing behind a lever, *d*, to which a spring treadle-motion, E, is applied, so that when it is necessary to run the machine it is only requisite to press down on the treadle, which removes the lever *d* from locking contact with the head of the spring-bolt, that then slides into engagement with the driving-pulley. This driving and stop motion, however, forms no part of the present invention, and its construction may be varied.

Fast upon the shaft B are pinions *e*, which serve when said shaft is rotated to communicate rotary motion to upper cross-shafts by means of spur-wheels *f*. These shafts have fast on their inner ends arms or plates *g*, which are connected by an eccentrically-arranged pin, *h*, whereby said shafts virtually become a single-crank shaft.

By the arrangement of double gears *e* and *f* on opposite sides of the cranked portion of said cranked shaft, a greater freedom of running action is obtained for the shaft. The eccentric or wrist pin *h*, connecting the plates *g*, serves to operate levers G G', which have attached to them the upper or moving crimping-plates, I I', for crimping both the instep and heel portion of the boot. These levers, which work on an intermediate fulcrum, *i*, have slots *k l* in their tail ends, arranged to receive the pin *h* through them.

These slots are constructed and arranged so that the pin *h* will act first, and with an accelerated effect, upon the lever G, to cause the crimping-plate I upon the front or outer end of said lever to operate in conjunction with a crimping-plate, J, to stretch and crimp the heel portion *m*, Figs. 5 and 6, of the boot-upper, and so that said pin afterward operates upon the lever G', to cause the crimping-plate I' upon the front or outer end of said lever to act in conjunction with a crimping-plate, J', to stretch and crimp the instep portion *n*, Figs. 5 and 6, of the boot.

The heel-crimping plate J is carried by a stationary bracket, K, secured on the table A by means of screws passing through slots, to provide for the adjustment of the heel-crimping plate J relatively to the outer side or face of the movable heel-crimping plate I, to suit

different thicknesses of leather and other purposes.

The instep-crimping plate *J'* is carried by a frame, *L*, which is made capable of adjustment on or over the table *A*, and within or on a raised frame, *M*, relatively to the inner sides or faces of the plates *I J*, the one *I* of which works between the heel-crimping plate *J* and the instep-crimping plate *J'*.

The adjustment of the instep-crimping plate *J'* toward and from the plates *I* and *J* provides not only for working different thicknesses of leather, but also for the proper stretching and crimping of the heel portion *m* of the upper as the movable plate *I* comes down on the boot-upper to carry the leather down between the plates *J J'*, as shown in Fig. 5. Such adjustment also facilitates the removal of the crimped upper from the machine.

The movable instep-crimping plate *I'*, which, as it comes down on the leather, carries the portion of it which is necessary to form the instep *n* over the instep-crimping plate *J'*, as shown in Fig. 5, to effect the necessary stretching and crimping of the instep, is also made capable of motion toward and from the instep-crimping plate *J'*, to bear the leather up against the plate *J'*, when the plate *I'* comes down on the leather to carry it down over the instep-crimping plate *J'*.

This lateral action of the movable instep-crimping plate *I'* is automatic and in accordance with the adjustment of the instep-crimping plate *J'*, to which end said plate *I'* is connected with its operating-lever *G'* by a sliding shank or stem, *r*, fitting through an eye, *s*, on the lever and a spring, *t*, applied to keep said plate *I'* up against the side of its operating-lever, but so that when a head or enlarged back end of the stem *r*, or roller carried by said head, strikes a horn, *S*, on or attached by a sliding base and screw to the adjustable frame *L*, as the plate *I'* descends to crimp the leather, said plate is moved toward the plate *J'* against the pressure of the spring *t*, and when the plate *I'* rises again free of the horn the spring *t* carries it back to its normal position.

To prevent the turning of the plate *I'* by its shank *r* in the eye *s* of the lever *G'*, a pin or stud, *u*, on said lever is made to engage with a notch, *v*, in the edge portion of said plate. The adjustable frame *L*, which carries the instep-crimping plate *J'* and the horn *S*, is moved toward the heel-crimping plate *J*, and locked or held at such adjustment by means of a cam-lever, *R*, arranged to act upon the back of the frame *L* and base carrying the horn *S*; at least such is the action when manipulating the lever *R* in one direction. A reverse manipulation of said lever allows of a spring, *w*, throwing the frame *L*, with its attached plate *J'* and horn *S*, back to its normal position.

