

(No Model.)

A. M. FLETCHER.

HIDE LIFTER AND CARRIER FOR TANNERIES.

No. 378,670.

Patented Feb. 28, 1888.

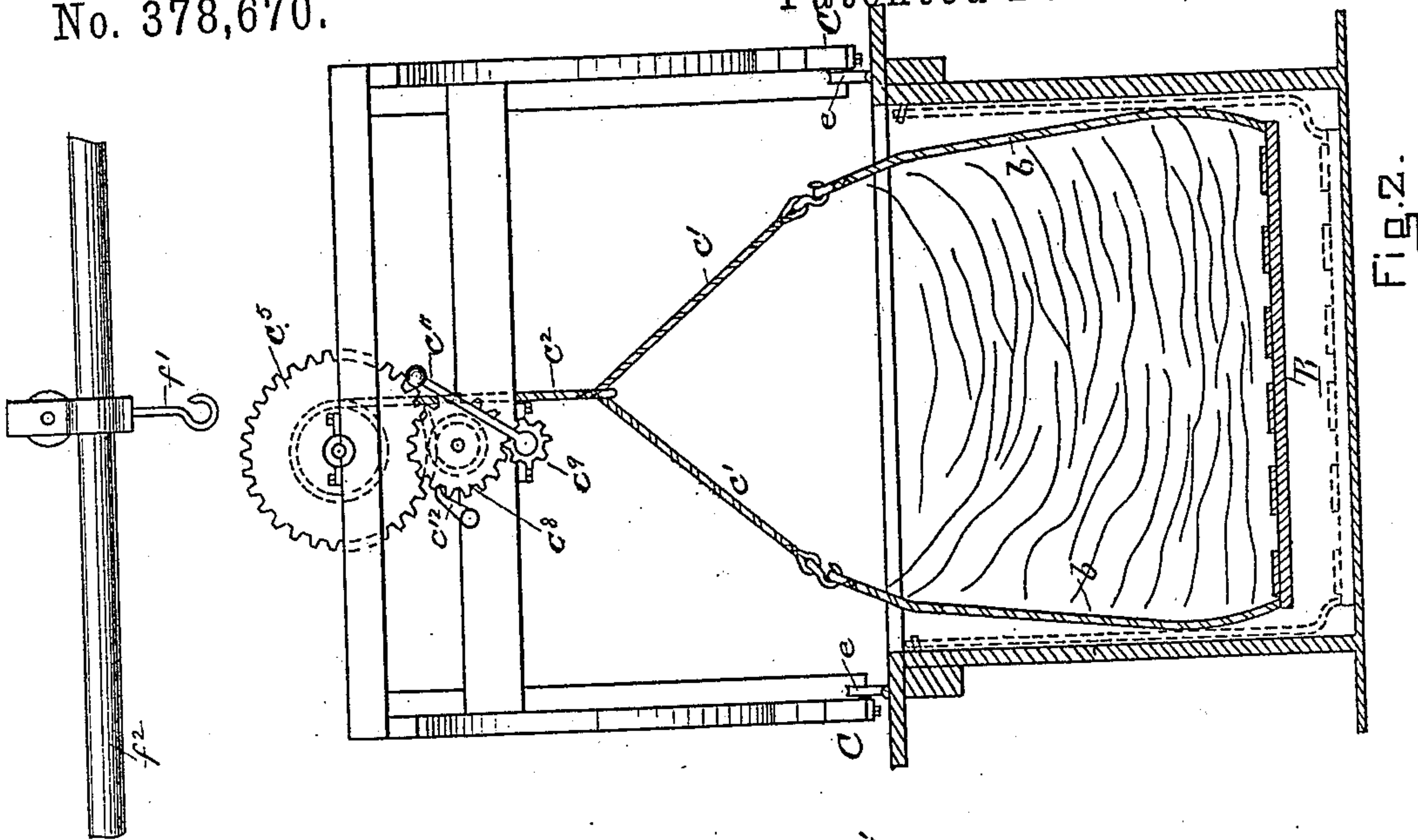


Fig. 2.

