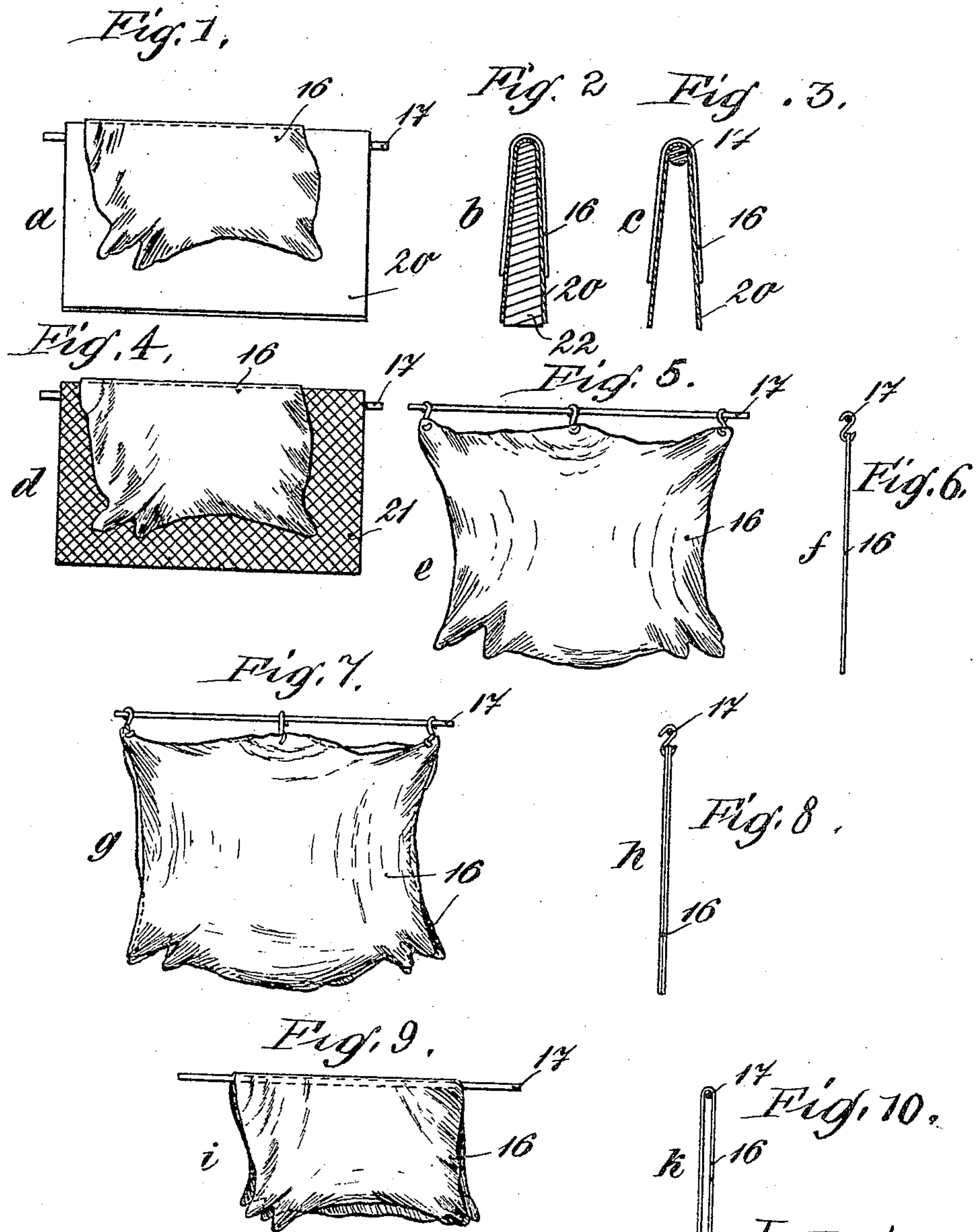


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PATENTED MAR. 27, 1906.

