(No Model.) 2 Sheets—Sheet 1.

J. E. CLEMENT.

MACHINE FOR WHITENING LEATHER.

No. 261,309. Patented July 18, 1882.

Fig. 1.

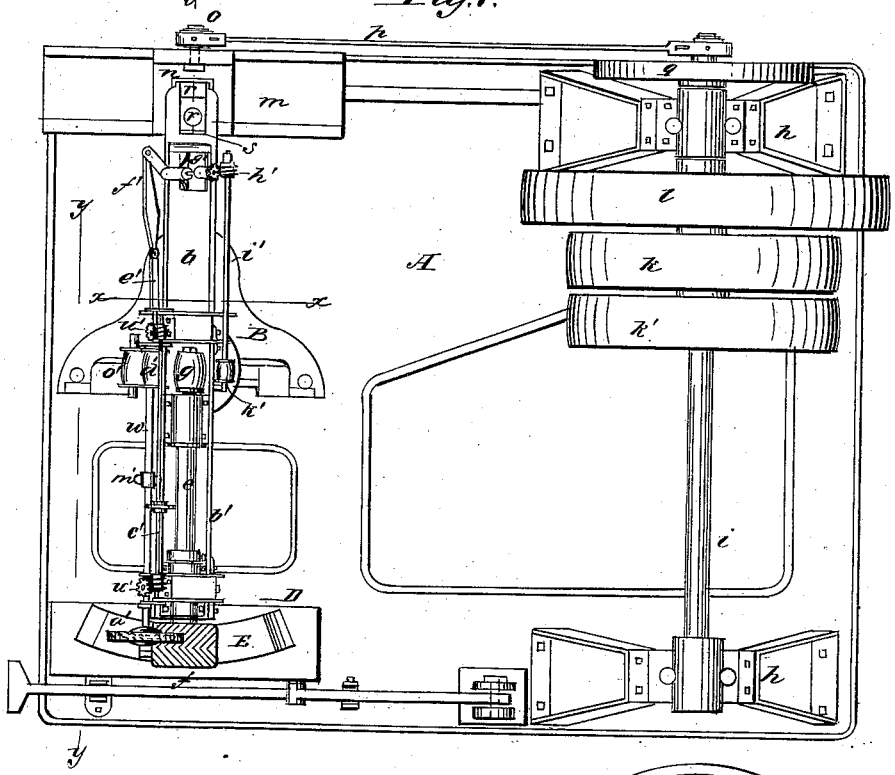
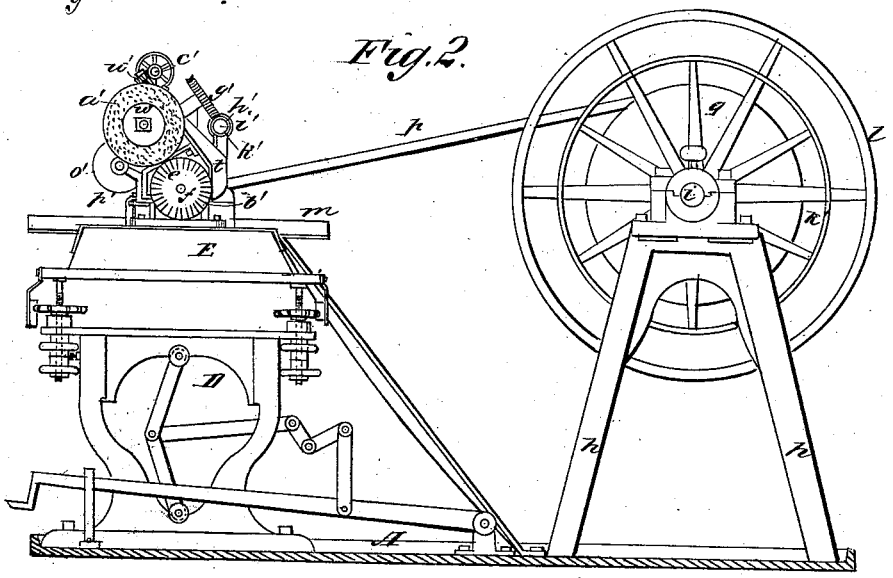


Fig. 2.