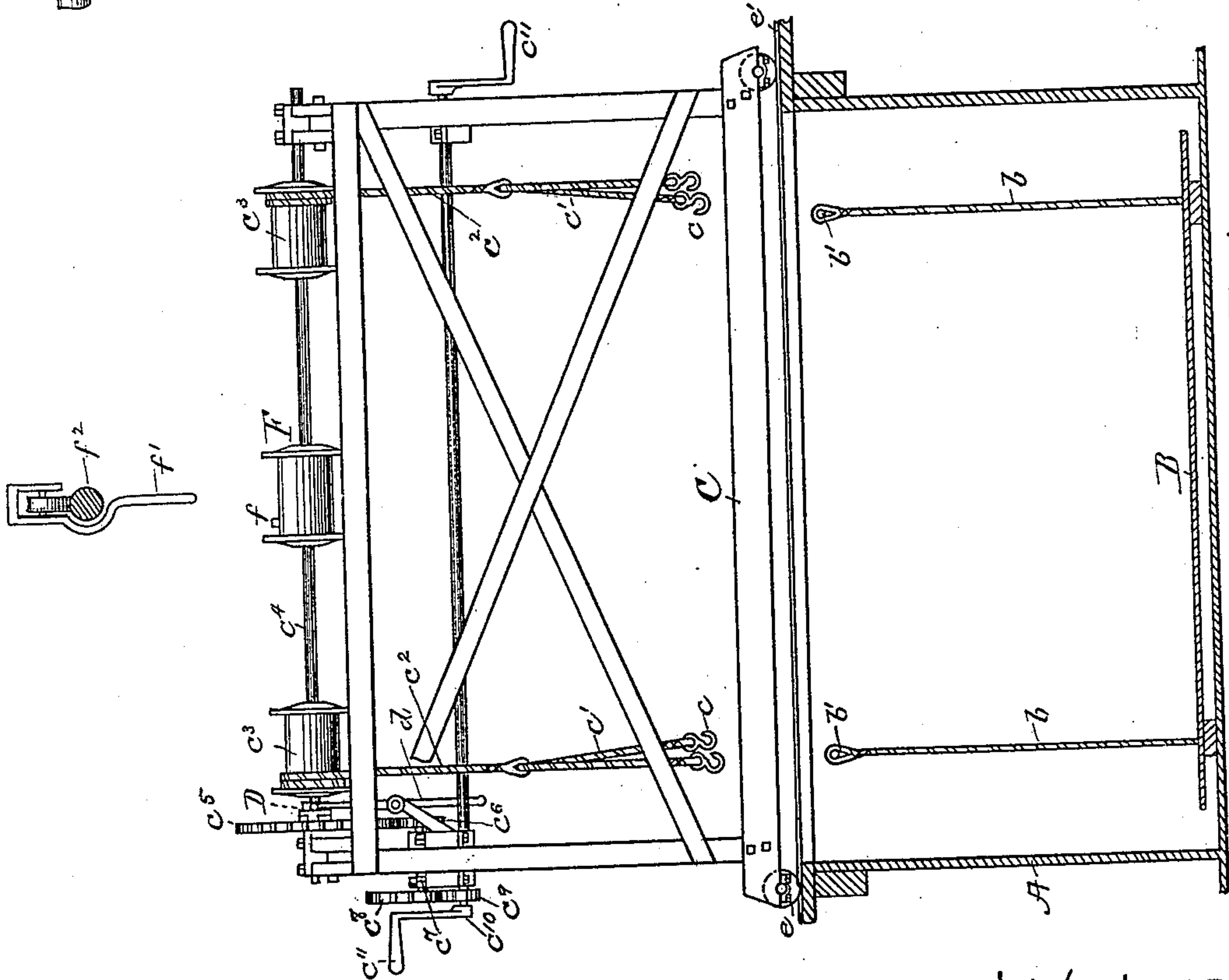


Fig. 1.

