

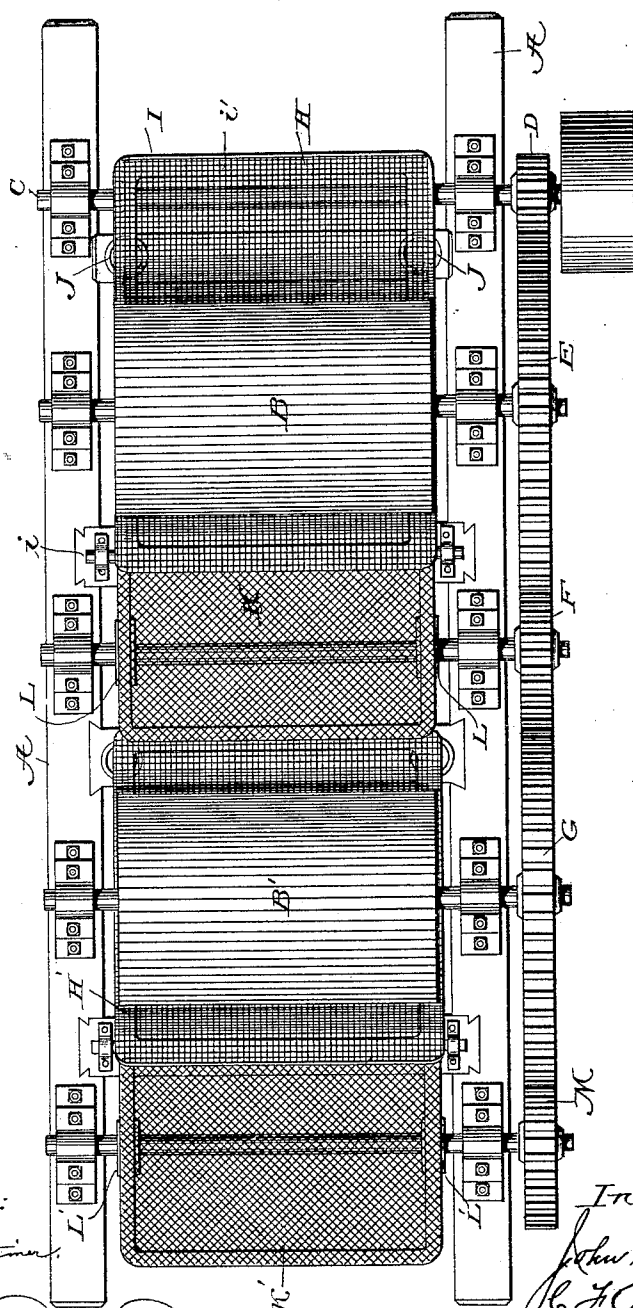
(No Model.)

2 Sheets—Sheet 1.

J. VON OVEN & C. F. PANKNIN.
MOSS CLEANING MACHINE.

No. 462,830.

Patented Nov. 10, 1891.



Witnesses:

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Inventors

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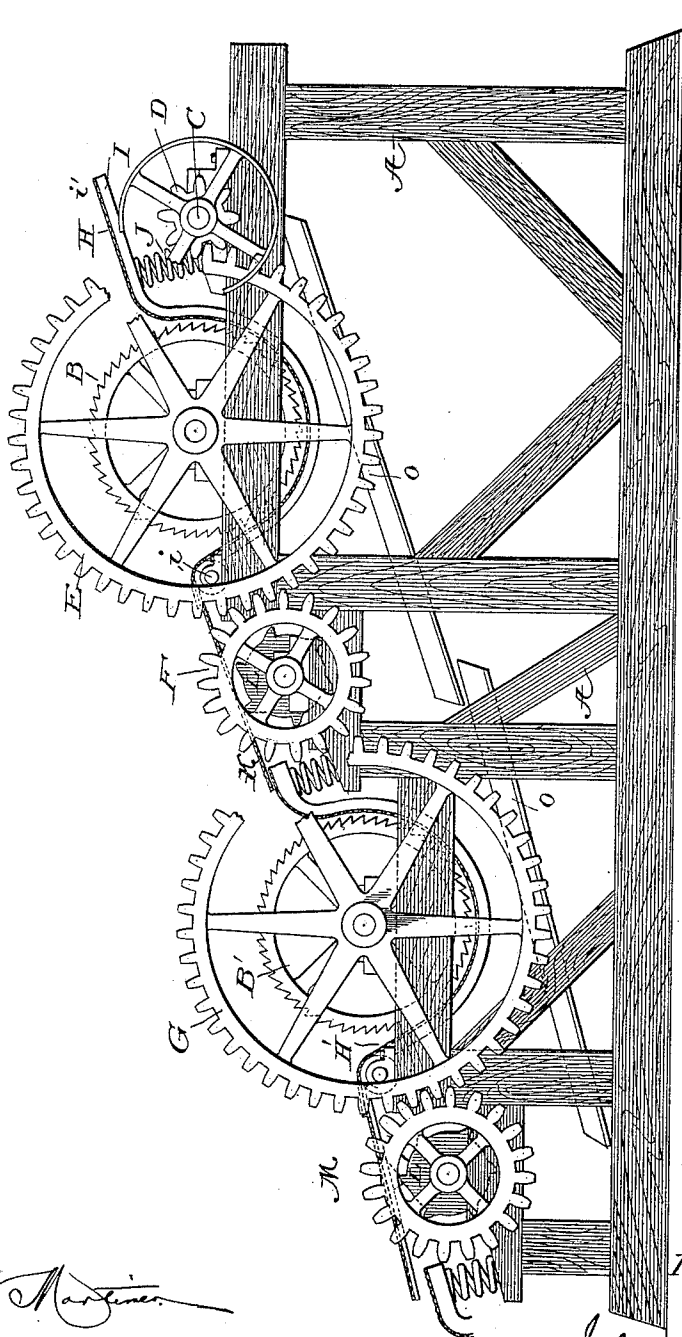
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Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN VON OVEN AND CHARLES F. PANKNIN, OF CHARLESTON, SOUTH CAROLINA.

