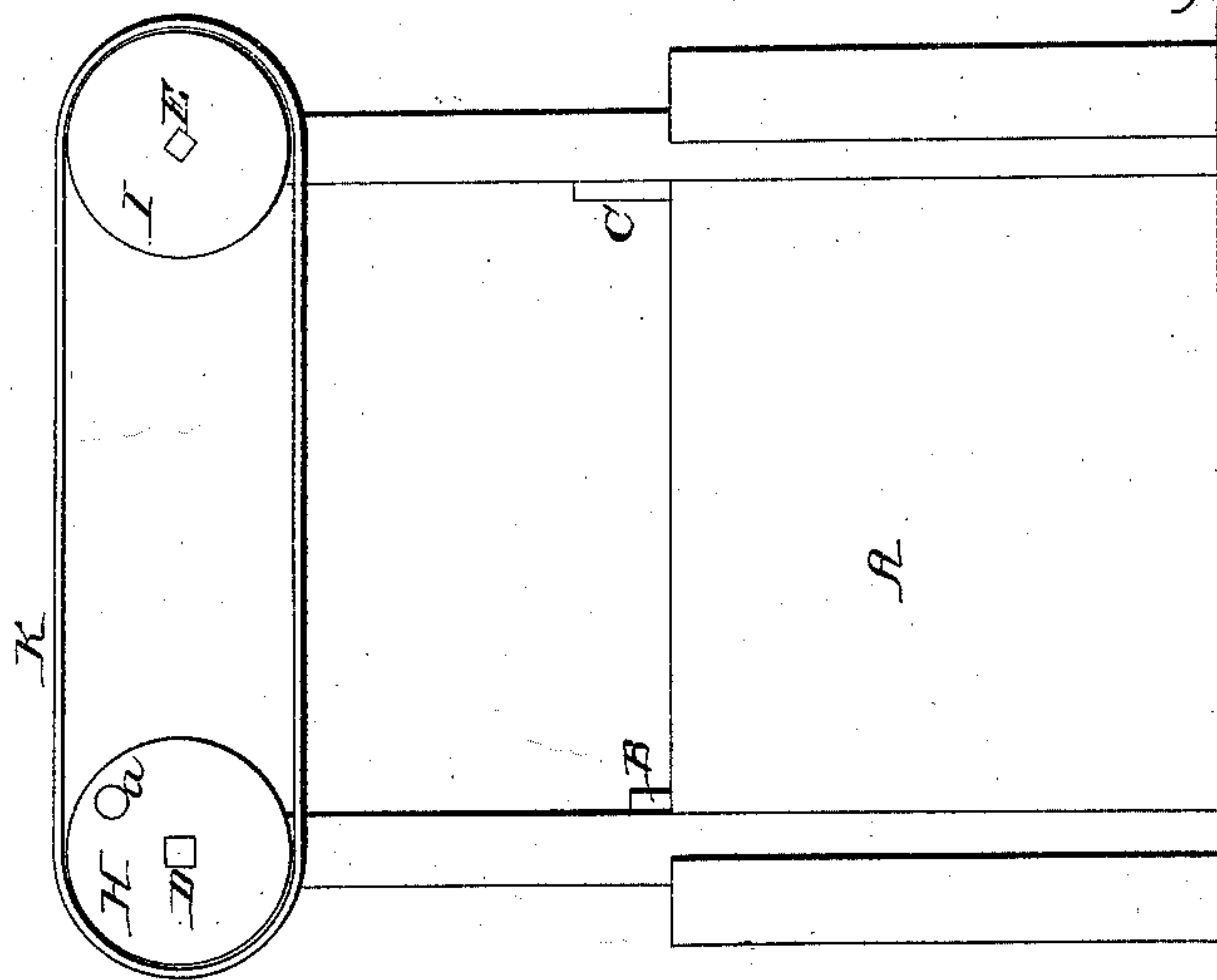


N. Dodge, Tanning Apparatus.

