

## **Specification of William Edward Newton : preserving skins.**

### **Contributors**

Newton, William Edward.

### **Publication/Creation**

London : Great Seal Patent Office, 1864 (London : George E. Eyre and William Spottiswoode)

### **Persistent URL**

<https://wellcomecollection.org/works/nqevufk8>

### **License and attribution**

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection  
183 Euston Road  
London NW1 2BE UK  
T +44 (0)20 7611 8722  
E [library@wellcomecollection.org](mailto:library@wellcomecollection.org)  
<https://wellcomecollection.org>



A.D. 1863, *3rd JULY.* N° 1654.

S P E C I F I C A T I O N

OF

WILLIAM EDWARD NEWTON.

—  
PRESERVING SKINS.  
—

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:

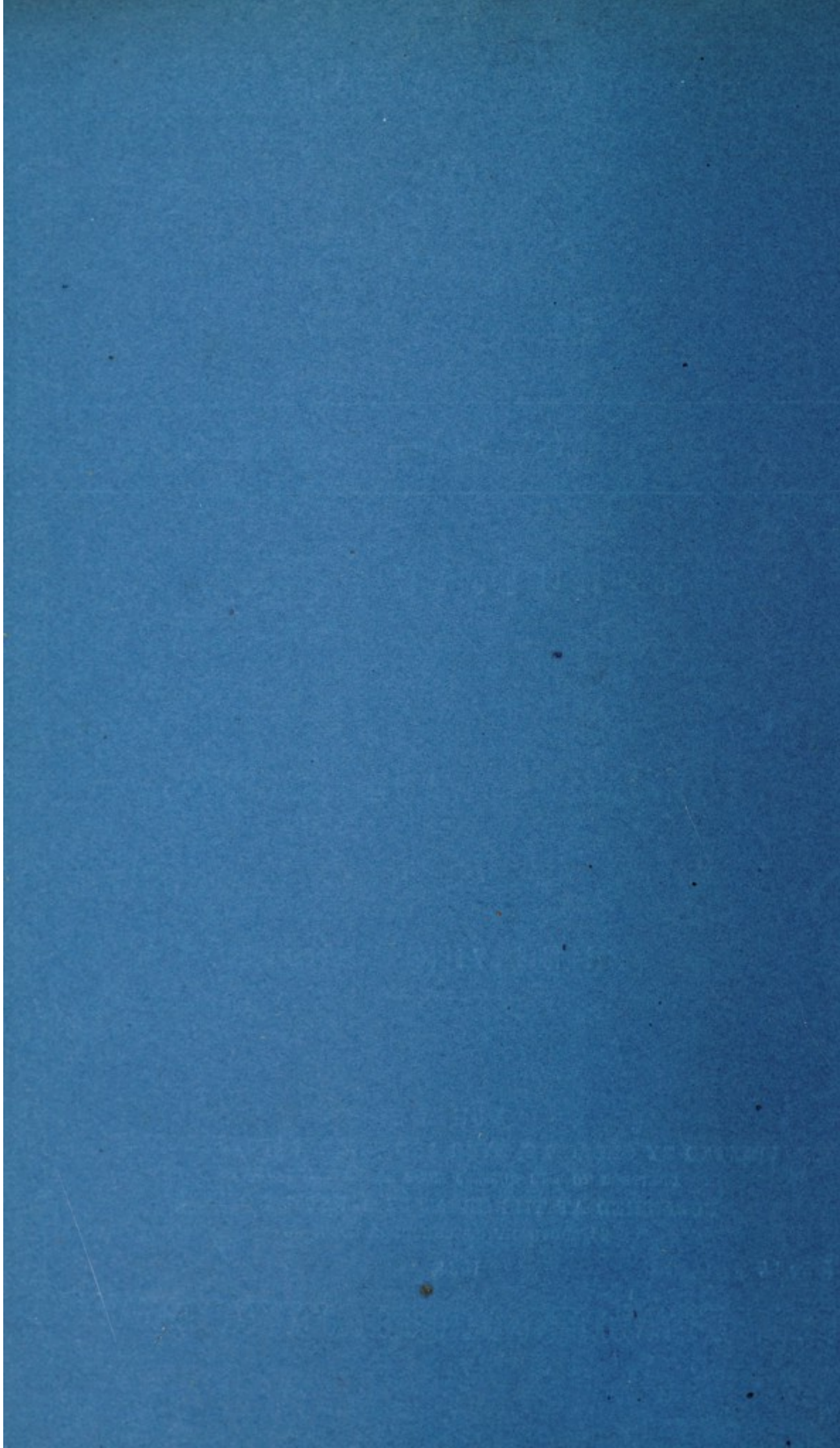
PUBLISHED AT THE GREAT SEAL PATENT OFFICE,

25, SOUTHAMPTON BUILDINGS, HOLBORN.

*Price 4d.*

1864.









---

A.D. 1863, 3rd JULY. N° 1654.