WITNESSES

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HIDE LIFTER AND CARRIER FOR TANNERIES.

SPECIFICATION forming part of Letters Patent No. 378,670, dated February 28, 1888.

Application filed March 28, 1887. Serial No. 232,694. (No model.)

To all whom it may concern:

Be it known that I, ANDREW M. FLETCHER, of Winchester, in the county of Middlesex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Skin and Hide Lifters and Carriers for Tanneries, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to the improvement in hide and skin lifters and carriers, hereinafter specified.

In the drawings, Figure 1 is a view in vertical section of a vat and of the lifter or elevator contained therein, and in side elevation of the hoisting mechanism. Fig. 2 is a view in vertical cross-section of the vat lifter or elevator partly raised, and in end elevation of the hoisting device or mechanism.

Referring to the drawings, A represents the vat, which is formed in the ordinary way, and which is adapted to hold the tanning solutions or liquids and the skins or hides in process of tanning. There is fitted to be vertically movable in this vat an elevator, B, which comprises, preferably, a flat open frame-work of suitable strength, but of a length less than the length of the vat and of a width considerably less than the width of the vat. There is attached to this frame-work at or near each corner a rope or chain, *b*, of a length sufficient to extend to or above the upper edge of the vat, and these ropes or chains furnish the means by which the elevator and the mass of hides or skins thereon are lifted from the vat. Each of these ropes has at its upper end an eye, *b'*, which is adapted to receive a lifting-hook, *c*. As there are four eyes, there are four lifting-hooks, there being a separate lifting-hook for each lifting rope or chain. The lifting-hooks are attached to the ends of the ropes or chains *c'*, and for convenience they are united together in pairs—that is, each pair of end ropes or chains is united or attached to a single rope or chain, *c''*. Each of these ropes or chains is attached to a windlass or drum, *c'''*, carried by a shaft, *c''''*, which is supported by the movable frame, car, or truck C. The shaft *c''''* is rotated by means of the gear *c''''''*, the intermediate pinion, *c''''''''*, upon the short shaft *c''''''''''*, the gear *c''''''''''''*, and

the pinion *c''''''''''''* on the crank-shaft *c''''''''''''''*. A detent-pawl, *c''''''''''''''''*, serves to lock the shaft *c''''''''''''''* and windlasses in any position against the downward strain of the lifter.

In order that the chains or ropes may be rapidly unwound from the drums or windlasses *c'''*, I have connected the shaft *c''''* with the gear *c''''''* by a clutch, D, which slides upon a fast feather of the shaft and is adapted to engage the hub or spokes of the gear, and this clutch is moved in and out of position to engage the gear by the lever *d*.

The frame, car, or truck is mounted upon the grooved wheels *e*, which run upon half-round metal tracks *e'*. The crank-shaft *c''''* preferably extends the full length of the frame or truck and has a crank, *c''''''*, at each end thereof. There may also be carried by the shaft *c''''* a drum, F, having an eye or hook, *f*, for engaging the end of an elevating-rope carried by a block, *f'*, adapted to run on the elevated rail *f''*, which is arranged at a right angle or substantially at a right angle to the tracks *e'*, so that for the purpose of shifting from one track to another the drum or windlass is connected with said rope and the car, truck, or frame lifted by winding the lifting-rope upon said drum sufficiently to lift the wheels or rolls *e* from the track *e'*, when it can be easily moved to any other track desired.

