

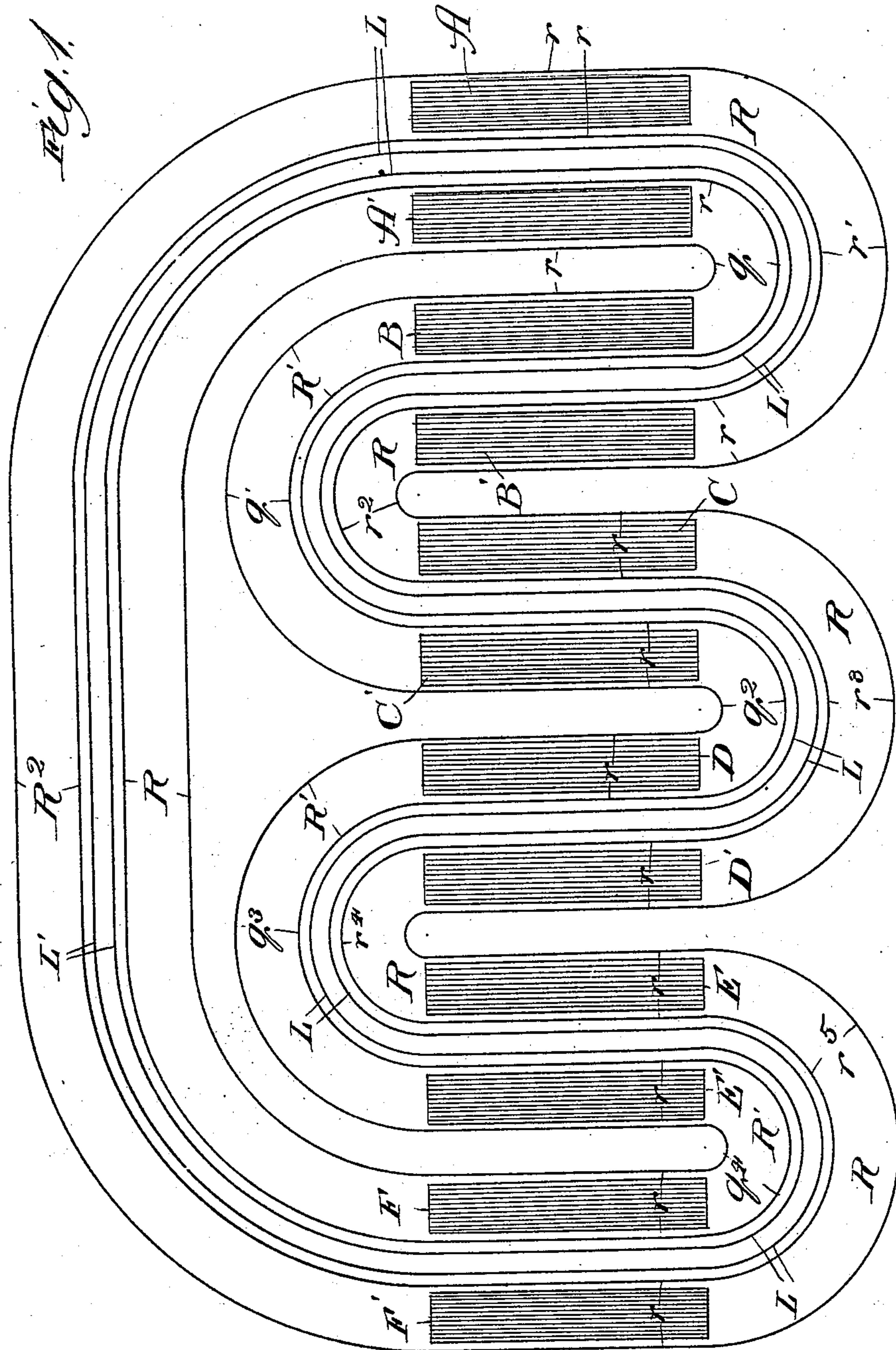
(No Model.)

2 Sheets—Sheet 1.

J. CAILLET.
TANNING APPARATUS.

No. 512,861.