---

### Preserving Skins.

---

**LETTERS PATENT** to William Edward Newton, of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Civil Engineer, for the Invention of "**IMPROVEMENTS IN THE TREATMENT AND PRESERVATION OF SKINS OF ALL KINDS.**"—A communication from abroad by Leonard Laureau, of Rue St. Sebastien, Paris, in the Empire of France.

Sealed the 17th December 1863, and dated the 3rd July 1863.

---

**PROVISIONAL SPECIFICATION** left by the said William Edward Newton at the Office of the Commissioners of Patents, with his Petition, on the 3rd July 1863.

I, WILLIAM EDWARD NEWTON, of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Civil Engineer, do hereby declare the nature of the said Invention for "**IMPROVEMENTS IN THE TREATMENT AND PRESERVATION OF SKINS OF ALL KINDS,**" to be as follows:—

This Invention consists in submitting skins to the action of liquid hydrocarbons previous to their undergoing the ordinary operation of tanning or dressing. It has been found that if the skins be steeped in liquid hydrocarbons previous to being submitted to the action of the chemical ingredients used in the operations of tanning or dressing, the action of the chemical agent on the skin is much facilitated, and the operations consequently considerably shortened. In carrying out the Invention, heavy skins with the hair on are first to be steeped for about 12 hours in the heavy oil, and then for about 24 hours in the light oil; smaller skins may be steeped for about



*Newton's Improvements in the Treatment and Preservation of Skins.*

half the time. When the hair has been removed the skins may be immersed a second time in the hydrocarbon; after this they may be rinsed in water, and then submitted to the ordinary processes of tanning or dressing.

**SPECIFICATION** in pursuance of the conditions of the Letters Patent, filed by the said William Edward Newton, in the Great Seal Patent Office 5 on the 2nd January 1864.

**TO ALL TO WHOM THESE PRESENTS SHALL COME, I, WILLIAM EDWARD NEWTON,** of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Civil Engineer, send greeting.

**WHEREAS** Her most Excellent Majesty Queen Victoria, by Her Letters 10 Patent, bearing date the Second day of July, in the year of our Lord One thousand eight hundred and sixty-three, in the twenty-seventh year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said William Edward Newton, Her special license that I, the said William Edward Newton, my executors, administrators, and assigns 15 or such others as I, the said William Edward Newton, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, 20 and Isle of Man, an Invention for "**IMPROVEMENTS IN THE TREATMENT AND PRESERVATION OF SKINS OF ALL KINDS,**" being a communication from Leonard Laureau, of Rue Saint Sebastien, Paris, in the Empire of France, upon the condition (amongst others) that I, the said William Edward Newton, by an instrument in writing under my hand and seal, should particularly 25 describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

**NOW KNOW YE,** that I, the said William Edward Newton, do hereby 30 declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement (that is to say):—

This Invention consists in submitting skins to the action of liquid hydrocarbons (obtained by distillation from mineral or vegetable tar) for the purpose 35 of tanning or dressing them, or converting them into leather. It has been



*Newton's Improvements in the Treatment and Preservation of Skins.*

found that if skins be steeped in liquid hydrocarbons previously to being submitted to the action of the chemical ingredients used in the ordinary operations of tanning or dressing, the action of the chemical agents on the skins has been much facilitated, and the tanning or dressing operations consequently considerably shortened; the quality of the product is also much improved. This result having been obtained, proved the powerful tanning action of this preserving process, and the advantage attending its employment for the purpose of tanning and dressing skins; this result therefore led to experiments as to whether the various hydrocarbons which are distilled under one hundred and eighty-five degrees centigrade, known in commerce under the name of light oils, and also tar itself, either raw or rectified, might act in the manner of heavy oils in the above-mentioned processes. The results of the experiments fully confirmed what had been supposed; it was observed, that in whatever manner the hydrocarbons were employed, whether heavy oils, light oils, raw or rectified tar, and whether put into the vats together with the tanning liquor, or whether the skins be steeped therein before the unhairing process, or after being scraped and washed, and before being put into the tubs or vats, the action of the hydrocarbon always produced considerable advantages other processes hitherto known, and in which no hydrocarbon was employed. An explanation of the various reactions produced by these hydrocarbons upon the skin itself, and during the process to which it is submitted, will shew that the result with them all must be the same. These hydrocarbons coagulate the albumen (that is to say) curdle the blood, and consequently retain in the pores of the skin a reddish viscous liquid, which is a deperdition of gelatine, of which leather is usually deprived. As the blood which has been retained in the skin is only partially decomposed under the action of the lime in the depilatory operation, the fibrin remains, which during the process becomes tanned like the fibre of the skin, and thus produces an additional yield by increasing the weight, as, in fact, practice has always proved. The hydrocarbons have also the property of combining with the lime and forming an insoluble compound; if, therefore, a skin with the hair on be impregnated therewith when put into the unhairing or depilatory vessel, the lime will only act upon the roots of the hair and not upon the tissue of the skin, which it has the disadvantage of corroding; it follows that the skin will be supple, and as it will when washed contain no more lime, it will when put into the tan pit be tanned more quickly than if it had not been submitted to the action of the hydrocarbons. These matters have also the important property of precipitating the tannin from its solutions, and of combining with it, therefore if a skin be impregnated with the hydrocarbon and immersed in tan liquor, the tanning operation will



*Newton's Improvements in the Treatment and Preservation of Skins.*

be accelerated, and will be perfect, for on the liquor coming in contact with the fibre impregnated with the hydrocarbons, the tannin will be extracted therefrom, and will become immediately deposited around the fibres until the pores are stopped up.

