G. BENZ.

Manufacture of Belting and Lace Leather.

No. 214,873. Patented April 29, 1879.

Fig. 1.

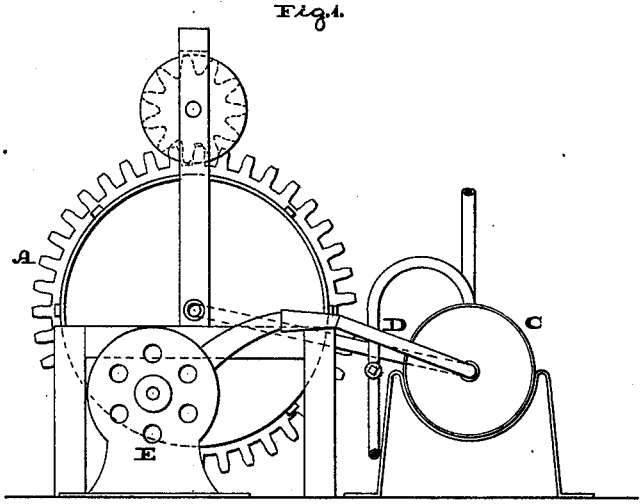


Fig. 2.

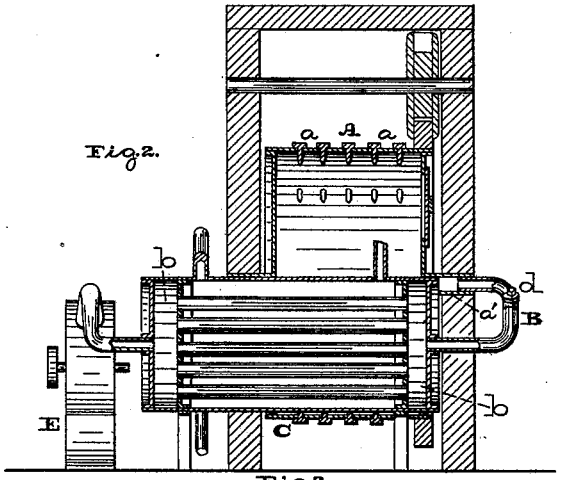
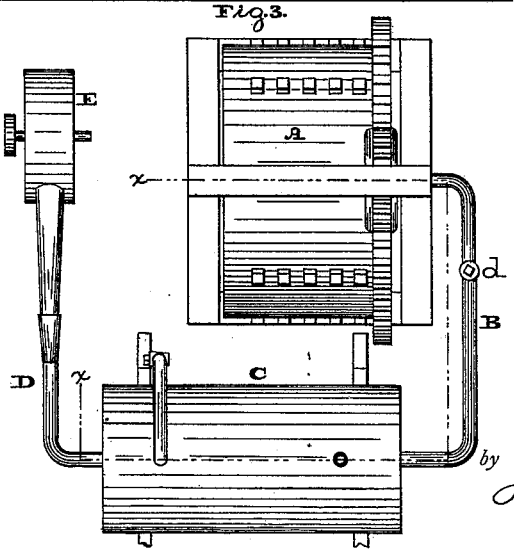


Fig. 3.



Witnesses:

A. P. Grant,

W. F. Fischer

Inventor:

Gottlieb Benz,

by John A. Wiedersheim

ATTORNEY.

UNITED STATES PATENT OFFICE.

GOTTLIEB BENZ, OF LANCASTER, ASSIGNOR TO ALBERT WETTER AND CHARLES A. LOCHER, OF SAME PLACE; SAID WETTER AND LOCHER ASSIGNORS OF ONE-THIRD THEIR RIGHT TO J. LEWIS POTTS, OF COATESVILLE, PENNSYLVANIA.

IMPROVEMENT IN MANUFACTURE OF BELTING AND LACE LEATHER.

Specification forming part of Letters Patent No. **214,873**, dated April 29, 1879; application filed March 28, 1879.