R. RIEDER.
DYEING LEATHER.
APPLICATION FILED APR. 7, 1904.



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RICHARD RIEDER, OF OSTERWIECK, GERMANY.

DYEING LEATHER.

No. 816,378.

Specification of Letters Patent.

Patented March 27, 1906.

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To all whom it may concern:

Be it known that I, RICHARD RIEDER, a subject of the German Emperor, and a resident of Osterwieck-on-the-Harz, in the Empire of Germany, have invented certain new and useful Improvements in or Connected with Dyeing Leather, of which the following is a specification.

This invention has reference to a process for dyeing leather on the grain side or improvements in connection with same.

According to this invention the skins to be dyed are spread with the flesh side on thin flexible plates, and in order to obtain a firmer adhesion of the skins to the plates adhesive materials of any kind may be employed. Thereupon the plates, together with the skins, are placed in a suitable manner in the dyeing apparatus—for instance, the flexible plates may be placed on acute-angled blocks with triangular section or on slightly-curved dyeing tables or the like, to the form of which they accommodate themselves by reason of their great flexibility. In certain circumstances, when the arrangement of the dyeing apparatus admits of it, these thin flexible plates may serve as the sole supports for the skins, the skins, with the plates, being hung directly in the dyeing-vats. Thereupon the dyeing of the skins is effected by sprinkling or "washing" them with dye solution, which flows in through appropriate apertures, and after running off or dripping of the skins and leathers and the backing plates or blocks the dye solution immediately flows back into the dye-reservoir.

The improvement effected by spreading the skins on thin flexible plates before placing or suspending them in the dye-vats consists in the fact that it is much easier and better to spread the skins smoothly on the level surfaces of the flexible plates than on the curved plates and blocks in the dyeing apparatus. Consequently in this manner it is much easier to prevent the skins from being dyed on the flesh side. Once the skins are smoothly spread on the plates they can be hung and bent over the blocks without becoming detached in one place or another. Moreover, it is thereby rendered possible to work continuously, because during the dyeing proper and while the dyeing apparatus is acting on certain skins or leather other skins and leathers can be placed or spread on the flexible plates preparatory to dyeing them.

Likewise the skins and leathers on these plates, respectively before and after the dyeing in the apparatus, receive their preliminary treatment with ooze and their subsequent treatment with the adhesive substance without having to be taken off their supports—the flexible plates. The result is a considerable saving of labor, a very advantageous treatment of the skins, the quality of which suffers by repeated spreading, and more cleanly work, the flesh side remaining perfectly clean and undyed.

In the case of many kinds of leather, such as the dyeing of glacé leather, the above method of working is very desirable, because it is necessary to prevent contact between the ooze, the dyeing solution, and the fixing liquid owing to the destructive effects one has upon the other.

In the case of leather like tanned sheep-skin or grain splits a special advantage is gained by the possibility of passing the skins dyed on thin plates through a roller system, together with the said plates. In so doing the skins retain their correct shape and are pressed dry in this way.

In the case of many leathers which are not soaked before dyeing, but are put into the dye apparatus dry, it is not possible to get them to lie perfectly close against the flexible plates, even though an attempt be made to stretch them flat in the manner above described. If, as is often the case, there are holes in such skins or leathers or if they possess seriously-broken parts, it often happens that during the dyeing the dye liquid runs in under the leather and in this manner the flesh side becomes partly dyed. In order to obviate this defect, it is desirable to use for such skins flexible supports of wire-netting or else extensively-perforated plates. It is then rendered possible for the dye which may happen to get onto the flesh side of the skin to run off through the meshes of the netting or the perforations of the plate without partly dyeing the flesh side. As a matter of course in those cases where, as hitherto, the skins or leathers are spread directly onto the dyeing-blocks it is also possible to employ perforated dyeing-blocks or blocks made of wire-netting in order to produce the same effect. It has been found, however, that when leathers with rough or wrinkled grains are to be dyed these are not thoroughly dyed, especially in the flanks, if treated according to

any of the preceding methods described. The reason of this is, of course, that the "low-lying" parts of the grain, or the parts of the leather which are covered with wrinkles, do not come into contact with the dye liquid at all or not to a sufficient degree for effecting a thorough and uniform dyeing. As a consequence such parts remain of a lighter color than the remaining portion of the leather.

