

No. 858,576.

PATENTED JULY 2, 1907.

T. P. COOMBS.  
WHITENING MACHINE.  
APPLICATION FILED OCT. 27, 1903.

3 SHEETS—SHEET 1.

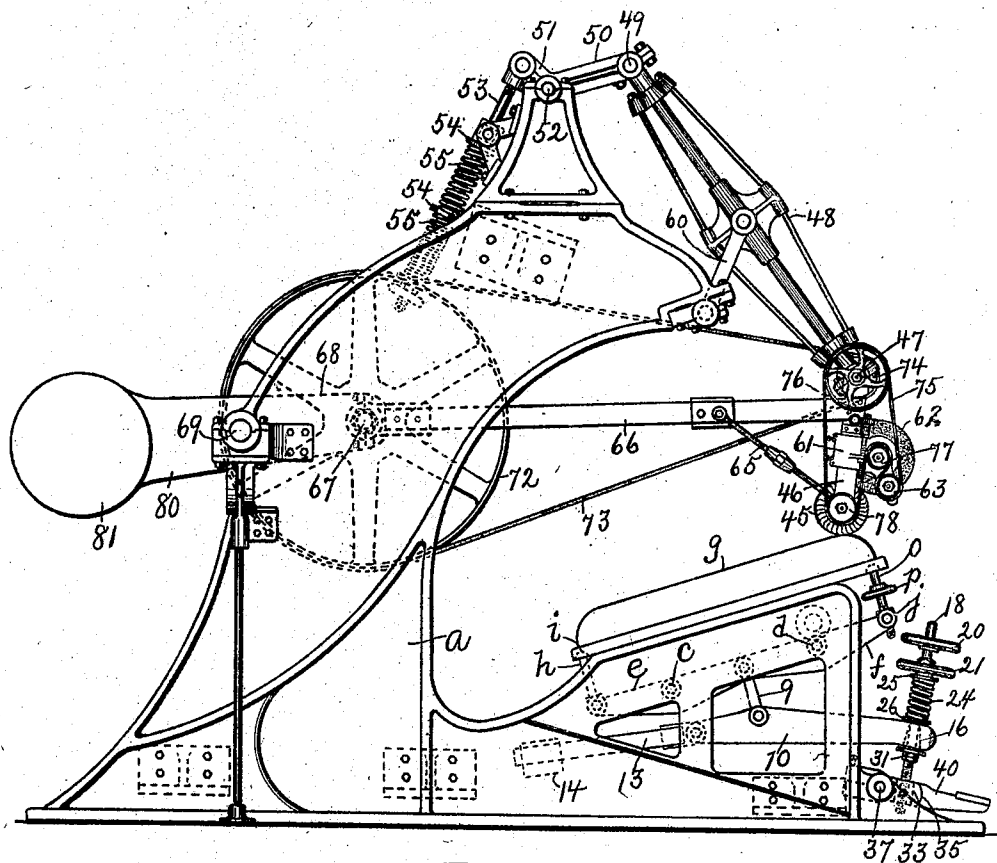


Fig. 1.

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*J. Murphy*

INVENTOR:

*Thomas P. Coombs*

BY

*Jas. H. Churchill* ATTY:

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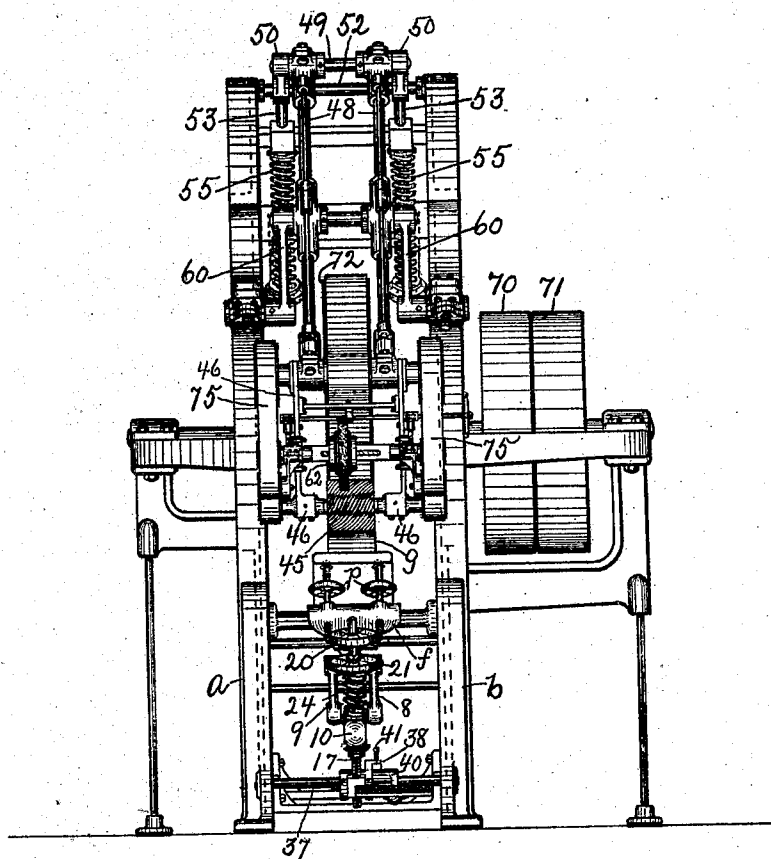


Fig. 2.