To operate the device the lifter B is first placed in the bottom of the vat and the ropes or chains *b'* either carried over the edge of the vat and attached to pins or other holding devices or to hooks or pins placed upon the sides or ends of the vat at the top and in a protected position. The vats are charged with the tanning solution and the hides are then placed upon the elevator in the same way that they would be placed in the vat in the ordinary process of tanning; and when it is desired to remove the skins or hides from the vat, instead of pulling them out one by one by means of a hook, as is now the custom, the portable frame, car, or truck is moved over the vat, the elevator-ropes connected with the windlasses or drums, and the windlasses or drums rotated to lift the elevator and the skins or hides supported thereby above the level of the vat, so that they are supported by the portable frame or truck, and they are then moved with it to any other vat or position desired.

The act of drawing the elevator B upward of course draws the elevator ropes or chains *b* taut and straight, so that the hides or skins which otherwise would extend to come in contact with the sides of the vat are caused to be moved or thrown in away from the sides, and are thus prevented from engaging the sides as the elevator is lifted. If the lifting ropes or chains *b* were attached to the elevator so as not to move inward upon the elevator the hides or skins, or so as not to move them away from the sides of the vat, then it would be practically impossible to lift the hides from the vat, as the air-suction would be so great as to overcome the power of the lifting-drums or windlasses; and therefore it is very material that these lifting ropes or chains shall be so attached to the elevator as to first act to throw or move the hides or skins away from the sides of the vat before the lifting of the elevator begins.

It is obvious that an elevator and hide-transferring car or truck of this character is of very considerable value in tanneries, as it is necessary in the process of tanning to remove the skins or hides from the vats and replace them either in the same vats or other vats from four to thirty times, and it is very often necessary to remove them from one vat and carry them to another vat quite a distance away.

Aside from the saving which arises from moving the skins or hides in one vat as a single body or mass, there is another saving which comes from doing away with the use of the hook in handling the hides and skins, because the hook scratches and pierces them to such an extent as to often materially injure their value.

The lifter or elevator is not only used for lifting hides and skins in soak, but also hides and skins which are in tan, and when so used they lift the tan with the hides or skins, and the car or truck carries them with the tan to the desired place.

The truck, car, or frame-work should have its ends open and unobstructed, so that it may take the elevator or lifter with its layer of hides or skins, transfer it to any given place, and then lower the same to the ground or floor, and be moved from over them in order that they may be easily reached and handled.

The driving-shaft instead of being arranged immediately below the windlass-shaft may be placed at one side thereof when desired.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The elevator-lifter and skin and hide transferring frame, truck, or car comprising a frame-work, C, mounted upon rolls or wheels and having the windlasses or drums *c*³ mounted at the top of said frame upon the shaft *c*⁴, ropes or chains attached to the said drums or windlasses, and each of which ropes or chains is divided into two sections or ends, each of such ends having a hook, and means for rotating said shaft *c*⁴, as and for the purposes described.

2. The combination of a portable frame, truck, or car for lifting hides and skins from the vats and transferring the same, comprising the frame-work C, the drums or windlasses *c*³, mounted upon a horizontal shaft upon the upper part of said frame, the ropes or chains *c*², adapted to be connected with the vat-elevator ropes or chains, the gear-wheel *c*⁵, the pinion *c*⁶, gear *c*⁸, pinion *c*⁹ on the crank-shaft, said crank-shaft, and the cranks *c*¹¹, substantially as described.

3. The combination, in a portable vat-elevator-lifting machine, of the windlasses or drums *c*³, mounted upon the shaft *c*⁴ and adapted to be rotated by cranks *c*¹¹ and intermediate gearing, with a clutch for connecting and disconnecting the shaft *c*⁴ with and from the gear mounted thereon, as and for the purposes described.

4. The combination of the portable car, truck, or frame C of a vat elevator and transferring mechanism having a shaft, *c*⁴, and a drum or windlass, F, one or more cranks connected with said shaft by suitable gearing, an elevated rail or track, *f*², a truck, *f*¹, to travel thereon, and a chain or rope connecting said truck with said windlass or drum F, as and for the purposes specified.

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In presence of—

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