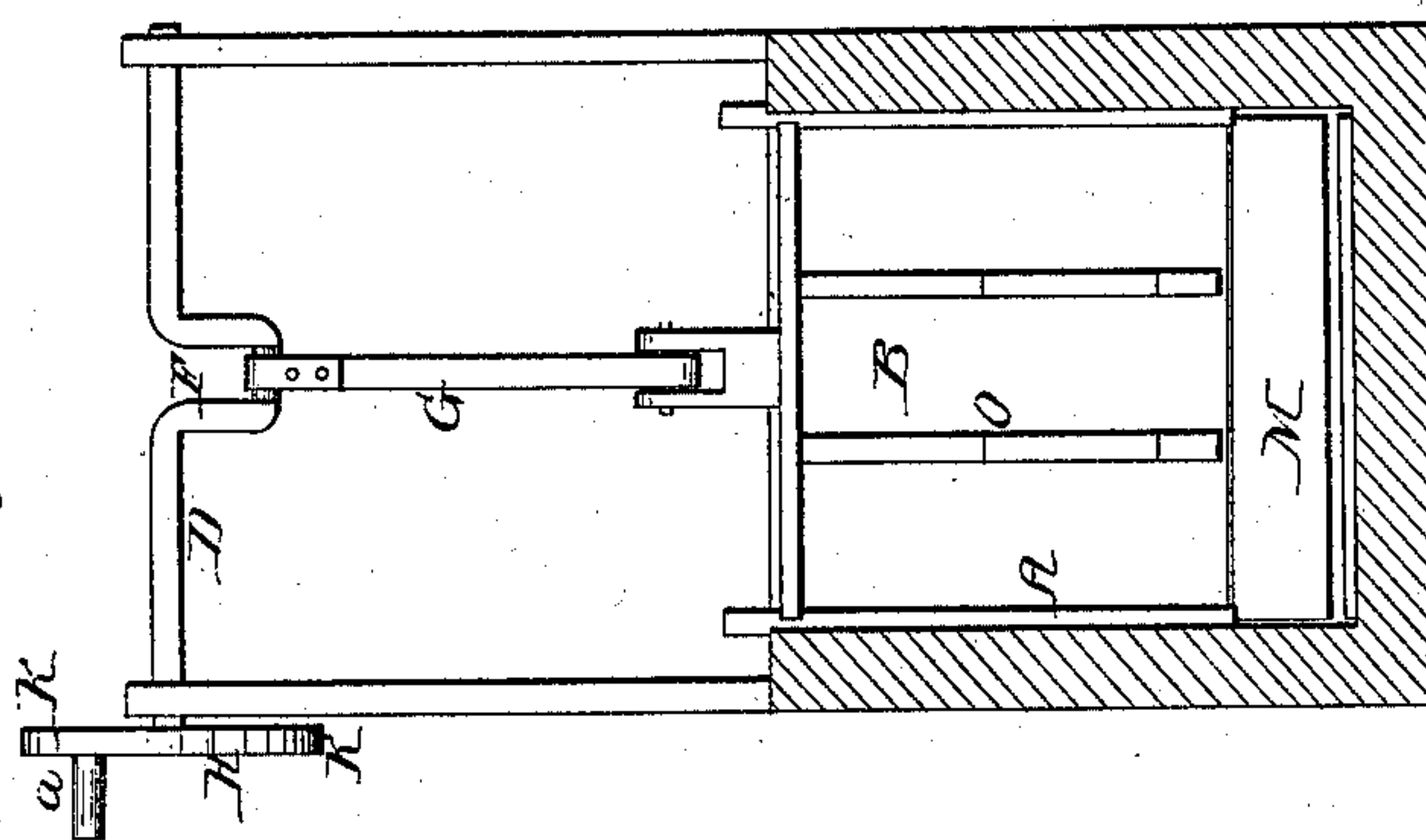
N^o 11,061.

Patented June 13, 1854.

