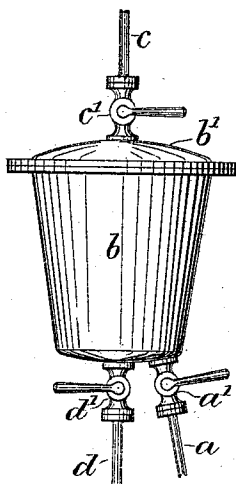


(No Model.)

A. GEORGE.
CLEANSING WOOL.

No. 493,158.

Patented Mar. 7, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

AIMÉ GEORGE, OF PUTEAUX, FRANCE.

CLEANSING WOOL.

SPECIFICATION forming part of Letters Patent No. 493,158, dated March 7, 1893.

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To all whom it may concern:

Be it known that I, AIMÉ GEORGE, a citizen of the Republic of France, residing at Puteaux, in the Department of the Seine, France, have
5 invented certain new and useful Improvements in Cleansing Wool and Similar Materials, (in respect whereof I have applied for Letters Patent in France October 31, 1890, No. 209,236; in Germany November 11, 1890, No.
10 58,232; in Austria-Hungary September 26, 1891; in Belgium April 2, 1891, No. 94,382, and in Great Britain April 17, 1891, No. 6,663;) and I do hereby declare that the following is a full, clear, and exact description
15 of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in cleansing raw or prepared wool, and similar
20 materials.

The accompanying drawing represents, in side elevation, by way of example and for one of the simplest cases that can arise in practice, an apparatus suitable for use in carry-
25 ing out my improved method.

All the processes previously employed for scouring and washing raw or prepared wool, and similar materials, by the use of solvents having an affinity for fat and wax-like substances, and by the employment of water, have
30 given unsatisfactory results.

Wool taken indiscriminately without distinction as to its origin, condition or age, cannot be practically or effectively cleaned by
35 solvents, of which the following may be named as examples:—Carbon disulphide, ether, chloroform, alcohol, and liquid hydrocarbons, such as benzol, rock-oil, &c.

The impurities in wool consist of, first, various fatty or waxy matters soluble in the solvents above referred to; secondly, of a pitchy and glutinous matter insoluble in the said solvents or in water, even if the latter be rendered slightly alkaline; thirdly, matters soluble in water (such as salts of potash, &c.); and, fourthly, sandy and earthy matters. To one
45 only of these various substances—the pitchy and glutinous matter—must be attributed the unsatisfactory results of the processes previously employed. This pitchy and glutinous
50 substance, not being dissolved either by the

above-mentioned solvents or by water, adheres to and agglutinates the wool to a considerable extent. Even by the use of soap and hot water, a small quantity only can be removed, so
55 that the wool, before being carded and combed, would still contain the larger part of this deleterious matter. I have found that the said pitchy and glutinous substance is partially soluble in solvents previously charged
60 to a certain degree with fatty or waxy matter, and, further, that it is easily decomposable in various salts and fatty or waxy matters by acids; carbonic acid gas being the most suitable for employment, as this gas does not in-
65 jure either the wool or the fatty substances.

Treatment by solvents partially charged with fatty or waxy matter may suffice for certain kinds of wool, but for many other kinds it is insufficient. Treatment by carbonic acid
70 gas and pure solvents (that is, solvents which do not contain any fatty or waxy matter in solution) invariably gives excellent results. But to avoid redistilling the solvents too often, there may be used, in conjunction with the
75 carbonic acid gas, impure solvents (that is, solvents which, though having been previously employed, do contain a certain quantity of fatty or waxy matter in solution).

The carbonic acid gas may be admitted to
80 the wool through a pipe *a*, provided with a stop-cock *a'*, at the bottom of a vessel of any form whatever (and such, for example, as *b*) in which the wool is being treated; the vessel being left open so that the gas may freely
85 escape after passing through the wool and solvents, or through the wool alone before the solvents are added. If preferred, however, the vessel may be provided with a cover *b'*; the carbonic acid gas being forced in and al-
90 lowed to act, under pressure, on the wool either before or at the same time as the solvents. The pressure may be regulated by permitting, if necessary, a portion of the carbonic acid gas to escape through a pipe *c* se-
95 cured to the cover *b'* and furnished with a stop-cock *c'*. This pipe may be utilized for admitting the solvents; the latter, after having acted on the wool, flowing out through another pipe *d* leading from the bottom of the
100 vessel and having a stop-cock *d'*.

The improved process is best carried out at

a temperature of about 100° Fahrenheit. The pitchy and glutinous matter, owing to the combined action of the solvents and of the carbonic acid gas, is decomposed into various fatty or waxy substances and salts; the fatty or waxy substances being thereupon completely taken up by the solvents. The salts of potash, &c., are subsequently removed by washing with water; the fatty or waxy matters and the said salts being in this way separated without any alteration. The sandy and earthy matters are subsequently gotten rid of in the ordinary manner by using a large quantity of water without soap; but, however, if the wool requires reviving after being subjected to the treatment described above, it is washed with soap and water, instead of with water only.

Wool treated in the above manner is perfectly scoured without undergoing any injurious wear and tear or alteration in its nature, and less waste occurs than in any other known system. It is more open, softer to the touch, can be more readily carded, and yields a better result after combing than if prepared by any other process, so that finer and better

threads can be produced than hitherto possible from raw material of equal quality.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I claim—

1. The process of cleansing raw or prepared wool which consists in exposing the same to the action of carbonic acid gas (under atmospheric or other pressure) in the presence of a suitable solvent of the fatty impurities of the wool, and finally in washing the wool with water.

2. The process of cleansing raw or prepared wool which consists in exposing the same to the action of carbonic acid gas (under atmospheric or other pressure), and afterward in subjecting it to the action of a suitable solvent of the fatty impurities of the wool, and finally in washing the wool with water.

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