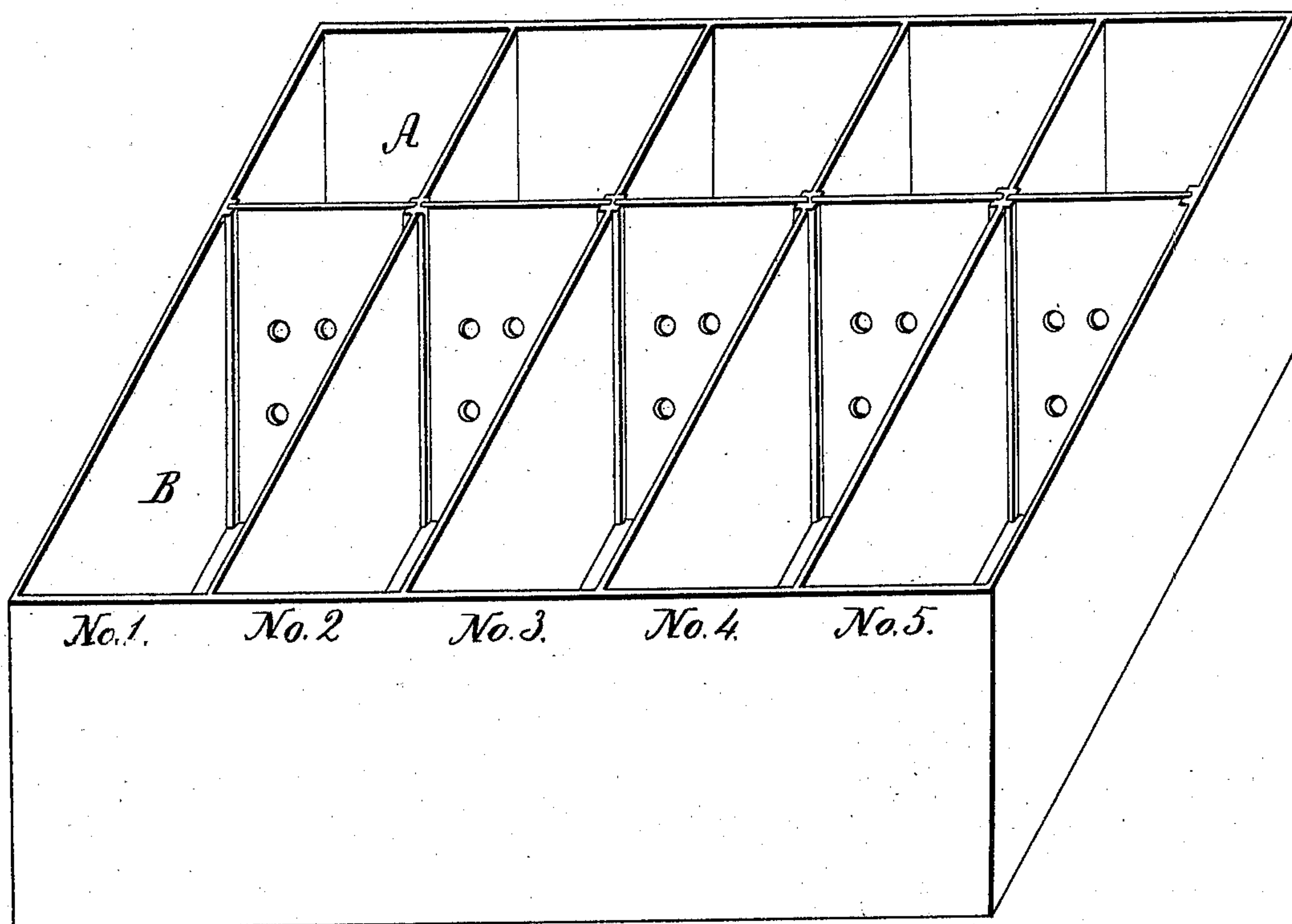


*Kettering & Vogle,*

*Tan Vat.*

*N<sup>o</sup> 3,639.*

*Patented June 24, 1844.*





# UNITED STATES PATENT OFFICE.

ADAM KETTERING AND AUG. VOGLE, OF HEMPFIELD TOWNSHIP, WESTMORELAND COUNTY, PENNSYLVANIA.

## TANNING.

Specification of Letters Patent No. 3,639, dated June 24, 1844.