Patented Jan. 16, 1894.



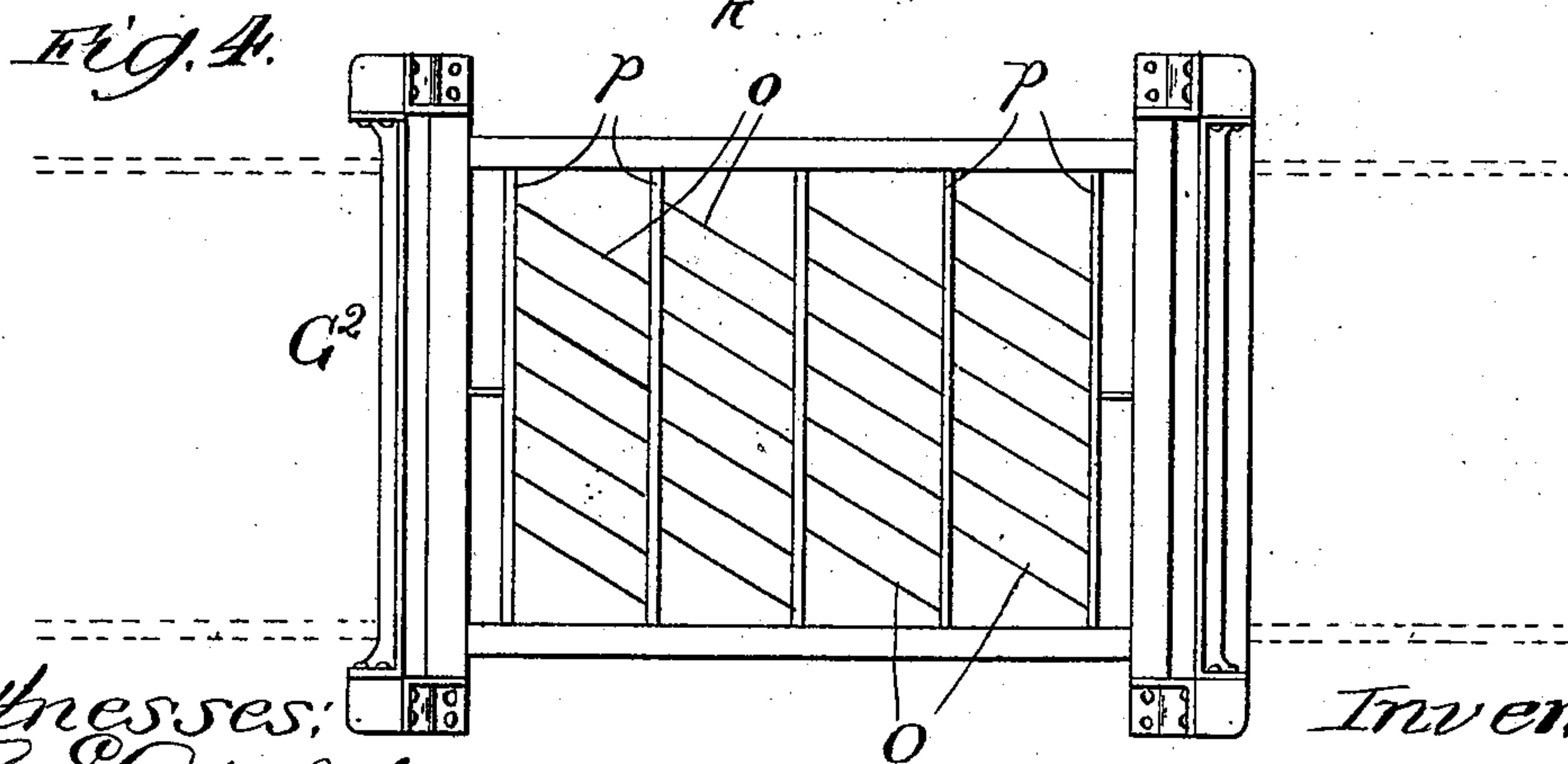
