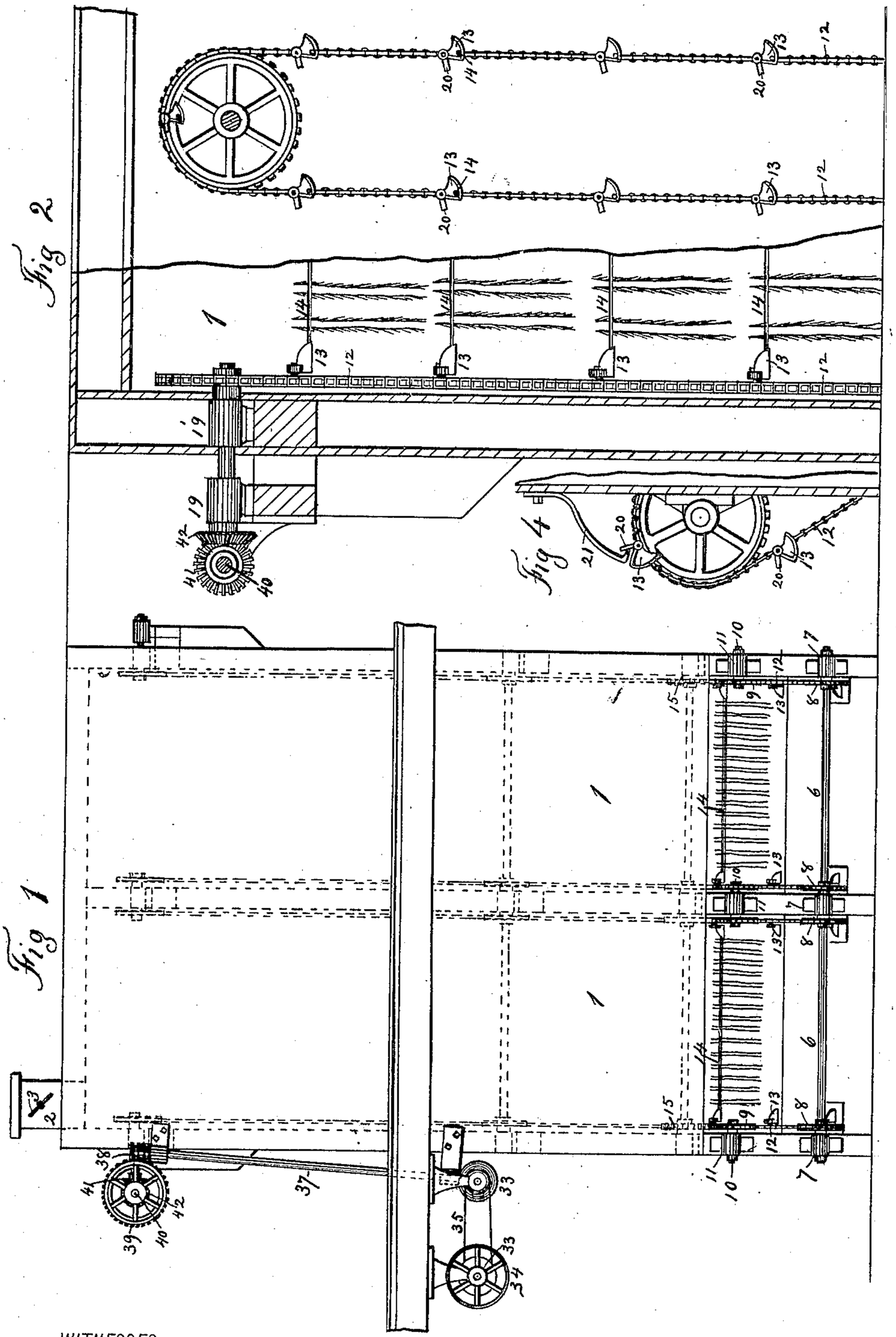
No. 679,178. Patented July 23, 1901.

J. MARSHALL.

APPARATUS FOR COLORING CARROTED SKINS.

(Application filed Apr. 26, 1900.)

(No Model.) 2 Sheets—Sheet 1.