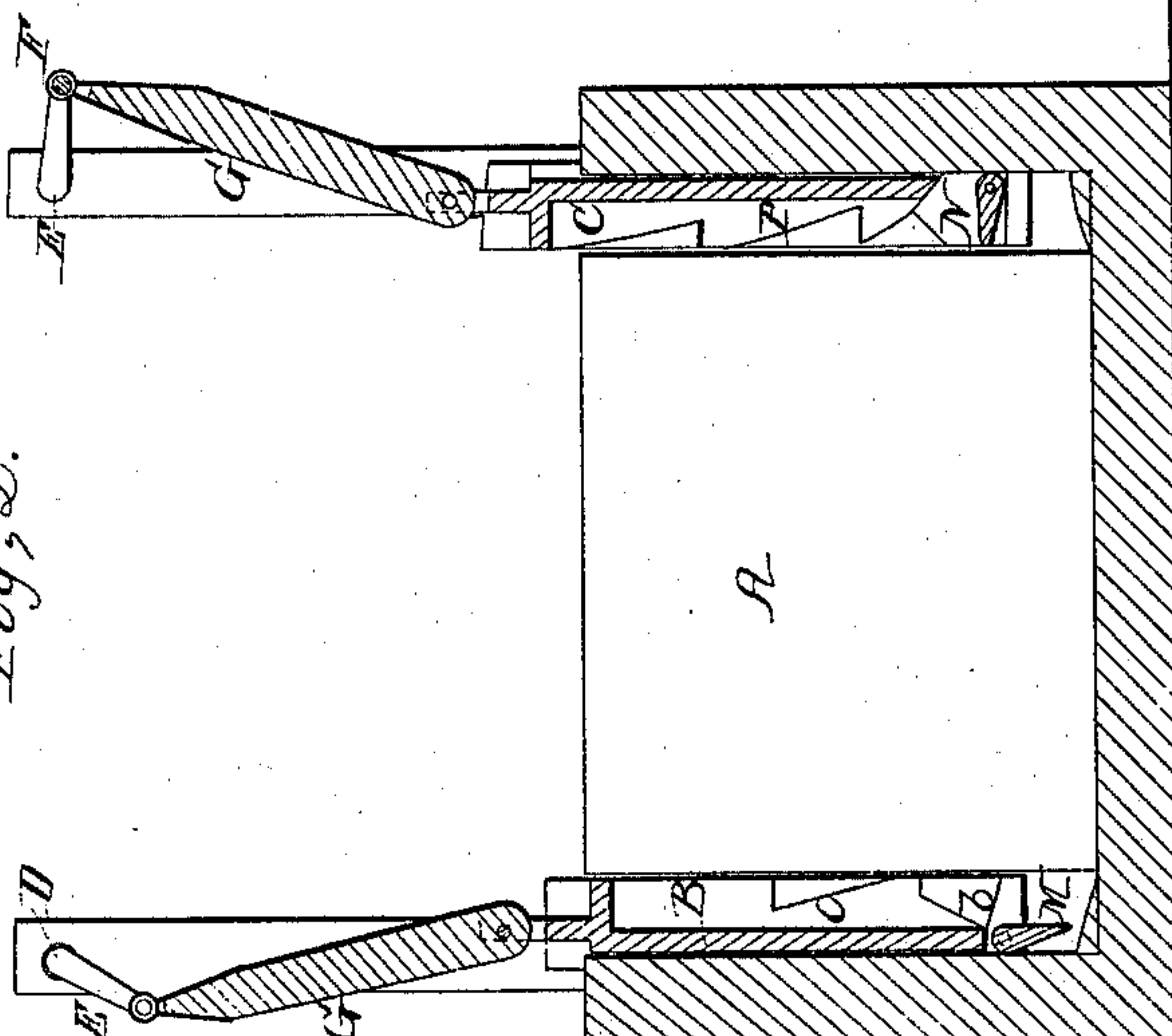
Fig; 1.



Fig; 3.



Fig; 2.



UNITED STATES PATENT OFFICE.

NATHANIEL DODGE, OF ORFORD, NEW HAMPSHIRE.