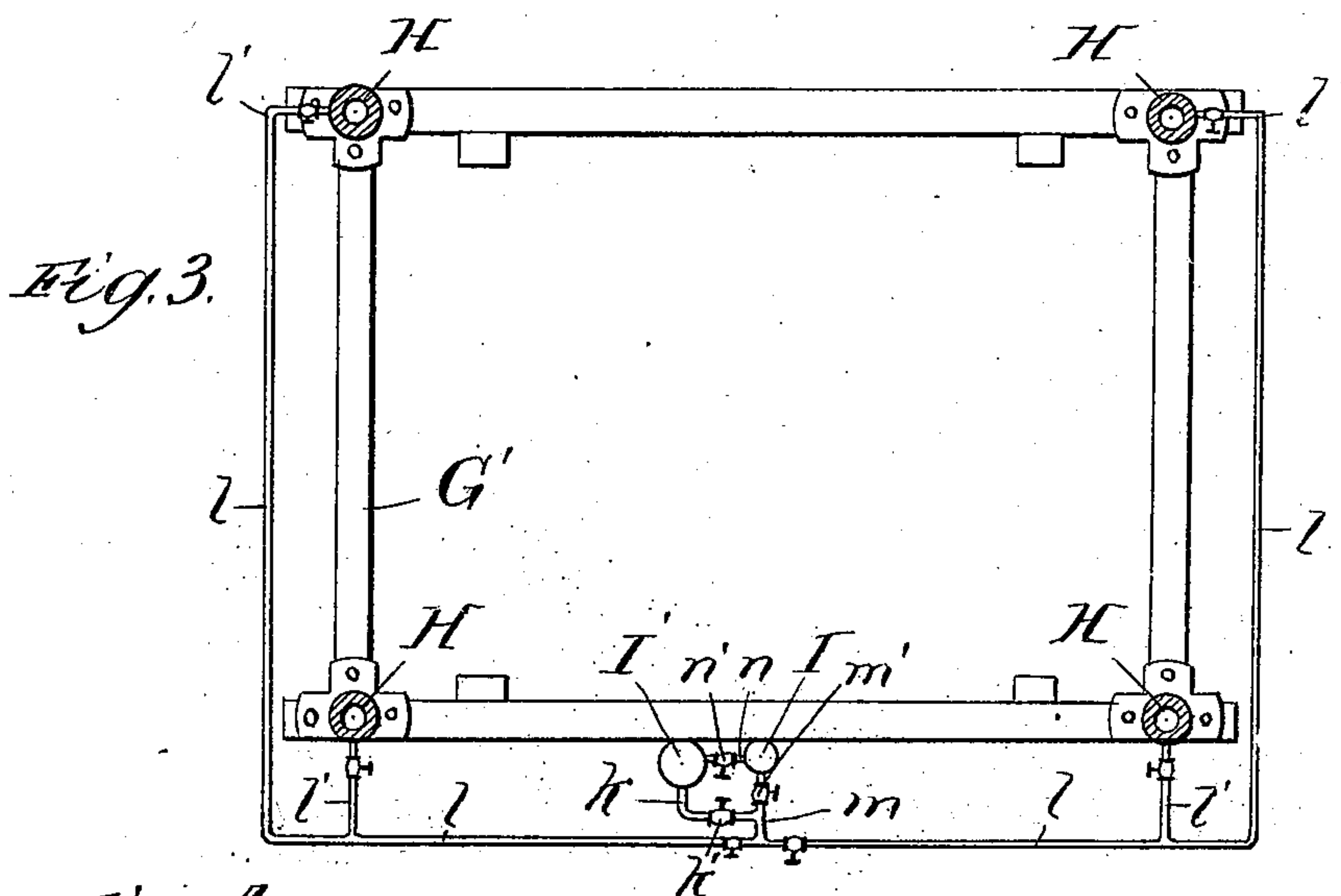
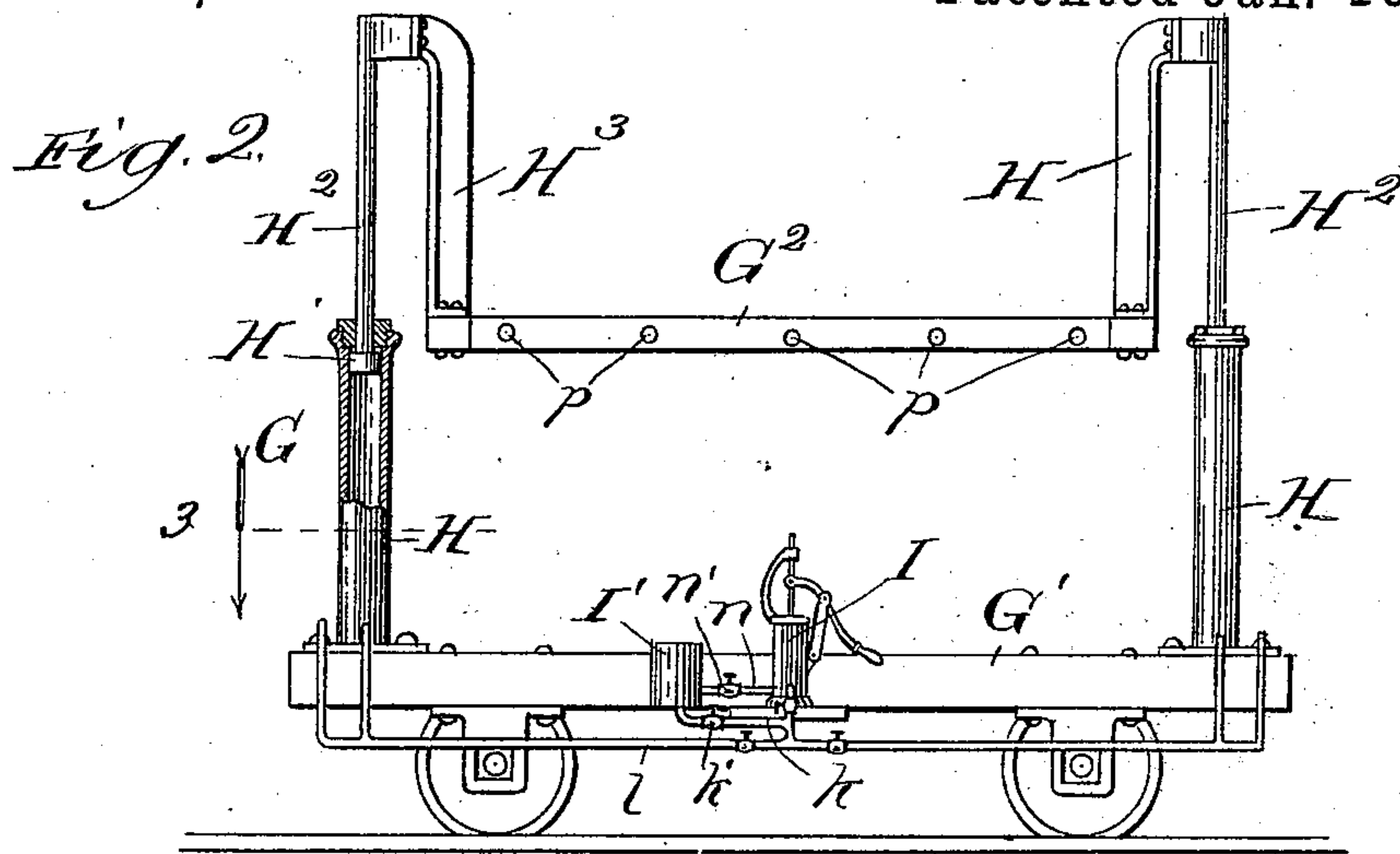
Witnesses:
Chas. E. Gaylord,
E. R. Shipley.