The following is the best manner of employing these hydrocarbons in 5 relation to the operation of tanning, properly so called, for the preparation of strong leather, calf skin, sheep skin, and other skins:—It consists, firstly, in steeping the skin with the hair on in the hydrocarbons for twelve hours in heavy oil, and for twenty-four hours in light oil or tar oil for large skins, and half that time for small ones. After having been un- 10 haired and cleansed, the skins are to undergo a second immersion for the same space of time, as before. They are then well drained and rinsed in water, after which the operation is continued in the ordinary manner. As regards skins which are to be unhaired by spontaneous action, they are not to be submitted to the first treatment, which is very requisite for skins in the 15 hair, which are to be submitted to the action of lime, as fermentation will not take place, or at any rate with great difficulty, in skins impregnated with hydrocarbons. If it be required to preserve, by means of these substances, skins intended to be unhaired by spontaneous action, they should only be coated or brushed over therewith on the fleshy side, and after fleshing or 20 scraping, the operation of unhairing may be readily performed.

By the above-mentioned process the tanning operation may be performed in half the ordinary time, and a better result will be produced, and a superior product and greater weight of leather than that obtained by the ordinary 25 process will be the result. It only requires the bark to be renewed every three months at the most, instead of three times in nine months as is ordinarily practised. Strong hides are thus tanned in six months, and calf and sheeps' skins in less than three months. As regards dressing skins with the fur on, it is only necessary to immerse them with the hair on in the hydrocarbons in the manner indicated for skins intended to be 30 tanned with tan; by this means excellent results are obtained, amongst others those of giving suppleness and consequently great strength to the leather produced.

For tawing or dressing small skins, such as those of goats, kids, and lambs, the application of the hydrocarbons is effected either by immersing the 35 skins entirely therein, or by coating or brushing them over on both sides, hair and flesh, with the liquid hydrocarbon. For dry skins this must be done until they again become as soft and supple as fresh skins. They must then be left piled up one upon the other for at least twelve hours before submitting



---

*Newton's Improvements in the Treatment and Preservation of Skins.*

---

them to the depilatory or unhairing process. After being unhaird they must be submitted to complete immersion in the hydrocarbons for at least four hours for the heavy oils, and eight for the light oils and tar oil; they are afterwards well rinsed and finished or dressed in the usual manner. The skins by  
5 this process acquire such a degree of suppleness that it will be found practicable to use for manufacturing gloves skins which prepared by any of the ordinary processes could only be used for making boots and shoes, and consequently their value will be more than quadruple that which it would be if the skins were prepared in the usual manner. As the heavy oils are at the  
10 present time much cheaper in the market than the lighter oils, or even than tar oil, the heavy oils are those which should be employed, as far as practicable, in preference to the others, inasmuch as their action is more certain, decided, and energetic in the different processes above mentioned.

In witness whereof, I, the said William Edward Newton, have hereunto  
15 set my hand and seal, the Thirty-first day of December, in the year of our Lord One thousand eight hundred and sixty-three.

W. E. NEWTON. (L.S.)

Witness,

J. W. MOFFATT,  
20 66, Chancery Lane.

---

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,  
Printers to the Queen's most Excellent Majesty. 1864.



Victor's experiments in the treatment and preservation of skins  
 to the preparatory or finishing process. After being washed they were  
 submitted to complete immersion in the liquid, for at least an  
 hour for the heavy oils, and eight for the light oil and tar oils; they were then  
 well rinsed and finished or dressed in the usual manner. The skins by  
 process acquire such a degree of suppleness that it will be found practi-  
 cable to use for manufacturing gloves skins which prepared by any of the  
 many processes could only be used for making boots and shoes, and  
 especially their value will be more than quadruple that which it would be  
 if the skins were prepared in the usual manner. As the heavy oils are at the  
 present time much cheaper in the market than the lighter oils or even than  
 oil, the heavy oils are those which should be employed, as far as  
 possible, in preference to the other, inasmuch as their action is more  
 rapid, decided, and energetic in the different processes above mentioned.

In witness whereof, I, the said William Edward Newton, have hereunto  
 set my hand and seal, the thirty-first day of December, in the year  
 of our Lord One thousand eight hundred and sixty-three.

W. E. NEWTON. (s.)

J. W. MORTON,  
 66, Chancery Lane.

LONDON:  
 Printed by GEORGE HOWARD BROWN and WILLIAM ROBERTSON,  
 Printers to the Queen's most Excellent Majesty. 1864.