*To all whom it may concern:*

Be it known that we, ADAM KETTERING and AUGUSTUS VOGLE, of Hempfield township, Westmoreland county, Pennsylvania, have invented a new and useful Improvement in Tanning Hide into Leather; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

The nature of our improvement is to take the extract from the bark in a quicker manner than usual and thereby to tan hide into leather quicker than usual, without the aid of steam or chemical composition.

To enable others skilled in the art to make use of our improvement we will proceed to describe its operation.

Our vats are eight feet long, four wide and five deep; we have a movable division three feet from the end called the reserve box being marked by the letter A and the part to handle the hides in marked by the letter B. The division is perforated with holes to allow the extract to flow from A into B. The reserve box is to be filled with good ground chestnut oak bark. We take pure water and pour it upon the bark in the reserve box A until the other part of the vat B is nearly full. In one hour if the bark is good the extract will gain the strength of eight degrees measured by the hydrometer.

Having five vats of the above description the reserve boxes being all filled with the same kind of bark we pump by means of a hand pump the extract from vat No. 1 onto the bark in the reserve box No. 2. This extract in one day rises to 10 or 12 degrees of strength; water being again poured on the bark in the reserve box No. 1 will attain the strength of 6 degrees in one hour. We fill the extract from vat No. 2 in the reserve box of vat No. 3 and the extract rises to 14 or 15 degrees. The liquor from vat No. 1 is poured into No. 2, and its strength is from 8 to 9 degrees. No. 1 being again filled with pure water the extract rises to 3 and 4 degrees. In two days we pour the extract from vat No. 3 to vat No. four and it will then attain 18 degrees, the water from No. 2 to No. 3 and obtain an extract of 10 degrees. The water from No. 1 is poured to No. 2, and attains 5 degrees. No. 1 being filled with water the fourth time it gains the strength

of 2 degrees. In two days we pour the extract of No. 4 on the reserve box of No. 5, and we gain the strength of 22 to 24 degrees. From No. 3 to No. 4 the liquor is now poured and attains 14 degrees, from No. 2 to No. 3 and attains 10 degrees, from No. 1 to No. 2 and attains 4 and 5 degrees. No. 1 is now filled with water the fifth time; this gains no strength, but its iron and lime properties will settle into the reserve box and may be used to fill the other vats in place of what is lost. We have now liquor of different strength. After the hides are prepared in the usual way they are placed in the extract of No. 2. We handle them there for one day very often, so that they may acquire the proper color. The liquor in No. 2 not being very strong the grain of the hide is not drawn together but is soft and smooth, the grain being perfectly tanned through in one day. The hides are then taken out and shifted to No. 3. In this they are handled 3 or 4 days and then shifted to No. 4. They are handled there six or seven days, and then we may say that one half is perfectly tanned. They are then placed in No. 5 vat and in four or five weeks they are well and perfectly tanned through according to the size of the hides.

*Advantages.*—In the first place the liquor is pure and will enter the pores of the hides quicker than in the old way where the bark is thrown upon the hides and the pores are thereby stopped up. 2. The liquor being pure the hide still draws a stronger extract from the reserve box and is thereby tanned much sooner. In the third place it is tanned in four fifths of the time and makes beautiful elastic and tough leather. In the fourth place it takes one fifth less of bark, for the hides from No. 2 may be shifted to No. 3 and new hides placed in No. 2, from No. 3 to No. 4, and so on. When the extract in No. 5 is no longer strong enough No. 1 may be cleaned and fresh bark be placed in the reserve box and the liquor from No. 5 be poured thereon. And lastly it requires less space, for the vats may be placed in a circular manner or square. We tan calf skins in this manner in from 6 to 10 days, upper leather from 18 to 24, heavy hides in from 8 to 10 weeks, very heavy country sole leather or Spanish hides if not tanned through in 8 or 10 weeks are laid away for any length of time without injury.



What we claim as our invention and desire to secure by Letters Patent is:

The above described process of tanning hide into leather in a quicker manner than usual and without the aid of steam or any chemical composition, and in connection therewith, the peculiar arrangement of the

vats used for said purpose, also as above set forth.

ADAM KETTERING.  
AUGUSTUS VOGLE.

Witnesses:

A. G. MARCHAND,  
GEORGE KETTERING.