CONSTRUCTION OF TANNING APPARATUS.

Specification of Letters Patent No. 11,061, dated June 13, 1854.

To all whom it may concern:

Be it known that I, NATHANIEL DODGE, of Orford, in the county of Grafton and State of New Hampshire, have invented Improvements in Machinery for the Circulation of the Contents of Tan or other Vats; which machinery can be used to great advantage in handling hides; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1, represents a front view of a vat, having my improved mechanism applied to it. Fig. 2, is a vertical, central, and longitudinal section of the same. Fig. 3, is a transverse and vertical section of it.

A, in the drawings exhibits a rectangular shaped vat such as is usually employed in the process of tanning hides; within said vat and at each end of it there is placed a vertical frame B, or C, to which by means of a bell crank and a connecting rod, a reciprocating rectilinear motion in a vertical direction is given.

In the drawings, two horizontal shafts, D, E, are represented as placed respectively over the two frames, B, C, and provided with bell cranks F, F, which are connected to the frames B, C, by connecting rods or bars, G, G, and so that when the shafts are put in revolution, a reciprocating, rectilinear motion will be imparted to the frames. There is a pulley, H, or I, affixed on one end of each of the said shafts, an endless band K, being extended around said pulleys for the purpose of communicating motion from one to the other of them and so as to produce a simultaneous revolution of the two shafts whenever one of the pulleys is put in revolution by a power applied to a crank, a, extending from it. The lower end of each of the frames, B, C, is provided with a dasher or board, M, or N, which is hinged or jointed to the frame at or near its outer edge. The first of these dashers, viz., M, is so applied to its frame B, as to enable it to be turned from a horizontal position downward to a vertical one, it being stopped by suitable stops or shoulders (one of which is seen at b,) from rising above the horizontal position. The other dash-board N, is applied to its frame in such manner that

it can not fall below a horizontal position, but may rise upward therefrom into a vertical position. I would remark however that the assumption of the horizontal position of each frame as the limit of its movement is not really essential, but is the most convenient or best limit to be used in practice. Each board instead of being limited in its movements to an angle of ninety degrees from the vertical plane may be limited in its movements to a less angle therefrom, while one the said dash-boards is made to turn downward toward the vertical and the other upward from it. Each frame, B, or C, is provided with a set of notch bars as seen at O, P, which extend inward from it and are arranged as seen in the drawings.

If we suppose the vat to be filled with liquor and the two frames to be lifted upward, the dasher of the frame C, will fall from a vertical down to a horizontal position and be lifted against the mass of liquor that may be lying directly over it. At the same time the dasher of the frame B, by being elevated against the liquor will fall down into a vertical position; so, when the frames are next depressed, this last dasher will rise upward and be forced downward broadside against the liquor, while the other dasher will rise upward and be carried endways down against the liquor. Such an action of the two dashers during their elevation or depression one being carried broadside and the other endwise against the liquor produces a regular and continued action or circulation of the contents of the vat, a current therein being induced first from one frame upward and toward the other, and thence from the other downward and toward the first; the notch bars of the frame serving to aid in turning over or producing a revolution of the hides or grosser contents of the vat.

The object to be gained by a machine so constructed is not only to produce a revolution of the liquor in the vat, but at the same time to carry the hides around in the liquor whereby the revolution of the liquor among the hides and the revolution of the hides being made to take place at the same time, the hides are very uniformly exposed to the action of the liquor.

While the machine is in use, one dash is continually in operation to force the liquor

downward, while the other at the same time is continually forcing it upwards by a co-operation producing the circulation of the liquor of great advantage in the process
5 of tanning hides.

Now what I claim as my invention is—

The combination of the two dashers and sets of notch bars as applied to the two vertical and movable frames and in the vats

and made to operate essentially in the manner as above set forth. 10

In testimony whereof I have hereunto set my signature this twenty-seventh day of December A. D. 1853.

NATHANIEL DODGE.

Witnesses:

D. EVERETT WILLARD,
STEDMAN WILLARD.