WITNESSES:

Francis McArdle

C. Sedgwick

INVENTOR:

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

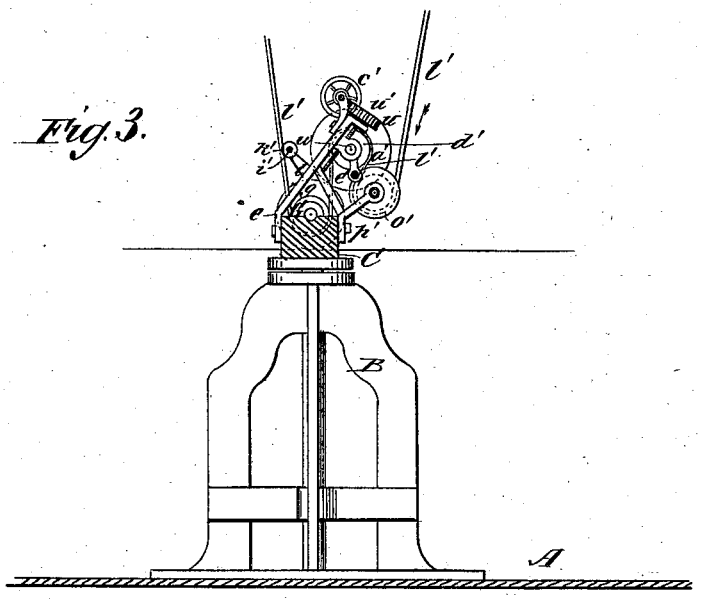


Fig. 4

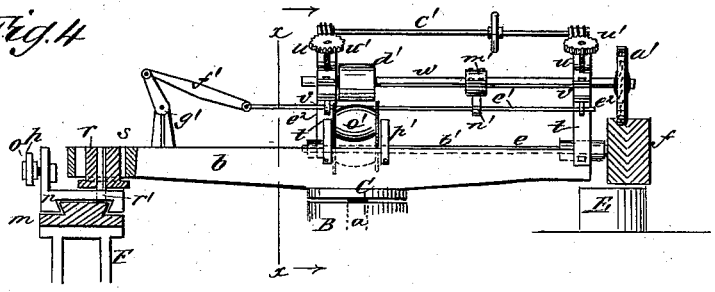
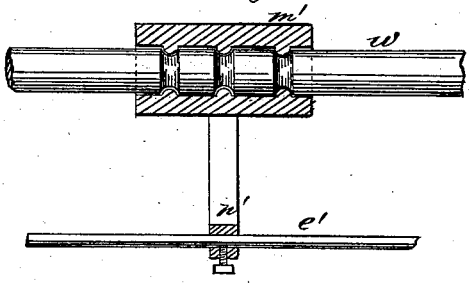


Fig. 5.



WITNESSES:

Francis M. Ardle.

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INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN E. CLEMENT, OF PEABODY, MASSACHUSETTS.

MACHINE FOR WHITENING LEATHER.

SPECIFICATION forming part of Letters Patent No. 261,309, dated July 18, 1882.

Application filed February 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. CLEMENT, of Peabody, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Machines for Whitening Leather, of which the following is a full, clear, and exact description.

The present improvements relate to the machine shown in Letters Patent to J. E. Clement and John A. Enos, dated September 13, 1881, and numbered 247,014; and the invention consists in a novel arrangement of mechanism for rocking the cutter-shaft, in a vibrating grinder-wheel fitted for continuous operation, and in certain other features of construction, all having the object to simplify the machine and render the operation more perfect, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the machine. Fig. 2 is an end view of the same. Fig. 3 is a cross-section on line *x x* of Figs. 1 and 4. Fig. 4 is a longitudinal section on line *y y* of Fig. 1, and Fig. 5 is a detail section of the thrust-box.

A is the bed-plate. B is a stand supporting the rocking hub C by its spindle *a*. D is a stand carrying feed-bed E. *h h* are stands supporting a horizontal shaft, *i*, which carries fast and loose pulleys *k k'* for the belt from the main driving-shaft and a pulley, *l*, for a belt to drive an overhead counter-shaft. *b b'* are arms projecting from hub C. *e* is the cutter-shaft sustained in suitable bearings on the arm *b'*, and carrying the cutter-head *f* above bed E, and also provided with a pulley, *g*. These parts are substantially the same as shown in the aforesaid Letters Patent. The variations and additions are as follows:

F is a stand supporting a horizontal slideway, *m*, at the end of arm *b*, and *n* is a slide-block fitted for movement on the slideway.

o is a wrist-pin on the slide-block, to which is connected a rod, *p*, from a crank-wheel, *q*, on shaft *i*.

r is a gudgeon attached to slide *n* by a pin, *r'*, and fitting a slot, *s*, in the end of the arm *b* of the hub C, so that by movement of the slide the hub is rocked, the movement of the gudgeon in slot *s* allowing for the change of position.

t t are brackets fixed on the arm *b'* of the hub, and carrying in suitable bearings screws *u u*, on which are boxes *v v*, that carry the grinder-shaft *w*.

