

UNITED STATES PATENT OFFICE.

MAGNUS BENAS, OF NEW YORK, N. Y.

IMPROVED TANNING COMPOSITION.

Specification forming part of Letters Patent No. 34,192, dated January 21, 1862.

To all whom it may concern:

Be it known that I, MAGNUS BENAS, of the city, county, and State of New York, have invented a new and useful Improvement in Tanning; and I do hereby declare that the following is a full, clear, and exact description of the material used and the method of forming the tanning-liquor, together with the time required to manipulate and steep or immerse the hides or skins therein.

The object of this invention is to expedite the process of tanning, reduce the expense, and obtain a superior quality of leather, and have the invention applicable for the tanning of calf, sheep, and other light skins, as well as applicable for tanning heavy skins for the production of kip and harness leather and also sole-leather. The skins are, in the first place, prepared by rinsing, liming, unhairing, fleshing, &c. This preliminary work, being performed in the ordinary way, does not require to be described, as it is well known, and is practiced by all tanners.

I prepare a tanning-liquor as follows: first, ratanhy-root, one ounce; second, tormentilla-root, one ounce; third, granadilla-root, one ounce; fourth, cinchona-bark, one ounce; fifth, cascarilla-bark, one ounce.

The above-named roots and barks are most suitable for the purpose in a coarsely-ground or rasped state, and from all of the above ingredients a decoction is made with one gallon of soft water, the whole comprising or being considered as one gallon of tanning liquor. This liquor is boiled at a temperature of 220° Fahrenheit for about five minutes. The boiling is then stopped, the liquor strained, and the following substances added: best Bombay catechu, one-half pound; alum, one ounce; common salt, two ounces. The liquor is then again boiled at the same temperature as aforesaid until the catechu is entirely dissolved. The liquor is then again strained to separate all the impurities the catechu contained—such as sand, leaves, &c.—and the liquor, when cooled down to 75° Fahrenheit, is ready for use.

Process of tanning calf and light skins.—The skins, after being sufficiently bathed, as usual in the “chicken-bath,” to remove, by working off on the “beam,” all the lime which may be in them, are rinsed in soft water containing two ounces of common salt to every gallon. The skins are then ready for immer-

sion in the tanning-liquor. The quantity of liquor for a skin averages four (4) gallons, provided the skins average eight (8) pounds in weight in the green and salted state. The skins are first immersed in a liquor containing one (1) gallon of the tanning liquor above described for each skin, with as much soft water as is necessary to cover fully the skins. The skins are kept in this liquor one day, (twenty-four hours,) and are moved around as much as possible by any convenient device. A rotary stirrer similar to a paddle-wheel would answer a good purpose. The skins, after having remained for one day in this liquor, are immersed in a liquor formed of two gallons of the tanning-liquor to each skin, with a requisite quantity of soft water to fully cover them. In this liquor the skins also remain for one day, (twenty-four hours,) and moved around in the liquor, as before, as much as possible. From this second liquor the skins are removed to the scouring-table and scoured, but not thoroughly. They are then partially dried—not so much that they will be hard—and are then taken to the “skiving” or “patent beam” and skived, and are then immersed for the third time in a liquor precisely like the second, just described, and are kept in it for one day, (twenty-four hours,) being moved as much as possible, and they are then taken to the scouring-table and carefully and thoroughly scoured, greased, and dried, and will then have the appearance and all the qualities of French calf-skins.

I would remark that in tanning during the winter season the temperature of the liquor should be 75° Fahrenheit, and the mean temperature of the workshop should be about the same. The whole time required by this process, it will be seen, is three days.

Process of tanning kip and harness leather.—The skins are prepared in the same way as before; but the quantity of tanning-liquor for the three different immersions is to be doubled, just twice as much being used for each immersion in the latter case. The skins remain in each immersion three days, (seventy-two hours,) and must be “handled” in each liquor every four hours, or four times a day. After having remained in the second liquor for three (3) days the skins are scoured, but not thoroughly, partially dried, and then skived, just as prescribed for the calf-skins, and are then im-

mersed in the third liquor, wherein the skins remain for three (3) more days, being handled at least four times a day, the time in all being nine (9) days. The skins are then skived and greased in the usual manner, and are ready for use.

Process of tanning sole-leather.—The liquor for tanning sole-leather is composed of three times the quantity of ingredients used in the first and second processes, with the exception of the alum and salt, which are dispensed with. The skins, after being prepared as is usual for tanning sole-leather and rinsed in salt-water, are immersed in a liquor composed of four (4) gallons of the tanning-liquor to every skin, with as much soft water added as will cover them. The skins remain in this liquor nine (9) days, and are handled every alternate day, and are then removed to a second liquor made of twelve (12) gallons of tanning-liquor for each skin, with a sufficient quantity of soft water to cover the skins. The skins remain in this liquor for nine (9) days, and are handled every alternate day, as before. They are then placed in a third liquor, composed of sixteen (16) gallons of tanning-liquor for each skin, with a sufficient quantity of water to cover them. The skins also remain in this liquor nine for (9) days,

and handled as before, the whole time being twenty-seven days. The skins are then taken to the scouring-table, scoured, rolled, and dried, and are then ready for use.

The advantages obtained by this improvement in tanning are, first, the liquor required for tanning a given quantity of skins is much less in bulk than that required in tanning by the old oak and hemlock bark process, while the cost is not any greater, and the time is very much reduced and leather of a superior quality obtained, as no mineral acids are employed.

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

The employment or use for tanning purposes of a decoction of ratanhy, tormentilla, and granadilla roots, in connection with cinchona and cascarilla barks, substantially in the proportions specified, and using said solution with Bombay catechu, alum, and common salt, in the proportions about as specified, and substantially as herein described.

MAGNUS BENAS.

Witnesses:

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