Thus the manipulation of the lever *R* pro-

vides for adjusting the crimping-plates, or certain of them, to suit different thicknesses of leather, and to facilitate the entry of the boot-upper between the crimping-plates *J J'* by the descent of the movable crimping-plates *I I'*, as also the removal of the boot-upper after it has been crimped.

When introducing the boot-upper to the machine it is suitably arranged in a flat or open condition over the upper edges of the lower crimping-plates, *J J'*, while the upper or movable crimping-plates, *I I'*, are in their raised positions, as shown in Fig. 1, and the frame *L*, with its attached crimping-plate *J'* and horn *S*, has been set back by a suitable manipulation of the cam-lever *R*.

The foot is then applied to the treadle of the spring treadle-motion *E*, or any other means may be employed to start the machine and bring the crimping-plates *I I'* down on the leather, and the frame *L* adjusted by the lever *R* to force the crimping-plate *J'* and horn *S* toward the lower crimping-plate *J*. The rotation of the pin *h*, operating in the slots *k l* of the levers *G G'*, first brings down the heel-crimping plate *I* to bend the leather down over the lower crimping-plate *J*, which effects the necessary stretch and hold on the leather as the upper plate *I*, acting in conjunction with the plates *J* and *J'*, which clamp the leather in between them, crimps the heel portion *m*. In the meantime, but following in the wake, so far as any action on the leather is concerned, as shown in Fig. 3, the plate *I'* descends and is forced inward by the horn *S* toward the plate *J'*, and acts in conjunction with said plate *J'*, to bend the portion of the leather which lies over the plate *J'* down over said plate *J'*, and effects the necessary crimping of the instep portion *n*, the plate *J'* serving, by its stretching hold on the leather, conjointly with the clamping action of the moving crimping-plate *I'*, to assist in the crimping of the instep portion *n*. The plates *I I'* then rise from the work to their normal position, and the cam-lever *R* is manipulated to draw back the plate *J'* from the plate *J*. The boot-upper is then removed from the machine doubled or folded, and with its heel and instep portions *m n* crimped, as shown in Fig. 6, after which the leather is doubled or turned over by hand in a reverse direction at its crimped heel part *m*.

In a machine constructed to operate as described, not only does the same crimping stroke or action serve to crimp both the heel and instep of the boot, but there is no frame in the way of the crimping-plates to interfere with the ready placing and removal of the leather.

Of course, the forms of the crimping-plates may be varied to suit different classes or shapes of work.

The several crimping-plates *J J'* and *I I'* are all in parallel relation with each other.

A strip of india-rubber, *b'*, should be arranged at back of the crimping-plate *J*, to en-

able it to yield sufficiently to accommodate a thick piece of leather, and so prevent the tearing of the leather in the crimping operation.

A similar strip of india-rubber, b^2 , may also be arranged at back of the crimping-plate J' .

We claim—

1. The combination, with lower crimping-plates arranged in parallel relation with each other, of upper or movable crimping-plates, also arranged in parallel relation with each other, and attached to or carried by levers having their center of motion in rear of the stationary crimping-plates, and means for actuating said levers, constructed to crimp one portion of the leather in advance of the other, substantially as specified.

2. The combination of the lower crimping-plate J , the lower crimping-plate J' , adjustable toward and from the plate J , the levers G G' , the moving upper crimping-plate I , ar-

ranged for operation between the plates J J' , and the moving upper crimping-plate I' , having a lateral motion relatively to the plate J' , by mechanism substantially as described, as well as a movement in common with the lever G' , which carries it, substantially as specified.

3. The sliding frame L , with its attached crimping-plate J' , in combination with the crimping-plate J , the lever G , with its attached crimping-plate I , the lever G' , with its attached crimping-plate I' , adjustable in a lateral direction relatively to the plate J' , the sliding frame L , the horn S , and means for actuating said frame, substantially as and for the purposes herein set forth.

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