

# UNITED STATES PATENT OFFICE.

SANFORD A. HICKEL, OF ROANE COUNTY, ASSIGNOR TO HIMSELF AND  
C. & J. & B. F. ARMSTRONG, OF JACKSON COUNTY, WEST VIRGINIA.

## IMPROVEMENT IN TANNING.

Specification forming part of Letters Patent No. 50,872, dated November 7, 1865.

*To all whom it may concern:*

Be it known that I, SANFORD A. HICKEL, of the county of Roane and State of West Virginia, and a citizen of the United States, have invented a new and Improved Mode of Tanning Hides into Leather; and I do hereby declare that the following is a full and exact description of the materials and process of tanning therein, viz:

The materials consist of ground bark and manure taken from a horse-stable, mixed in different proportions, according to the size and thickness of the hides to be tanned and the kind of leather to be made of them.

All hides, and for all kinds of leather, should be prepared precisely as similar hides and for similar leather are usually prepared, and they are placed in ooze prepared in the usual manner, and the strength of such ooze must always be kept up by the removal of old bark and supply of fresh. Then, for tanning heavy hides into sole-leather, mix five bushels of ground bark with one of manure, or mix in that proportion. Thus, to tan forty heavy sides mix ten bushels of bark with two bushels of manure. At the end of three days remove the old bark and add ten bushels of fresh, and at the end of five or six days thereafter again remove the old bark and add fresh, and continue and preserve the strength of the ooze, as before directed. At the end of twenty or twenty-five days after placed in ooze add a bushel and a half of manure, and the hides will be tanned within sixty or ninety days after put into ooze.

To tan heavy hides into upper-leather mix in the proportion of eight bushels of bark to a bushel and a half of manure. Thus, to tan forty heavy sides into upper-leather, mix eight bushels of bark with a bushel and a half of

manure. At the end of three days remove the old bark and add nine bushels of fresh. Within ten or twelve days after placed in ooze shave the hides and again remove old bark and add fresh. At the end of fifteen days after placed in ooze add two bushels of manure, and within forty or fifty days after placed in ooze the hides will be completely tanned.

To tan kip-skins mix in the proportion of seven bushels of bark with a bushel and a half of manure. Thus, to tan fifty or sixty kip-skins, mix seven bushels of bark with a bushel and a half of manure. At the end of three or four days after placed in ooze shave the hides and remove the old bark and add fresh. At the end of ten days after placed in the ooze add a bushel and a half of manure, and the hides will be completely tanned within thirty or thirty-five days after put into ooze.

To tan calf-skins mix in the proportion of six bushels of bark with a bushel and a half of manure. Thus, to tan sixty or sixty-five calf-skins, mix six bushels of bark with a bushel and a half of manure. At the end of three days remove the old bark and add eight bushels of fresh. At the end of eight days after placed in the ooze shave the hides. At the end of two days thereafter add a bushel and a half of manure. Within twenty or twenty-five days after placed in ooze the hides will be sufficiently tanned.

What I claim for my invention, and desire to secure by Letters Patent, is—

The employment or use of manure in combination with bark or other tanning material, substantially as and for the purposes set forth.

SANFORD A. HICKEL.

Witnesses:

J. L. ARMSTRONG,  
G. W. ARMSTRONG.