No. 48,578. PATENTED JULY 4, 1865.

S. J. MILLER, A. B. BARNETT & W. H. STUDY.

APPARATUS FOR LIMING HIDES.

Fig. 2.

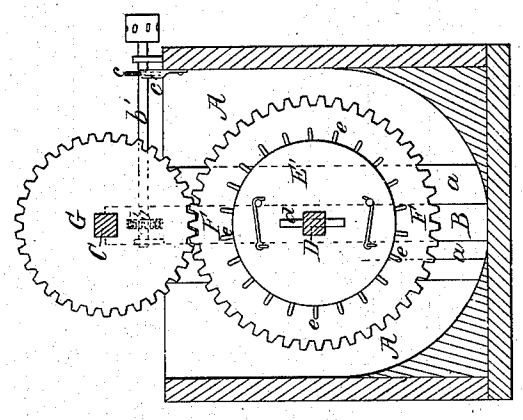


Fig. 4.

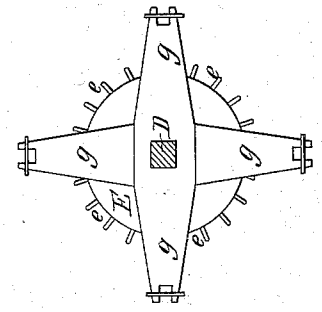


Fig. 1.

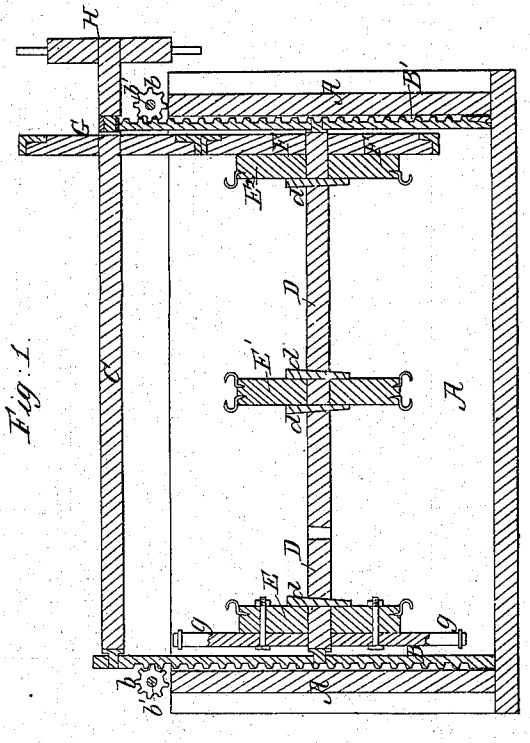
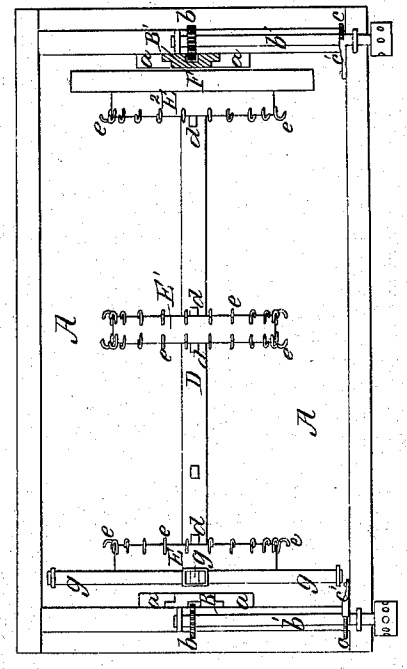


Fig. 3.



Witnesses;
R. Campbell
E. Schafer

Inventors;
Sam'l T. Miller
A. B. Barnett
Wm H. Study
Per Munson Stanwell & Hamilton
Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

The drawing in this patent is not in print.

UNITED STATES PATENT OFFICE.

SAML. J. MILLER, ALBERT B. BARNETT, AND WM. H. STUDY, OF ECONOMY, INDIANA.

IMPROVED APPARATUS FOR LIMING HIDES.

Specification forming part of Letters Patent No. **48,578**, dated July 4, 1865.

To all whom it may concern:

Be it known that we, SAMUEL J. MILLER, ALBERT B. BARNETT, and WM. H. STUDY, all of Economy, Wayne county, State of Indiana, have invented a new Machine for Liming Hides; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a verticle section taken through the machine from end to end. Fig. 2 is a vertical transverse section through the machine. Fig. 3 is a top view with the driving spur-wheel and its shaft removed. Fig. 4 is a view of the circular rack which carries the lever-arms.

Similar letters of reference indicate corresponding parts in the several figures.