In order to obviate this defect, it is necessary that during the dyeing—that is to say, during the sprinkling on of the dye—the skins or leathers to be dyed should be moved in such a manner—dragged, stretched, and slackened again—that the structure of the leathers is continually changed. In this manner the wrinkles are continually shifted and smoothed out again and the access of the dye to the wrinkles and grooves of the grain is facilitated.

As a matter of course in connection with such a mode of treatment of the skins and leathers it is not possible to spread the latter onto plates or blocks, as usual, but they must be suspended free or "clear," so as to render it possible to change the position of the various parts of the skin toward each other. In connection with this in order that a partial dyeing of the flesh side may be obviated these leathers are either spread out together in twos with the flesh sides against each other or else each separate skin is folded double with the grain side outward. For the purpose of stretching and slackening the leathers during the dyeing one may of course employ the most varied mechanical appliances. In case it is desired to dye the flesh side also this folding double of course becomes unnecessary.

In the accompanying drawings, Figure 1 is a side elevation of a bent plate, showing a skin thereon for treatment in accordance with my invention. Fig. 3 is a transverse sectional view of the same. Fig. 2 is a similar view showing a modified construction in which a cross-sectionally-acute-angled block is employed. Fig. 4 is an elevation of a netting and showing a skin thereon. Fig. 5 is a detail elevation of one of the suspending rods of the wheel of a dyeing apparatus, showing a skin suspended therefrom by means of hooks. Fig. 6 is a detail sectional view of the same. Fig. 7 is a side elevation of one of the wheel-suspending rods, showing a plurality of skins suspended therefrom by means of hooks. Fig. 8 is a sectional view of the same. Fig. 9 is a detail elevation of one of the wheel-suspending rods, showing a skin

bent thereover and suspended therefrom. Fig. 10 is a sectional view of the same.

The skins or leathers 16 are suspended on cross-bars 17, which are carried on the periphery of a revoluble wheel (not shown) of a dyeing apparatus for dipping the skins in a dye solution in a vat below the wheel as the latter revolves.

The skins may be suspended in the wheel from the rods 17, as shown in Figs. 5 to 10, inclusive, according to the results to be obtained, or they may be placed on doubled plates 20, as shown in Figs. 1 and 3, or on nettings 21, as shown in Fig. 4, or they may be placed on cross-sectionally-acute-angled dyeing-blocks 22, as shown in Fig. 2, which blocks may be suspended in the wheel.

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

1. The process of dyeing leather, which consists in placing the skins or leathers upon flexible perforated backings, bending said skins or leathers and said flexible backings to double said skins or leathers, and then subjecting said skins or leathers while on said bent perforated backings to the action of the dyeing liquor.

2. The process of dyeing leather, which consists in placing the skins or leathers to be dyed upon flexible perforated backing-plates, bending the plates and skins or leathers to double the latter, suspending said bent plates with the skins or leathers thereon upon bases of the required form, and subsequently subjecting the skins or leathers to the action of the dyeing liquor.

3. The process of dyeing leather, which consists first in attaching the skins or leathers to be dyed upon flexible perforated backing-plates and then subjecting said skins or leathers, while on the backing-plates, to the dyeing liquor, substantially as set forth.

4. The process of dyeing leather, which consists in placing the skins or leathers to be dyed upon flexible wire-nettings, bending said skins or leathers and said flexible wire-nettings, suspending the said wire-nettings with the skins or leathers thereon upon rigid bases of the required form, and subsequently subjecting the skins or leathers to the dyeing liquor.

In witness whereof I have hereunto set my hand in presence of two witnesses.

RICHARD RIEDER.

Witnesses.

JEAN GRUND,
CARL GRUND.