The grinder *a'* is an emery-wheel, bearing on the cutters at one side of the head, the intention being to have continuous contact which is regulated, as the grinder wears, by turning the screws *u* to force shaft *w* downward. A worm-shaft, *c'*, carried by brackets *t* and engaging worm-wheels *u'* on the screws, is used for simultaneous movement of the screws.

On the grinder-shaft *w* is a pulley, *d'*, connected thereto by a pin and key slot, that allows endwise movement of the shaft. *e'* is a rod sustained in guides e^2 on boxes *v*, and connected by a rod, *f'*, to the crank-arm of a short cross-shaft, *g'*, that is sustained on the rocking arm *b*. The shaft *g'* is connected by a worm and pinion at *h'* with a shaft, *i'*, that extends to hub C, where it has a pulley, *k'*, turned by contact with the driving-belt *l'* of the cutter-shaft, so that the rod *e'* is given an endwise reciprocation. On the grinder-shaft is a thrust-box, *m'*, (shown most clearly in Fig. 5,) which has internal flanges taking into grooves on the shaft, and has also an apertured flange, *n'*, clamped on rod *e'* by a set-screw, whereby the grinder-shaft is reciprocated with the rod. By these devices the grinder is moved back and over the cutters from one side of the cutter-head to the other. The same movement may be obtained by connecting the outer end of reciprocating rod direct to grinder-flanges by means of a fork. In this case the grinder-shaft does not reciprocate, but same motion is communicated to grinder and flanges which reciprocate upon the end of shaft having spline, key, or feather set into it, giving grinder a rotary movement.

Instead of driving the cutter by a belt from shaft *i*, as shown in the Letters Patent named, the cutter and grinder are driven by the belt *l'* from the overhead counter-shaft, which, as before mentioned, is driven from the shaft *i*. The belt *l'* passes first beneath a tightening-pulley, *o'*, that is hung on a bracket, *p'*, then

upward and over the pulley d' of the grinder-shaft, and then beneath pulley g of the cutter-shaft, as shown most clearly in Fig. 3. The driving-belt thus extends at right angles, or nearly so, to the plane in which the hub C rocks, and is slightly twisted by the rocking movement. That arrangement is more reliable, because the belt remains centered on the pulleys, and is not shifted from side to side, as is the case with a belt extending in the plane of vibration. The bracket p' of the tightener-pulley o' is attached to hub C by screws passing through slots in the bracket, so that adjustment can be readily made.

By these improved features of construction and arrangement the operation of the machine is greatly facilitated.

In place of the cutter-head, a smooth or fluted roller, hollow and heated by steam, may be substituted, and the machine then used for ironing and glossing leather.

The cutter-head f is provided with V-shaped cutters, as shown in Fig. 1. That form is preferred as being most effective.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In machines for whitening leather, the combination of shaft i, crank q, rod p, slide n, and arm b of the rocking hub C, substantially as described, for operation as set forth.

2. In machines for whitening leather, the reciprocating slide n, provided with gudgeon r, and the slotted arm b, substantially as shown and described, combined for operation as set forth.

3. The combination, with the cutter-head f, the rotary grinder a', and means, substantially as described, for reciprocating the grinder across the cutter-head, forcing it down thereon, substantially as and for the purpose set forth.

4. The combination of grinder-shaft w, slide-rod e', box m', rod f', and revolving crank-shaft g', substantially as described, for operation as set forth.

5. The combination of grinder-shaft w, screws u, brackets t, and boxes v, substantially as described, for the purposes specified.

6. The thrust-box m', having apertured flange n', in combination with the vibrating rod e' and grinder-shaft w, substantially as described.

7. The combination of adjustable tightener-pulley o', pulley d' of the grinder-shaft, pulley g of the cutter-shaft, and belt l', substantially as shown and described.

8. In a leather-whitening machine, the combination, with a rocking hub carrying the cutter-shaft, having pulley g, of the driving-belt l', the tightening-pulley o', and the pulley d' on the grinder-shaft, substantially as herein shown and described, whereby the belt is centered on the pulleys and prevented from shifting thereon, as set forth.

JOHN EDWARD CLEMENT.

Witnesses:
OSCAR BRADLEY HURLBUT,
JOHN AUGUSTUS ENOS.