In the process of liming hides preparatory to depilating them they are subjected for a number of days to the action of lime-liquor in vats, and require to be handled frequently, for the purpose of thoroughly exposing their hair surfaces to the lime, and preventing them from becoming compacted in the vat. Hitherto the handling of the hides has been chiefly effected with hooked poles, which operation required considerable expenditure of time and labor to perform the work perfectly.

The object of our invention is to contrive a machine for handling hides in the vat, which consists of racks arranged upon a shaft which is susceptible of being rotated within the lime-vat, and which can also be elevated out of and supported above the liquor in the vat at pleasure, as will be hereinafter described; also, to combine a rotating hide-rack with a vat which has a semicircular or concave bottom, for the purpose of keeping the lime about the hides during the liming process, and enabling us to stir and keep the contents of the vat thoroughly mixed by the motion given to the hides, as will be hereinafter described; also, to provide for applying hides of different sizes to the racks at the same or at different times, as circumstances may require.

To enable others skilled in the art to understand our invention, we will describe its construction and operation.

In the accompanying drawings, A represents the vat, which may be constructed in the usual manner, with the exception that our vat has a concave or semicircular bottom. *a a* are guides applied to the vertical ends of the vat A for receiving and guiding the vertical standards B B′, which support the hide-racks, and also a driving-shaft, C. The standards B B′ have rack-teeth applied to them for reeeiving the teeth of pinion-wheels *b b*, that are keyed to horizontal transverse shafts *b′ b′*. These shafts carry ratchet-wheels *c c*, which receive pawls *c′ c′*, and also perforated drums or cranks, by which latter the shafts *b′ b′* can be turned and the standards B B′ elevated. When elevated the palls *c′ c′* hold the standards in position and prevent them from dropping down again.

D is a longitudinal square shaft, which has its bearings in the standards B B′, and which carries three circular wheels, E E′ E², that have a series of hooks, *e*, arranged at suitable distances apart around their peripheries, thus forming circular racks for receiving and holding the hides during the process of liming. The intermediate rack, E′, is made of two parts properly attached together, so that it can be at any time removed from its shaft D without removing the racks E and E², and this rack is also provided with two rows of hooks for receiving the ends of the hides, which are attached to both of the racks E E². The three racks being applied to a square shaft they cannot turn upon this shaft, but they can each be adjusted in a direction with the length of the shaft D by removing the wedge-pins *d d d*, and then secured again at any desired distance apart, according to the size of the hides to be treated.

To the rack E² a spur-wheel or a belt-wheel, F, is applied concentric with the axis of the shaft D. This wheel receives the teeth of a spur-wheel, G, which is on the driving-shaft C. This latter shaft has its bearings upon the upper ends of the standards B B′, and one end of it projects out from standard B′ and receives upon it the radially-spoked wheel H, which is used for turning the shaft C for filling the rack with hides when it is elevated above the vat, and also for rotating the rack, with the hides upon it, in the liquor. A number of radial arms, *g g*, adapted for receiving a long lever in their ends, are also applied to

the rack E for the purpose of assisting in turning the hides or the racks to which they are hung. These arms *g g* may be used instead of the spur-wheels F and G, or they may be used with these wheels to assist in starting the racks in motion when filled with hides.

Before applying the hides to the racks the latter are elevated out of the vat by the contrivances above mentioned, or their equivalents. The hides are then attached to the hooks *e*, so that the flesh side of one hide will be outward and that of the next hide inward. This will prevent the hides from adhering together and allow the lime-liquor to circulate freely between them. When the racks are filled they are allowed to descend into the liquor in the vat A, as shown in Figs. 1 and 2, where they are repeatedly turned.

We do not confine our invention to the use of a vat having a concave bottom as the racks may be used advantageously with the flat-bottomed vats; but we prefer to use a vat having a concave bottom, for the reason that the lime cannot settle in such a form of vat, so as to leave the hides; and when the hides are handled or turned in the liquor they will stir up the lime and mix it thoroughly with the water. When the hides have remained a sufficient length of time in the vat the frame-work, with its racks, is again elevated, so that the hides can be readily removed, and at any time during the process the hides can all be lifted out of the liquor for inspection.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The employment of rotating hide-racks in the process of liming hides, substantially as described.

2. Applying hide-racks to a shaft in such manner that they can be adjusted and set at different distances apart to adapt them to hides of varying sizes, substantially as described.

3. The use of rotating hide-racks in conjunction with a supporting-frame which is susceptible of being elevated or depressed, substantially as described.

4. A liming-vat which is constructed with a concave bottom and provided with hide-racks, substantially as described.

SAMUEL J. MILLER.
ALBERT B. BARNETT.
WM. H. STUDY.

Witnesses:
JOSEPH WILLIAMS,
A. W. CORLEY.