To all whom it may concern:

Be it known that I, GOTTLIEB BENZ, of the city and county of Lancaster, and State of Pennsylvania, have invented a new and useful Improvement in Manufacture of Belting, Lace, and other Leather, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the apparatus employed by me. Fig. 2 is a vertical section thereof in line *x x*, Fig. 3. Fig. 3 is a top or plan view thereof.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a method of curing skins without drugs, tan, alum, hemlock, or other materials generally used.

It also consists of apparatus for effecting the above method.

Referring to the drawings, A represents a stuffing-wheel, consisting of a revolving cask furnished on its interior with spikes or studs *a a*, and provided with a hollow trunnion, *a'*, with which communicates, or through which passes, a hot-air pipe, B, leading into the wheel from a steam-heater, C, consisting of a receiver for exhaust-steam and air-flues, which communicate with air-chambers *b* at opposite ends of the receiver, the steam circulating between the several flues, but not entering said air-chambers. With one air-chamber communicates the pipe B of the stuffing-wheel, and with the other air-chamber communicates a pipe, D, of a fan-blower, E, the several parts thus enumerated being properly supported or mounted.

The operation is as follows: The skins are steamed or soaked in tightly-closed vats until the hair is loosened, and then removed, scraped, and cleansed, and afterward soaked and washed in cold water until they become perfectly soft and clean, and then partly dried. The skins are now placed in the stuffing-wheel A, and rotary power imparted to said wheel, the skins being worked therein without admission of heat from the heater C a certain length of time, according to their thickness. The skins are then removed and placed flat on a table and greased with a fermented paste composed of flour, horse-grease, tallow, salt, and water, and again returned to the stuffing-wheel. The fan-blower E is set in motion, steam is admitted to the receiver of the heater C, and the stop-cock or valve *d* of the pipe B is turned, whereby the air driven by the blower is forced through the flues of the heater and highly heated, and then forcibly directed into the stuffing-wheel, thus working the skins, which are carried around the wheel by the studs *a*.

These processes of greasing and working, milling, or stuffing are repeated, say, two or three times, according to the thickness of the skins, when they will be found to be cured.

The temperature of the stuffing-wheel is regulated by the stop-cock or valve *d* of the pipe B, or other suitable means.

The waste or condensed steam of the heater C is conducted to the vats in which the skins are soaked, in order to heat or steam the water thereof.

The leather produced by the above method will be found to be of a superior nature, and admirably adapted for belting. By soaking the leather in water, greasing it with horse-grease, placing it in the stuffing-wheel, and working it under a certain temperature of heat the product will be a soft lacing-leather of fine quality.

The coloring of the leather may be accomplished in any well-known manner.

Skins treated with the above-named paste and proper degree of heat are cured without the employment of drugs, tan, alum, hemlock, and similar materials. The aluminous and glutinous substances of the skins, which make leather sensitive to changes of atmosphere and temperature, are removed without, however, decreasing the strength of the leather, or disturbing the texture of the skins, which thereby retain their full strength, become thinner, more pliable, elastic, and softer, and are less liable to snap, break, stretch, or change under climatic influences than usual.

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

1. The method of curing skins for belting, lace, and like leather, consisting in first cleaning the skins in any ordinary manner, next working the skins in a rotary wheel, then removing and pasting them, and then subjecting such pasted skins to a forced current of hot dry air in a rotary wheel, substantially as described.

2. The combination, with a stuffing-wheel and a fan-blower, of an intermediate air-heater having communicating air-chambers and an intervening steam-chamber, substantially as and for the purpose described.

3. The combination, with a stuffing-wheel and a fan-blower, of an intermediate air-heater and a valvular pipe connecting such heater and stuffing-wheel, substantially as and for the purpose described.

GOTTLIEB BENZ.

Witnesses:
H. R. McCONOMY,
MARTIN RUDY.