Inventor:
Justin Cailet,
By *Dynenforth & Dynenforth,*
Attys.

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Attorneys

UNITED STATES PATENT OFFICE.

JUSTIN CAILLET, OF CHICAGO, ILLINOIS.

TANNING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 512,861, dated January 16, 1894.

Application filed April 27, 1893. Serial No. 472,004. (No model.)

To all whom it may concern:

Be it known that I, JUSTIN CAILLET, a citizen of the Republic of France, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Tanning Apparatus, of which the following is a specification.

The object of my invention is to provide novel means whereby the operation of tanning skins shall be greatly facilitated and expedited over the manner of procedure in tanning as hitherto practiced.

My improved apparatus is illustrated in the accompanying drawings, in which—

Figure 1 is a diagrammatic plan view showing the horizontal series of troughs and the railway-track system on which to run the skin-carrying cars. Fig. 2 is a broken view in side elevation of one of the cars. Fig. 3 is a sectional plan view of the car taken at the line 3 on Fig. 1 and viewed in the direction of the arrow. Fig. 4 is a diagrammatic view showing, in plan, the skin-hanger frame detached from the truck of the car.

In practice I prefer to dispose the troughs in pairs, the members of each pair to contain the same liquid tanning preparation, and the numbers of pairs of the troughs corresponding to the number of the different preparations to be employed in the entire tanning operation. As shown I provide six pairs of the troughs, denoted respectively in Fig. 1 of the drawings as A, A', B, B', C, C', D, D', E, E' and F, F'. These troughs are preferably of rectangular shape and oblong; and they should be, and are by preference, each at least one hundred yards in length, about four to five yards wide, and of any desired depth, and are best built, or at least lined, with wood, brick or cement. The troughs are in parallel relation to each other in a suitable inclosure (not shown, but which may be a mere shed). Along opposite sides of each trough are railway rails r , r , those flanking the first trough A being connected by a bend r' with those flanking the trough B', these being connected by an opposite bend r^2 with the rails flanking the trough C, which last-named rails are connected by a bend r^3 , like the bend r' , with the rails flanking the trough D', and these being, in turn, connected by a bend r^4 , like the bend r^2 , with the rails flanking the trough

E, and the last-named rails being, in turn, connected by a bend r^5 , like the bend r^3 , with the rails r which flank the trough F'. The other troughs A', B, C', D, E' and F have their flanking rails r similarly connected by bends q , q' , q^2 , q^3 and q^4 , alternating, as to direction, at opposite sides of the series of troughs and respectively corresponding with the first-named bends. Thus two railways R and R' are provided extending respectively about the troughs alternately and sinuously, and are rendered endless by their respective continuations R² and R³.

L is a track, of narrower gage, extending between the members of each pair of the troughs and thus flanked by rails r , and being connected by bends which follow the bends of, and extend between, the tracks R, R', with its continuation L' extending between the tracks R², R³. The plane of these tracks should be about that of the upper edges of the troughs, thus somewhat above, or below, or on a level with them.

G is one of the cars, the width of the truck-portion of which is such as to adapt the wheels at its opposite sides to coincide with the rails r flanking a trough, whereby the latter is straddled by the car; and the length of each car should be such as to cause a train of several cars to extend only partway of, and not more than half, the length of a trough.

The truck-frame G' is rectangular and carries a vertically adjustable hanger-frame G² for the skins to be tanned.

As one of various mechanisms for rendering the hanger-frame vertically adjustable, I provide at each corner of the truck a vertical cylinder H containing a piston H', the piston-rod H² working through the upper ends of the cylinders and carrying, on arms H³ depending from and rigidly connected with them, a rectangular hanger-frame G² supporting the transverse bars p , between each pair of which extend obliquely and horizontally the rods o on which the skins to be tanned are hung.

