

(No Model.)

L. ZALLER.

MACHINE FOR CARDING HORSE HAIR.

No. 342,945.

Patented June 1, 1886.

fig. 2.

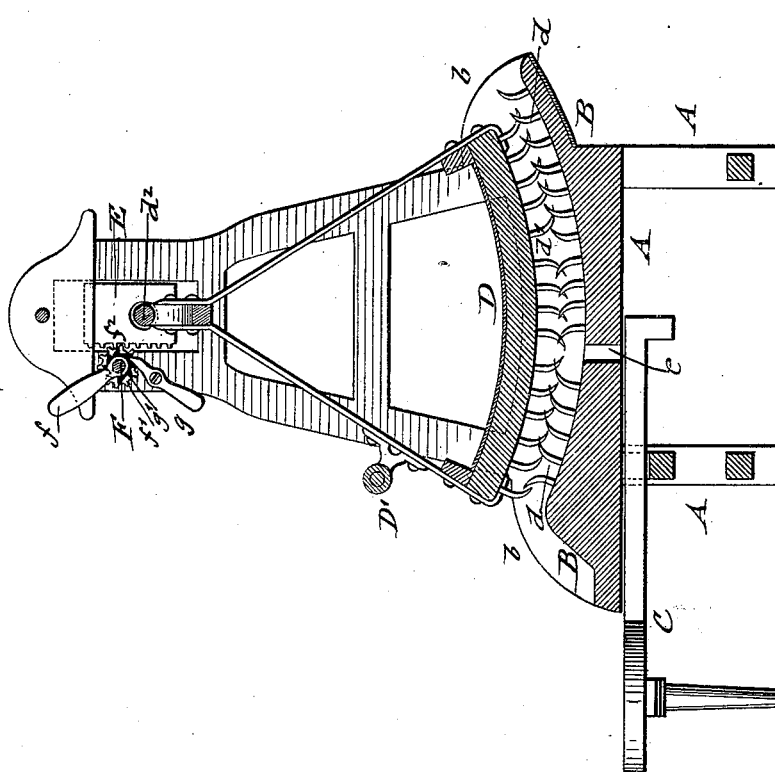
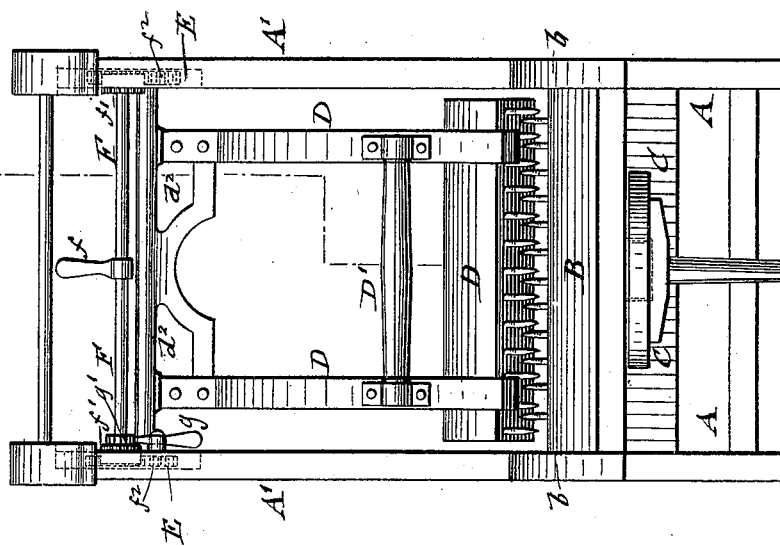


fig. 1.



WITNESSES:

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MACHINE FOR CARDING HORSE-HAIR.

SPECIFICATION forming part of Letters Patent No. 342,945, dated June 1, 1886

Application filed February 12, 1886. Serial No. 191,698 (No model)

To all whom it may concern:

Be it known that I, LOUIS ZALLER, of the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Carding Horse Hair, &c., of which the following is a specification.

This invention relates to an improved machine for carding horse-hair, moss, and other animal and vegetable fibers, so as to uncurl and loosen the same; and the invention consists of a machine for carding horse hair formed of a segmental bed-frame, which is provided with groups of hooks, the center group of hooks being bent in opposite directions to the adjoining groups, with guard-plates at both sides, and of an arc-shaped oscillating frame suspended in bearings in the supporting-frame and arranged concentric to the segmental bed-frame, and which is also provided with groups of hooks or teeth, each group being bent in opposite direction to the next adjacent group and opposed to the teeth of the bed-frame. The bearings of the oscillating frame are adjusted higher or lower in the standards of the supporting-frame by means of a shaft and pinions, said pinions meshing with racks on the bearings, and are locked in position by a ratchet-wheel and fulcrumed gravity-pawl.

In the accompanying drawings, Figure 1 represents a front elevation of my improved machine for carding horse-hair and other fibers; and Fig. 2 is a vertical transverse section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the supporting-frame of my improved machine for carding horse-hair, which frame is formed of two upright standards, A', and a segmental bed-frame, B, supported by said standards.

