

UNITED STATES PATENT OFFICE.

FRED E. BURLINGAME, OF CENTRAL FALLS, RHODE ISLAND, ASSIGNOR OF
ONE-HALF TO FREDERICK E. SHAW, OF PROVIDENCE, RHODE ISLAND.

LEATHER.

SPECIFICATION forming part of Letters Patent No. 563,561, dated July 7, 1896.

Application filed April 20, 1896. Serial No. 588,374. (No specimens.)

To all whom it may concern:

Be it known that I, FRED ELISHA BURLINGAME, of Central Falls, in the county of Providence and State of Rhode Island, have
5 invented a new and useful Improvement in Leather, and I hereby declare that the following is a full, clear, and exact description of the same.

This invention has reference to an improvement in the class of leather heretofore produced in which tanning or tannic acid is used to combine with the skins or hides; and it consists in combining with the skins or hides the product of the destructive distillate of
15 wood, preferably the crude pyroligneous acid, as will be more fully set forth hereinafter.

One object of the invention is to produce a leather that, while it withstands the ordinary exposure to water better, will remain more
20 pliable after it has been wet and dried than tan-leather.

Another object of this invention is to produce a denser, stronger, and more durable leather.

25 The crude product of destructive distillation of wood as it flows from the condenser contains, besides pyroligneous acid, creosote, tarry matter, resinous matter, and oily products. The crude pyroligneous acid itself contains nearly all, if not all, these products. These products, in connection with the pyroligneous acid, act on the tissues of skins and hides and convert them into insoluble matter, and, if the action is not arrested, produce a
35 hard substance. If, however, the process is arrested at the proper time, the products of the destructive distillation of wood combine with the skins or hides and form a superior quality of leather, less affected by water than tan-leather, denser, stronger, and more durable
40 than leather produced by any of the processes heretofore used.

In producing this leather I submerge the previously-prepared skin or hide in a bath

consisting of water, the condensed product of
45 destructive distillation of wood or woody fiber and chlorid of sodium, (common salt,) an alkali, alkaline earth, or the salt of an alkaline earth.

For convenience and economical reasons, 50 in the preferred form I compose the bath of the crude pyroligneous acid of commerce and water of about equal parts, and common salt. In this liquor the skins or hides are soaked a sufficient length of time to penetrate the skin
55 or hide to the desired extent. The hide or skin is now hung up to dry. When partly or nearly dry, the skin or hide is placed in a bath of water saturated or nearly saturated with common salt. It is then washed, preferably in
60 running water, and dried.

The leather is readily distinguished from other leather by its odor, and can be distinguished by the usual chemical tests for creosote, resinous matter, and tarry products. 65

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. As a new article of manufacture, leather, the tissues and gelatinous matter of which
70 have combined with them the products of the destructive distillation of wood and chlorid of sodium, as described.

2. The new article of manufacture and commerce, consisting of leather containing tissues
75 and gelatinous matter combined with pyroligneous acid and chlorid of sodium, as described.

3. Leather, the gelatinous matter of which has combined with pyroligneous acid and
80 chlorid of sodium in the conversion of the skin or hide into leather, as described.

In witness whereof I have hereunto set my hand.

FRED E. BURLINGAME.

Witnesses:

JOSEPH A. MILLER,

JOSEPH A. MILLER, Jr.