For operating the pistons H', I provide a fluid-pump I communicating controllably, through a pipe n containing a valve n' , with a fluid (preferably liquid) reservoir I', the pump and reservoir being supported at one side of the truck; and connected with the dis-

charge-end of the pump by an outlet-pipe *m* containing a valve *m'*, is a pipe *l* having valve controlled branches *l'* leading into the base-
 5 portions of the cylinders. A return-pipe *k* to the reservoir leads from the pipe *m* and contains a valve *k'*. Thus to raise the platform, the valve *k'* is closed and the valves *n'*, *m'*,
 10 and those in the branches *l'* are opened, whereupon, by actuating the pump, the fluid supplied from the reservoir *I'* is forced into the cylinders *H* and raises the pistons therein, thereby raising the hanger-frame *G*²; and to
 15 lower the frame, the valve *k'* is opened and the valves *m'* and *n'* are closed, whereby the weight of the loaded frame will force the pistons down and drive the fluid through the pipes into the reservoir, to be used over again. The valves in the pipes *l'* permit regulation of the fluid-pressure to the different cylinders
 20 according to requirement, as for uniformity in operating the pistons.

A train of the cars loaded with skins to be tanned and suspended in oblique relation to the sides of a trough on the hanger-rods *o* is
 25 intended to run on each track *R* and *R'*, one, at first, straddling the trough *A* and the other the trough *A'*, and a single locomotive (not shown, but of comparatively small variety, and driven by gas, steam, or electricity) for
 30 both trains runs on the intermediate track *L* and is intended to be connected, as by a draft-beam, with the forward cars of both trains. With the skin-laden cars in position and their hanger-frames let down to dip the suspended
 35 skins into the liquid contents of the troughs *A* and *A'*, the trains are driven, at intervals, back and forth to run the obliquely hung skins back and forth through the liquid, and periodically raised out of it for air-exposure,
 40 till adequately treated with the first liquid when, on raising the skins by elevating the platforms *G*², the trains are run to cause the cars to straddle the pair of troughs *B*, *B'*, into the contents of which the obliquely hung
 45 skins, by lowering the platforms, are dipped, and worked back and forth therein; and so on throughout the series of troughs till the last pair has been used, when the skins are finished and may be removed to be replaced
 50 by fresh ones, which are transported over the tracks *R*² *R*³ and *L'* to the first pair of troughs, whereupon the described operation is repeated. Of course, as will be understood, a single car, on each track, laden with the skins may
 55 be all that is used at one time, or only one car or train at a time may be caused to straddle a trough and to be run from one trough to another in succession (the track being ar-

anged accordingly). It is preferred, however, for the sake of expediting the tanning
 60 operation, but all the pairs of troughs in the series shall be simultaneously in operation, each pair having two trains of skin-laden cars working over them in the manner described, the skins on the respective trains being in
 65 different stages of progress of the tanning operation.

As will be seen from the foregoing description, by means of my improved apparatus the operation of tanning may be practiced most
 70 expeditiously on a very large quantity of hides at once, with comparatively little expense for fuel for running the locomotives; and that a tanning-plant may be equipped with comparatively little expense, low wooden sheds
 75 supported by columns sufficing for a housing, provided the roof be high enough for the trains.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a tanning apparatus, the combination
 80 of a series of troughs for containing the tanning liquid, extending side by side in pairs, railway-tracks *R* and *R'* sinuously connected by bends and having their rails flanking the
 85 troughs, a locomotive-track *L* between the said tracks, and skin-carrying cars *G* adapted to run on the said tracks *R*, *R'* and thereby straddle the troughs and provided with means for lowering the skins into and raising them
 90 out of the troughs at will and adapted to be operated in pairs at adjacent troughs, each pair by a single locomotive on the track *L*, substantially as and for the purpose set forth.

2. In a tanning apparatus, the combination
 95 of a series of troughs for containing the tanning liquid, extending side by side in pairs, railway-tracks *R* and *R'* sinuously connected by bends and having their rails flanking the troughs and having continuations *R*² and *R*³
 100 rendering said tracks endless, a locomotive-track *L* between the said tracks and having a continuation *L'* rendering it endless, and skin-carrying cars *G* adapted to run on said tracks *R*, *R'* and their continuations and
 105 thereby straddle the troughs, and provided with means for lowering the skins into and raising them out of the troughs at will and adapted to be operated in pairs at adjacent troughs, each pair by a single locomotive on
 110 the said locomotive-track, substantially as and for the purpose set forth.

JUSTIN CAILLET.

In presence of—

M. J. FROST,
 W. N. WILLIAMS.