Charles Wolff.
and
111415 Charles Wolff, Jr.

Machine for Disintegrating Wood.

PATENTED JAN 31 1871

Fig.1.

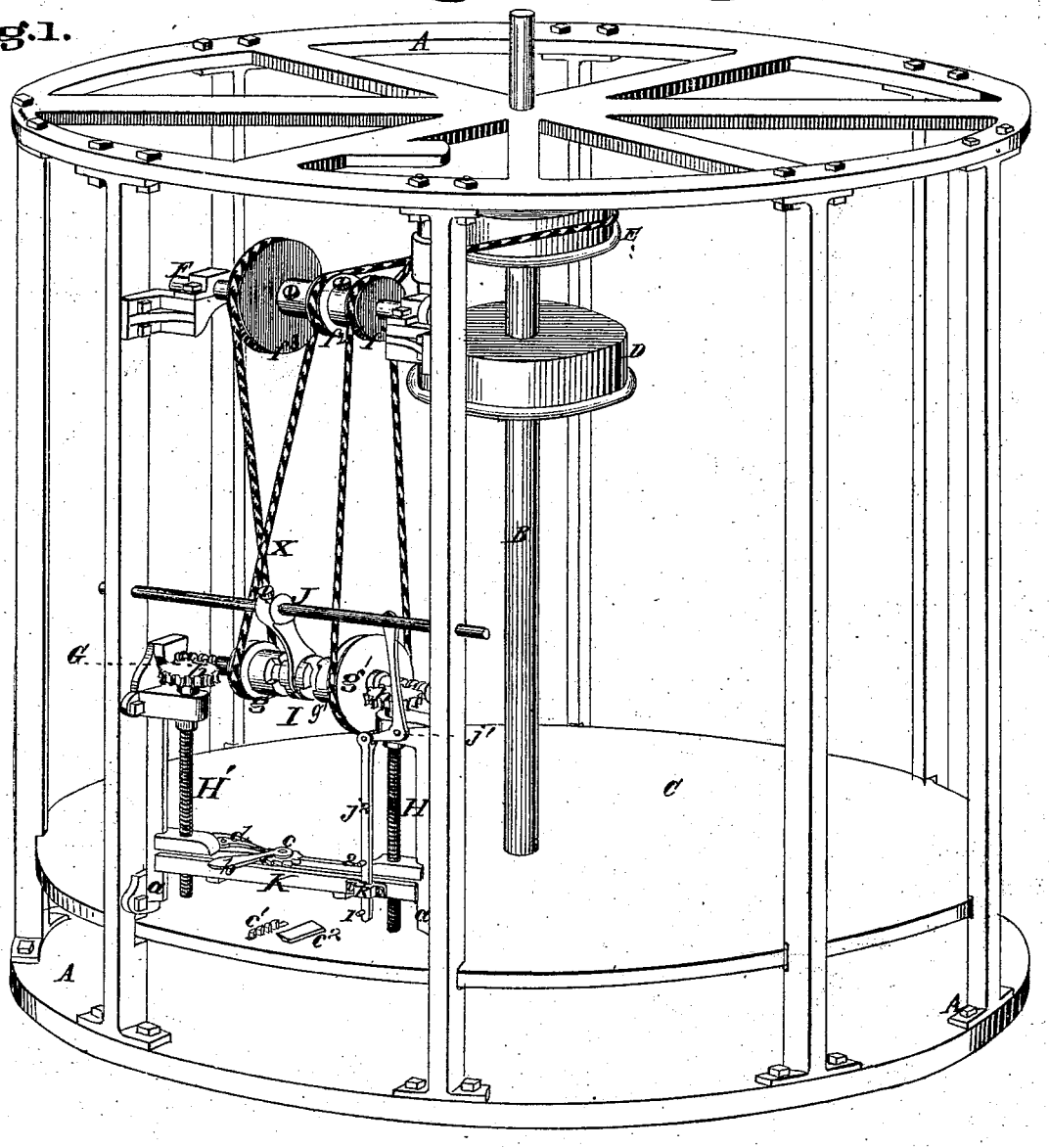


Fig.2.

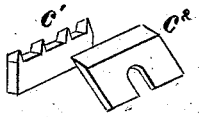
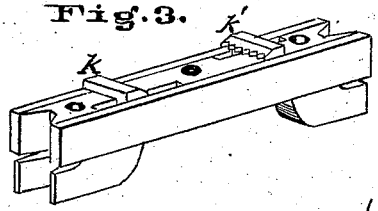


Fig.3.



Attest.
F. Van Kannel

Inventors.
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United States Patent Office.

