

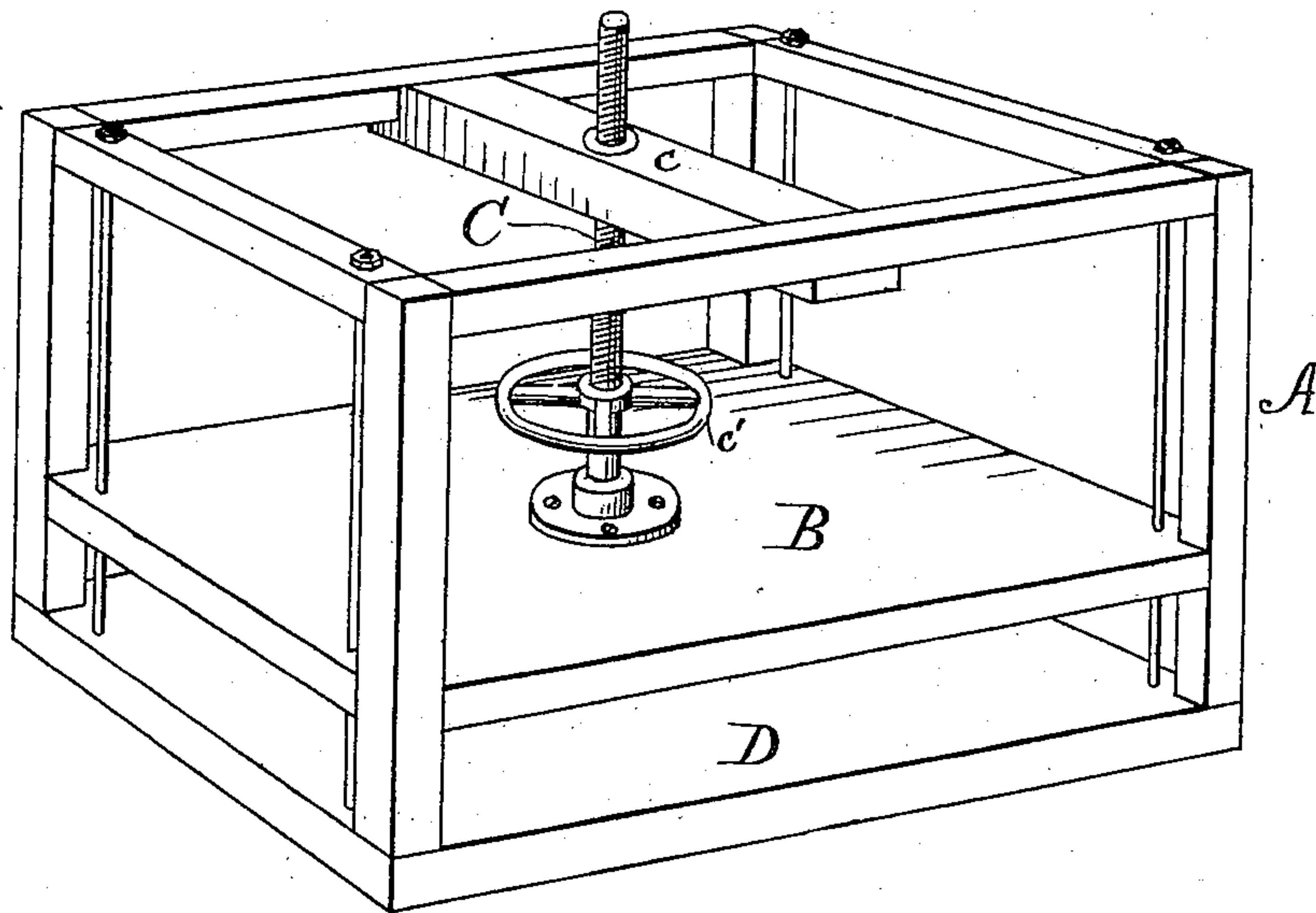
(No Model.)

J. ROWE, Jr., & C. F. PERKINS.

ART OF WORKING RAWHIDE.

No. 267,595.

Patented Nov. 14, 1882.



WITNESSES

*E. C. Davidson,*  
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INVENTORS

*John Rowe Jr.,*  
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*by their Attorneys*  
*Baldwin, Hopkins, & Perkins*

# UNITED STATES PATENT OFFICE.

JOHN ROWE, JR., OF BALLARD VALE, AND CHARLES F. PERKINS, OF BROOKLINE, MASSACHUSETTS.

## ART OF WORKING RAWHIDE.

SPECIFICATION forming part of Letters Patent No. 267,595, dated November 14, 1882.

Application filed June 15, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN ROWE, Jr., of Ballard Vale, in the county of Essex, and CHARLES F. PERKINS, of Brookline, in the  
5 county of Norfolk, both in the State of Massachusetts, citizens of the United States, jointly have invented certain new and useful Improvements in the Art of Working Rawhide, for the production therefrom of chair-seating and  
10 other useful articles, of which the following is a specification.

The rawhide chair-seating, for the production of which our invention is particularly designed, is in its form substantially a counter-  
15 part of the split-cane material which has been used for many years; but in toughness, firmness, and durability the rawhide chair-seating far exceeds that made from cane or rattan. This advantage comes from the tough, firm,  
20 and durable nature of the rawhide itself. At the same time, by reason of these very qualities, it presents great difficulty in manipulation; and an important object of our present invention is to overcome this difficulty without  
25 in any way impairing the value of the article for the purposes for which it is intended.