WITNESSES

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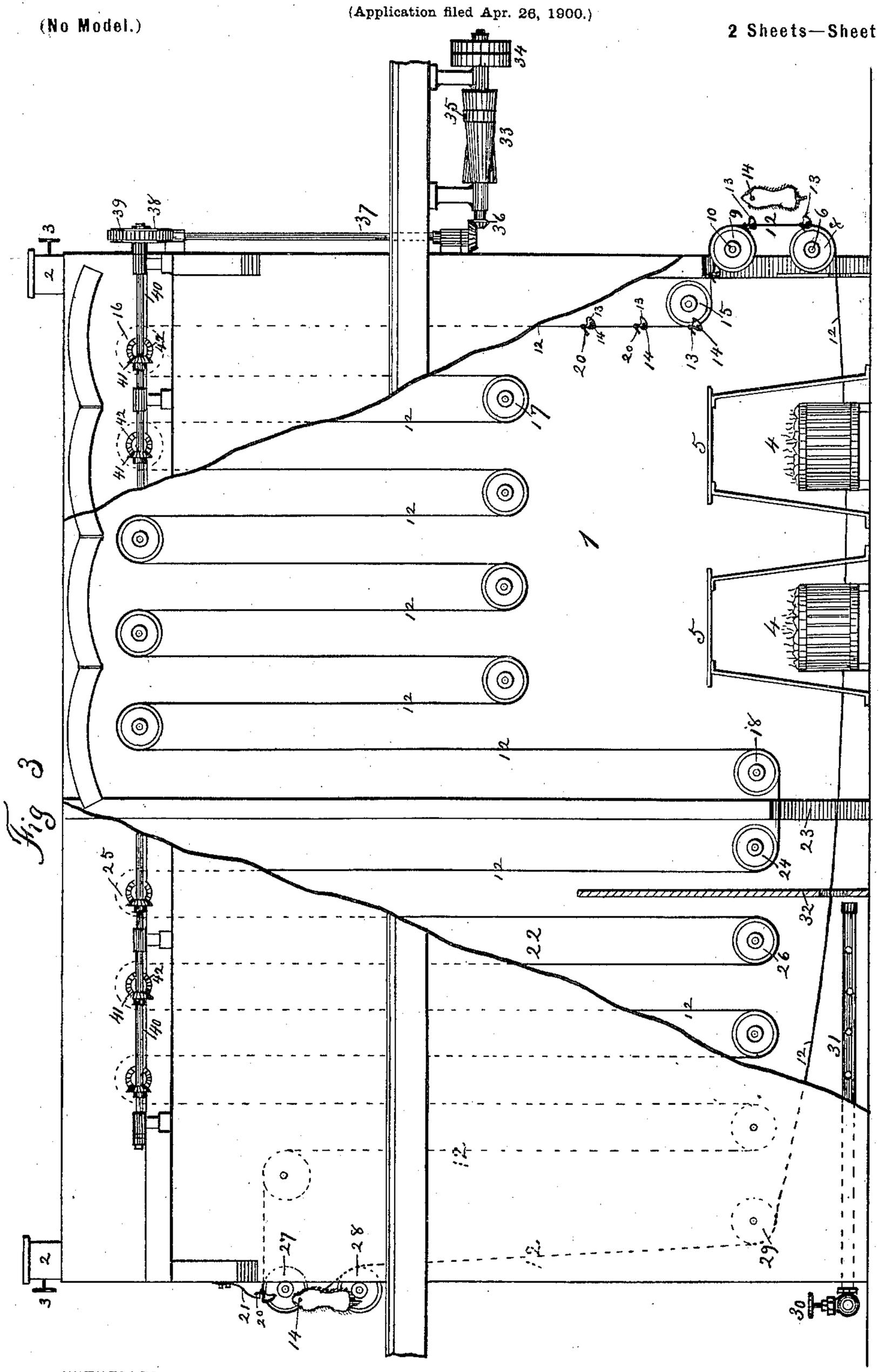

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JAMES MARSHALL, OF FALL RIVER, MASSACHUSETTS.

APPARATUS FOR COLORING CARROTED SKINS.

SPECIFICATION forming part of Letters Patent No. 679,178, dated July 23, 1901.

Application filed April 26, 1900. Serial No. 14,445. (No model.)

To all whom it may concern:

Be it known that I, JAMES MARSHALL, a citizen of the United States, and a resident of Fall River, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Apparatus for Coloring Carroted Skins, of which the following is a specification.

The skins for this purpose are first treated with a solution of nitrate of mercury, which is rubbed into the fur by machine or hand brushes. They are then to be dried and colored by exposure to the heat, and it is at this point that my improved system begins. The system now in use consists, mainly, of an iron, brick, or wood compartment, in which is a stove or steam pipes. The skins are strung upon rods and hung upon iron beams within the compartment and left until they are dry and colored yellow by the action of the heat, producing what is called "yellow carroted fur." This system necessitates the workman who hangs the skins passing in and out of the compartment and is very dangerous to health, owing to the fumes generated by the nitrate-of-mercury solution. Another system which obviates the above objection somewhat is to lay the skins flat upon drawers arranged in tiers, between which steam-pipes pass; but it is slow and laborious.

The object of my invention is to remedy all existing defects and to provide a safe, speedy, and cheap method of doing the work.

In the accompanying drawings, Figure 1 is a front elevation. Fig. 2 is a sectional elevation on an enlarged scale. Fig. 3 is a longitudinal elevation with a part of the side broken away to show the interior arrangement. Fig. 4 is a detail view of the tripping device for releasing the skins at point of delivery.

In all the drawings like figures relate to like parts.