CHARLES WOLFF, SR., AND CHARLES WOLFF, JR., OF CINCINNATI, OHIO.

Letters Patent No. 111,415, dated January 31, 1871.

IMPROVEMENT IN MACHINES FOR DISINTEGRATING WOOD.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, CHARLES WOLFF, Sr., and CHARLES WOLFF, Jr., both of Cincinnati, county of Hamilton and State of Ohio, have invented a new and useful Machine for Disintegrating Wood; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing making a part of this specification.

Figure 1 is a perspective;

Figure 2 is a sectional view showing the bits; and

Figure 3 is an inverted view of the timber-frame.

Similar letters of reference indicate like parts.

The nature of the invention consists in the combination of parts of the machine, as hereinafter more fully described and claimed.

We construct our machine substantially as follows:

A A is the main frame, having eight uprights, to which the working parts are attached.

In the center stands the shaft B, to which is attached and with which revolve the disk C and pulleys D and E.

The drawing represents but one of a series of cutting and feeding apparatus, but it is intended to use as many as may be deemed advantageous, and connect the entire series by means of a coil spring or bevel-gears around the frame, one belt driving the whole series of shafts, of which F is the only one represented in the drawing.

To the shaft F are attached pulleys f^1 f^2 f^3, the pulley f^2 receiving the driving-belt, and pulleys f^1 and f^3 transmitting motion to the worm-shaft G below.

H H′ are two screws working in threads cut in the timber-frame, and having two wheels, *h h*, which engage with worms on the shaft G.

At I is an ordinary clutch engaging with the pulley *g*, which causes the worm-shaft G to rotate, and, engaging with pulley *g*, reverses the motion by means of the cross-belt *x*.

J is a shifter, to which is jointed the elbow j^1 and rod j^2 passing through a loop, *k*, on timber-frame K.

Two small projections, 1 and 2, on rod j^2, come in contact with loop *k* as the timber-frame moves up or down.

The timber-frame K is constructed so as to fit tightly the guides *a a*, in order that the cutting of the bits and the resistance caused thereby may not shake or move the same.

Two jaws, *k k′*, slide longitudinally with the timber-frame K, and are operated by a pinion rotating between and engaging with two racks which are a continuation of the jaws.

To the pinion is attached a lever, *b*, provided with a ratchet, *c*, which is held by pawl *d*.

Near the disk C is attached a series of stripping-bits, c^1, and planing-bits, c^2. These bits are held and adjusted as ordinary plane-bits, easily detached and replaced for the purpose of sharpening the same. Their form and relative position are better seen in fig. 2.

The operation of our invention becomes obvious.

Motion having been given to the disk C, a block of wood is brought under the timber-frame K, and between the jaws *k k′*; the lever *b* is then forced around, which, acting through a pinion engaging with two racks, brings the jaws *k k′* together, firmly holding the block of wood. The pawl and ratchet hold the lever in any desired position. The shifter is now moved so as to bring the clutch I in contact with the pulley *g′*, whereby the screws are caused to rotate, by means of the worms on shaft G and wheels *h h*, which causes the timber-frame slowly to descend, feeding regularly, while the bits cut away the block.

When the block has been reduced, the projection 1 on rod j^2 comes in contact with the timber-frame, which throws the clutch out of action, thus preventing the jaws holding the timber from coming in contact with the cutting-bits.

When the timber-frame K has come to its lowest point and brought to rest, the attendant shifts the clutch to the opposite side, which reverses the motion of the screws, and the timber-frame K is then run upward. Should the attendant be engaged with any other part of the machine the upward movement of the timber-frame will be arrested by projection 2 on the rod j^2, which throws the clutch out of action, as in the former case. The scrap of wood remaining can then be removed and another block replaced as before.

In this way the series of eight cutting apparatus can be kept in constant work with but one attendant, and without the necessity of stopping the machine.

Having thus described the construction and operation of our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. The feed-stop device, consisting of the elbow j^1, projections 1 and 2 on rod j^2, in combination with shifter J and clamp K, all arranged to operate as herein described and shown.

2. The combination of the shaft F, carrying pulleys f^1 f^2 f^3, shaft G, with pulleys *g g′*, screws H H′, wheels *h h′* engaging with the worm on shaft G, elbow j^1, projections 1 and 2 on rod j^2, shifter J, and clamp K, all arranged to operate as herein described and shown.

In testimony whereof we have hereunto set our hands this 27th day of June, 1870.

CHARLES WOLFF, SR.
CHARLES WOLFF, JR.

Witnesses:
T. VAN KANNEL,
JNO. F. DETERS.