In our method of working rawhide to obtain the results above described our first step is to put it into such condition that it can be cut or  
30 worked by the use of such implements as are commonly employed for kindred uses. Of itself and in its ordinary condition it is so hard as to turn and ruin the edge of any cutting-instrument. Various methods have been prac-  
35 ticed by which this hardness is overcome. Treatment with glycerine, tallow, oil, &c., has been applied, and the rawhide has then been rendered permanently soft and pliable; but for our purposes such treatment is of course de-  
40 structive. On the other hand, the temporary softening of rawhide by the use of water, as heretofore practiced, is equally useless, because of the distortion caused by the unequal shrinkage of the material. Our present invention  
45 consists in part of a method of employing its softening properties, while at the same time it precludes the shrinkage that the use of water has heretofore caused.

The novel features of our treatment consist  
50 broadly in the introduction into the hides to be worked of the quantity of water required

while the hides are closely pressed or compacted together. Under these circumstances we find that the variations in capillary absorption of the different parts of the hides become  
55 self-regulating—that is to say, that the introduction and transfusion of the fluid through the different portions of the hides is just equal in degree to the amount of fluid required to  
60 give the necessary softness, yet not so much as to cause any distortion by shrinkage when the water is subsequently removed and the hardness and toughness of the original restored. For the operation described but a small quan-  
65 tity of water is to be used. The proper amount (5 may be readily secured by applying to each of the hides enough water to coat or cover its surface. This may be done by hand or by passing the  
70 hides between wetted revolving cylinders or exposing them to water in the form of a fine jet or spray, or in any other manner by which their exterior becomes covered with a thin film of moisture. While thus externally moistened they are to be subjected in convenient number  
75 to pressure, and allowed to remain until the water has been sufficiently transfused through the mass. The pressure may be conveniently applied to the dampened hides, while piled one  
80 upon the other, by weights, or by a screw or lever press, and should be sufficient to bring all adjacent parts of the hides in intimate contact. The accompanying drawing represents  
85 a convenient form of press for this purpose. It consists of a frame-work, A, of wood, of sufficient height to accommodate a platen, B, and a screw, C, for raising and forcibly de-  
90 pressing it, and to give room between the platen and base for the number of hides to be operated upon. The base D of the press, on which the hides are laid, and the platen are about  
95 equal in area, and have sufficient surface to receive and act upon all parts of the hides. The upper side of the base and under side of the platen are covered with sheet-zinc to prevent any portion of the water on the hides be-  
100 ing taken up by the wood, of which the platen and base are ordinarily preferably made. The upper end of the screw passes through a threaded hole in a stout cross-brace, c, and power is applied to the screw to raise and lower the plat-  
en by the hand-wheel c' on the screw. When a press of this sort is used the hides, having



previously received a sufficient supply of water as described, are subjected to a considerable pressure in the press.

The length of time absolutely required for continuing the pressing operation varies somewhat with the class of hides used, the imported South American hides being generally of a more compact texture, and consequently requiring a longer time, than the domestic hides; but in any case the pressure should be continued for at least six hours, and we have found in practice that the best results are obtained by keeping the hides in the press for from twenty-four to thirty-six hours. The pressure may, indeed, be continued for a longer period, if convenient; but from a day to a day and a half will be found amply sufficient to insure a successful result.

The remainder of our process of treatment is intended to be followed while the hides are in the condition produced by the treatment we have already described. It consists in subdividing the hide while in the condition described into sheets of uniform thickness throughout, and then cutting those sheets into one or more narrow strips of uniform width throughout. For convenience of manipulation both in the acts of splitting and cutting, a circular piece may first be cut from the hide of as great a diameter as the hide will give. This circle includes the best portions of the hide for our purpose. The skirts or surplus, while less valuable, can be utilized by tanning, or converted into glue. For the subdivision into sheets of uniform thickness we prefer to employ the well-known belt-knife machine commonly employed for kindred purposes, which is provided with adjustment devices regulating the thickness of cut. This thickness, in the production of rawhide chair-seating, should be about one thirty-second of an inch, that being about the thickness of the cane, and consequently of its rawhide substitute. The cutting from the sheet of the narrow strip which the article calls for may be best accomplished by the use of a cutter and a supporting-table so arranged that, beginning at the outside of

the circular sheet of hide, a strip of the width required—viz., from one-twelfth of an inch up—can be cut spirally or helically around the periphery of the sheet and gradually nearing the center. In this manner a continuous strip of great length may readily be obtained. Such a strip, when finished, closely resembles the ordinary cane chair-seating, and this resemblance may be increased, if desired, by rounding its upper surface and coloring or varnishing the whole to more closely obtain the resemblance desired.

The importance and value of the method we have described lies very greatly in the fact that when the water which was introduced into the rawhide to soften it for working has performed its object and the strip has become dry its uniformity of dimension both in width and thickness is retained. This result, where water is used as the softening medium, we conceive ourselves to be the first to have obtained.

We are aware that the softening property of water upon rawhide has long been known, and it has been commonly made use of when exact uniformity of dimension in the product was immaterial, and we make no claim broadly to the use of water as an agent. The novelty of our invention lies rather in the art or method of treatment employed, whereby the shrinkage inevitably following the use of former processes of treatment is avoided.

What we claim is—

The improvement in the art of working rawhide which consists in first moistening the surface of the hide, then by pressure causing the moisture to permeate the hide, and afterward splitting and cutting it while thus moistened.

In testimony whereof we have hereunto subscribed our names this 13th day of June, 1882.

JOHN ROWE, JR.,  
CHAS. F. PERKINS.

Witnesses:

ALEX. P. BROWNE,  
J. HENRY TAYLOR.