1 is a compartment, preferably built and closed at the top by brick arches. It is supplied with a small chimney 2 for letting out smoke and a damper 3 for retaining the heat and fumes. On its floor is placed one or more fire-receptacles 4, which are covered at some distance above them by an iron shield 5, which protects the skins from too-direct heat. The fire may be forced by an air-pipe arranged below the grates, if desirable. The compartment should have considerable height, passing through two ordinary floors, as shown in the drawings, or one very high story. Arranged across the front of the compartment is a lower shaft 6. It is journaled in boxes 7 and carries a sprocket-wheel 8 close to each end. Directly above these sprocket-wheels are two others 9, which are supported on short shafts 10, journaled in boxes 11. An endless link-chain 12 is carried by these sprocket-wheels. At suitable distances upon its side are arranged buckets 13, in which the rods 14, supporting the skins, are dropped. (See detail sections, Fig. 2.) The endless chain after leaving sprocket-wheels 8 and 9, which are placed without the compartment and are at the feeding end of the oven, enters within the compartment, passing under sprocket-wheel 15. It then rises the full height of the compartment and passes over sprocket-wheel 16, then descends and passes under sprocket-wheel 17, and so on the length of the compartment, as shown in Fig. 3, until it leaves the compartment by passing under sprocket-wheel 18. It will be observed that wherever the endless chain passes under a sprocket-wheel through-shafts may be used; but where it passes over a sprocket-wheel short shafts, journaled in double outside boxes 19, must be used, as shown in Fig. 2. It will also be observed in this same figure that the buckets swing loosely upon pivots, thus keeping the skins always in a perpendicular position, and that the rods always maintain their position in the loop of the buckets until they come to the delivery-point, when the tripping action (shown in Fig. 4) comes into effect. As shown, each bucket center has a projecting lip 20. This lip as it passes out of the compartment comes in contact with the spring-pawl 21, which engages it. The revolving of the sprocket-wheel then causes the bucket to turn over, thus causing rod 14 and its load of skins to drop. The bucket then moves on beyond the action of the pawl and, resuming its upright position, passes on to the feed end again. This whole operation is an independent one. The skins when dropped at the delivery end

are properly colored; but they are in a hard brittle condition from the action of the heat, and it is customary to soften them. This is usually done by wetting the pelts by hand with a sponge dipped in water and placing them in piles to absorb it. It is part of my invention to do away with this separate labor and to soften the pelts in the same continuous process as coloring them. This I accomplish by erecting immediately adjoining the drying-compartment 1 a steam-compartment 22, having connection therewith through the opening 23. The endless chain 12 after passing under sprocket-wheel 18 enters the steaming-compartment by passing under sprocket-wheel 24 and then rises its full height, passing over sprocket-wheel 25, down to 26, and so on, as shown, until it leaves the steaming-compartment at sprocket-wheel 27. Here its buckets engage with the pawl, as shown in Fig. 4, and the load of skins is dropped. The chain enters the compartment again, passing over sprocket-wheel 28, down under sprocket-wheel 29, and so back through both compartments to its place of beginning. The steam-compartment is supplied with steam through the valve 30 and pipe with outlets 31. A partition 32 is erected just before the opening 23 between the compartments to prevent the steam passing freely into the coloring-oven or the heat entering the steam-compartment. The endless chain 12 is actuated by a pair of tapered cone-pulleys 33, driven by the tight and loose pulleys 34 by a belt from any convenient line of shafting. The tapered cone-pulleys are belted together by a belt 35, and shifting the belt from one end of the cone toward the other end gives any desired rate of speed to the chain and consequent exposure of the skins to the action of the heat. The belt is shifted by means of a cord or light chain passing over suitable pulleys to an attendant at any required distance or position. The driven cone-pulley communicates by its shaft with a gear-wheel 36, which meshes with a gear on an upright shaft 37, having at its other end a worm 38, meshing with the worm-wheel 39 on the end of the driving-shaft 40, running the length of both compartments and having placed at intervals along it gear-wheels 41, which mesh with gear-wheels 42 on the ends of the upper shafts of each vertical pair of sprocket-wheels, thus insuring the positive and uniform movement of the endless chain and its buckets loaded with rodded skins through both compartments.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a coloring-oven for carroted skins the combination of endless chains, buckets pivoted at intervals thereon, loops in said buckets for supporting rods on which the skins are strung, and a tongue projecting from the pivotal point of each bucket for engaging a device at the point of delivery by which they are automatically turned over and the rods dropped substantially as described and shown.

2. In an apparatus for coloring carroted skins the combination of a compartment, an open receptacle for fire to generate heat placed therein, means for conveying the carroted skins through said compartment whereby they are colored, a steaming-compartment adjacent, means for subjecting said colored skins to the action of steam in said adjacent steaming-compartment and means for delivering them without the compartment substantially as described and shown.

3. In a coloring-oven for carroted skins the combination of compartments, endless chains adapted to carry carroted skins passing through said compartments, cone-pulleys placed in reverse relation to each other and connected to the means for conveying the skins, and a belt connecting the cone-pulleys adapted to be shifted longitudinally thereon substantially as described and shown.

4. In a coloring-oven for carroted skins the combination of a compartment, shafts supporting sprocket-wheels arranged therein, endless chains with pivoted buckets passing over and under said sprocket-wheels, rods upon which skins are strung supported by said buckets, and a shaft arranged upon one side of the compartment communicating with the shafts upon which said sprocket-wheels are arranged to give them a uniform movement and means for actuating said shaft substantially as described and shown.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 18th day of April, 1900.

JAMES MARSHALL.

Witnesses:
E. H. ANTHONY,
L. W. BURRELL.