MOSS-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 462,830, dated November 10, 1891.

Application filed January 15, 1891. Serial No. 377,874. (No model.)

To all whom it may concern:

Be it known that we, JOHN VON OVEN and CHARLES F. PANKNIN, of Charleston, in the county of Charleston and State of South Carolina, have invented certain Improvements in Moss-Cleaning Machines, of which the following is a specification.

This invention relates to a machine for treating gray moss, (*Tillandsia usneoides*), which abounds in the southern portion of the United States, in order to adapt the same for use for upholstering and packing purposes. This moss consists of a central fiber of moderate strength inclosed in a soft velvety covering which must be removed in order to adapt the fiber for use. Heretofore it has been the custom to bury the moss in the earth or submerge it in water for a long period of time in order to rot the covering, which was subsequently removed by a special treatment as useless waste product. The machine is so constructed as to subject the moss to a moderate rubbing action, as distinguished from the scraping, scarifying, or combing action to which hemp and other fiber plants are commonly subjected in order to separate the woody outer portions from the internal fiber. The fiber with which our machine is intended to deal is, as compared with hemp, cotton, and like fibers, comparatively weak and soft, and requires therefore to be handled with caution and subjected to a mild rubbing action, so moderated as to detach the soft covering without crushing or breaking the central fiber, and it is to this end that our machine is specially designed.

In the accompanying drawings, Figure 1 represents a top plan view of the machine. Fig. 2 is a side elevation of the same with the parts broken away in order to expose other portions to view.

Referring to the drawings, A represents a rigid main frame, and B B' two horizontal fluted cylinders, having their shafts mounted in fixed bearings on the frame. A driving-shaft C communicates motion through a pinion D thereon to a gear-wheel E, fixed to the shaft of cylinder B, and communicating motion

in its turn through pinion F to a gear-wheel G on the shaft of the second and lower cylinder B', whereby the two cylinders are turned in the same direction, as indicated by the arrows. Beneath the upper cylinder B there is a concave composed of coarse wire-cloth H, fixed on top of a sustaining-frame I, which is supported at one end by a horizontal pivot i, and at the other and receiving end by one or more springs J, whereby the concave is urged toward the drum with a yielding pressure. The spring-sustained end of the concave is extended outward to form a feed-table i', while the rear or delivery end is lapped upon a perforated table K or screen, which is mounted at one edge on the horizontal pivot i and sustained by an underlying toothed wheel or cam L, carried by the shaft of pinion F, and acting to lift and drop the table at short intervals. The free edge of this table overlaps a second concave H', underlying the cylinder B', and constructed and supported in all respects like the concave of the first cylinder. From the delivery side of this second concave a second perforated table or screen K' is extended, this second table being hinged and operated like the first by an underlying cam-wheel L', the shaft of which receives motion through a pinion M thereon from the gear-wheel of the second cylinder. Spouts or shoes O, underlying the cylinders and screens, incline downward to one end of the machine.

In operating the machine the moss without special preparation is placed upon the feed-table and passes down between the first cylinder and concave, by which it is subjected to a strong rubbing action, which without materially breaking the fiber tends to loosen and set free the soft outer covering. Much of the material thus freed escapes through the concave. Passing from the concave the moss is delivered upon the table K, where it is shaken and lightened up, so as to permit the escape of the remaining free material, after which it is passed between the second cylinder and concave to be again rubbed, and finally to the second table, where it is again

shaken and then discharged. As the ribs or flutes of the cylinders are extended continuously from one end to the other they act with a rubbing effect, passing forward over the mass of underlying fiber and working it gradually forward with a rolling action over the concave, instead of positively engaging the fiber with the violent and tearing action which would attend the use of studs or short teeth.

The ribs or teeth of the cylinders may be varied in form, and the concaves and screens may be made of any suitable pervious or foraminous material; but the teeth shown are preferred, and it is preferred to use for the concaves wire-cloth of very coarse mesh, as the round wire acts effectively in cleaning the fiber without impairing its quality. The material removed from the fiber, being rich in nitrogen, is a valuable fertilizer.

It is obvious that the machine may be made with any desired number of cylinders and concaves, and that a single cylinder and concave may be used with entire success by

repeatedly treating the moss if the first treatment is insufficient.

Having thus described our invention, what we claim is—

1. In a machine for treating moss to remove the soft covering without injury to the internal fiber, the combination of a rotary cylinder fluted from end to end, an opposing concave of wire-cloth, and yielding supports for said concave.

2. In a machine for treating moss, the combination of the two cylinders, each having ribs from end to end, the underlying concaves of wire-cloth, the intermediate shaking-screen, and means for vibrating the screen.

In testimony whereof we hereunto set our hands, this 3d day of January, 1891, in the presence of two attesting witnesses.

JOHN VON OVEN.

CHARLES F. PANKNIN.

Witnesses:

DUNCAN C. ROBERTSON,
F. M. DUQUENESON.