Below the bed-frame B is arranged a sliding seat, C, which is guided in suitable ways so as to be drawn out for use or pushed back out of the way when the machine is not required for use.

The segmental bed-frame B is provided at both sides with segmental guards *b b* in line with the standards A', and intermediately between said guards with groups of teeth *d*, that are bent or curved, one group being bent in one direction and the adjoining group in op-

posite direction, and so on alternately. A transverse slot, *e*, at or near the lowest part of the bed frame B, serves for conducting off the dust, small hairs, or other fibers, &c., while the machine is at work. An oscillating frame, D, is arranged above the bed-frame and supported by a transverse shaft, *d'*, in bearings E, which are guided in recesses in the upright standards A' of the frame A. The lower part of the oscillating frame D is made arc-shaped and concentric to the bed-frame B, and provided with groups of teeth or hooks *d'*, the teeth of one group being bent in one direction and the teeth of the adjoining groups in opposite direction, said teeth opposing the teeth of the bed-frame. A transverse handle-rod, D', is attached to the front part of the oscillating frame, with which to move said frame forward and backward.

For adjusting the oscillating frame D to a greater or smaller distance from the bed-frame B, so that the hooks of the said frames will intermesh more or less, the bearings E are adjusted higher or lower in the standards A' by means of a transverse shaft, F, having a handle, *f*, at its middle part and pinions *f'* at the ends, which pinions engage racks *f''* on the bearings E, so that by turning the shaft F more or less by means of the handle *f* the bearings E are raised or lowered in the recesses of the standards A'. The bearings E are locked in the position to which they are adjusted by means of a gravity-pawl, *g*, which engages the teeth of a ratchet-wheel, *g'*, on the shaft A, as shown in Fig. 2. When it is desired to adjust the bearings, the gravity-pawl *g* is first released, upon which the pinion-shaft F can be turned in either direction, as required.

When the machine is desired to be used for carding horse-hair, moss, or other animal or vegetable fibers, the workman takes his place on the seat C in the front of the bed-frame B and introduces the horse-hair or other fibers by one hand at the front of the bed-frame, after taking hold of the oscillating frame D and pushing it back with the other hand. The material to be carded is distributed uniformly by the left hand over the curved teeth of the bed-frame and separated by the action of the teeth of the bed-frame and oscillating frame, so as to be gradually fed backward over the bed-frame until it

is dropped over the rear end of the same. New material is continually fed by the left hand at the front end of the bed-frame, and the oscillating frame operated by the right
 5 hand, whereby a continuous carding action of the machine takes place. If the material to be carded is long and tough, the oscillating frame is adjusted higher relatively to the bed-frame, while when the material to be carded
 10 is short and soft the oscillating frame is lowered and oscillated closer to the bed-frame. In the latter case it is advisable sometimes to pass the material twice through the machine. Should the teeth of the machine get choked
 15 by a too great quantity of hair being fed to the same, the oscillating frame is raised so as to be disengaged from the material on the bed-frame, which material is then distributed uniformly over the bed-frame, upon which the
 20 oscillating frame is lowered again and the carding operation continued. In this manner horse-hair, moss, and other animal and vegetable fibers can be uniformly carded by the machine, which can be operated with but little
 25 effort and without requiring skilled hands, and which is specially adapted for upholsters, saddlers, carriage-manufacturers, and similar trades.

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

1. The combination of a segmental bed-frame having groups of hooks or teeth, the teeth of one group being bent in opposite direction to the teeth of the adjoining group, with an oscillating arc-shaped frame having groups of
 35 teeth, which are also bent in opposite direction to each other and arranged to intermesh with the teeth of the bed-frame, substantially as set forth.

40 2. The combination of a segmental bed-frame having groups of teeth, the teeth of one group

being bent in opposite direction to the teeth of the adjoining group, an oscillating arc-shaped frame also having groups of teeth bent in opposite direction to each other, and means,
 45 substantially as described, whereby the oscillating frame is adjusted higher or lower, so that the teeth of the oscillating frame intermesh to a smaller or larger degree with the teeth of the bed-frame, substantially as set
 50 forth.

3. The combination of a supporting bed-frame having side standards, a segmental bed-frame having teeth arranged in groups, the teeth of one group being bent in opposite direction to the teeth of the adjoining group, an
 55 oscillating frame having an arc-shaped lower part concentric with the bed-frame, and provided with groups of teeth also bent in opposite direction to each other, bearings guided
 60 in recesses of the standards, a supporting or pivot shaft for the oscillating frame, and means for adjusting said bearings higher or lower in said standards, substantially as set forth.

4. The combination of the supporting-frame
 65 A, having upright standards A', a bed-frame, B, having bent teeth *d*, an oscillating frame, D, having bent teeth *d'*, intermeshing with the teeth of the bed-frame, the pivot-shaft *d'*, bearings E, said bearings having racks *f'* at one
 70 side, a transverse shaft, F, having pinions *f'*, meshing with said racks, and a pawl-and-ratchet device, *g g'*, for locking the pinions and bearings after the same have been adjusted, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

LOUIS ZALLER.

Witnesses:

PAUL GOEPEL,
 MARTIN PETRY.