

# United States Patent Office.

JAMES KIDDER, OF URBANA, OHIO, ASSIGNOR TO HIMSELF AND JAMES F. SHUMATE.

Letters Patent No. 104,741, dated June 28, 1870.

## IMPROVEMENT IN TANNING.

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

I, JAMES KIDDER, of Urbana, Champaign county, Ohio, have invented a new and useful Tanning Process, of which the following is a specification.

### *The Ingredients.*

- First. Japonica, gambir, cutch, or bark.
- Second. A solution of potash, pearl-ash, or caustic soda.
- Third. Sulphate of zinc.
- Fourth. Sulphur.
- Fifth. Sugar of lead.

### *The Effects of the Different Ingredients on the Hides and the Purpose for which They are Used.*

First. Japonica, gambir, cutch, or bark is the basis of our tanning-composition.

Second. The solution of potash, pearl-ash, or caustic soda, neutralizes the acid in the first-named ingredients, that is destructive to the fiber of the leather. It hastens the tanning, and gives greater strength to the fiber of the leather.

Third. Sulphate of zinc is an astringent. It contracts the fiber of the hide, and thereby gives the leather more body.

Fourth. Sulphur gives the leather softness and pliability.

Fifth. Sugar of lead is a powerful astringent. It assists the third-named ingredient to fill up the leather. It also hastens the process of tanning, and gives the leather a fair color.

### *Operation.*

The aforementioned ingredients are used as follows, viz, (but we do not confine ourselves to the proportions or time specified, but give this as our mode of tanning:)

To tan twelve hides of upper leather, use a sufficient quantity of water to cover the hides; then dissolve twenty-five pounds of japonica or gambir; then add the solution to the water. Then compound three quarts of the solution of potash or pearl-ash, (the solution to equal the strength of strong lye,) and one pound of sulphate of zinc. Dissolve the zinc first in hot water; then add the compound to the tanning-liquor; then the liquor is ready for the hides. Place

the hides into the tanning-liquor; handle them up occasionally for two days; then take them out, and renew the liquor by adding thirty-five pounds of japonica or gambir, dissolved as before, and poured into the liquor. Then compound three quarts of the solution of potash or pearl-ash, two pounds of the sulphate of zinc, two pounds of sulphur. Dissolve the sulphate of zinc and sulphur in boiling water before compounding with the alkaline. When compounded, add to the tanning-liquor; then place the hides in the liquor; handle them up for four days; then take them out, and renew the liquor by adding forty pounds of japonica or gambir, dissolved as before, two quarts of the solution of pearl-ash or potash, two pounds of the sulphate of zinc, three pounds of sulphur, one and one-half pound of sugar of lead, to be dissolved and compounded as before, then added to the tanning-liquor; then place the hides into the liquor thus compounded, and handle them up occasionally for five days; which completes the tanning operation of the twelve hides.

Calf-skins, harness, and all other kinds of leather, will be treated in quantities of ingredients and time proportionally.

To tan with bark, to each cord of bark use two gallons of the solutions of potash or pearl-ash, five pounds of sulphate of zinc, five pounds of sulphur, and one and one-half pound of sugar of lead.

Before adding the above-named ingredients to the bark-liquor, dissolve them in boiling water, then compound them, and add them to the bark-liquor.

For white-oak bark, double the quantities.

### *Claim.*

I claim as new and of my invention—

The process for tanning leather, substantially as herein described.

In testimony of which invention, I hereunto set my hand.

JAMES KIDDER.

Witnesses:

GEO. H. KNIGHT,  
WM. M. RHODES.