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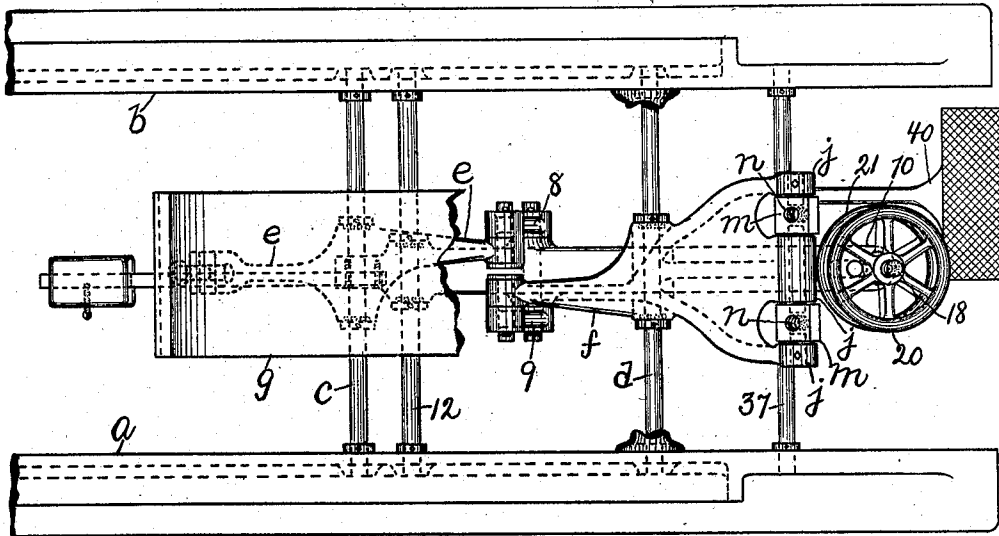


Fig. 4.

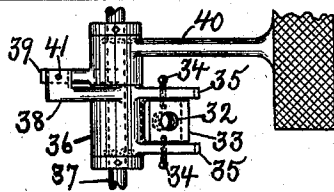


Fig. 5.

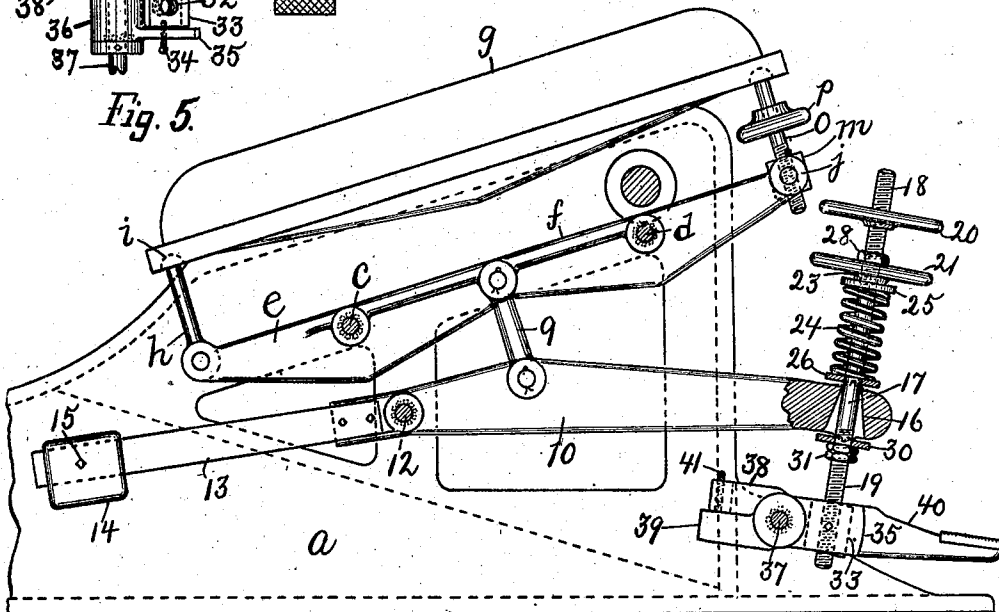


Fig. 3.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

THOMAS P. COOMBS, OF PEABODY, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE TURNER TANNING MACHINERY COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

## WHITENING-MACHINE.

No. 858,576.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed October 27, 1903. Serial No. 178,719.

*To all whom it may concern.*

Be it known that I, THOMAS P. COOMBS, a citizen of the United States, residing in Peabody, in the county of Essex and State of Massachusetts, have invented an  
5 Improvement in Whitening-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a machine for treating hides,  
10 skins and leather, and more particularly for whitening the same.

The present invention has for its object to provide a machine for the purpose specified, which can be operated with a minimum expenditure of labor on the part  
15 of the operator and which can be operated with a minimum mechanical power.

The particular features of the invention will be pointed out in the claims at the end of this specification.

20 Figure 1 is a side elevation of a machine embodying this invention. Fig. 2, a front elevation of the machine shown in Fig. 1. Fig. 3, a detail in side elevation on an enlarged scale of the bed and its supporting mechanism shown in Fig. 1. Fig. 4, a plan view of the  
25 parts shown in Fig. 3 with a portion of the bed broken away, and Fig. 5, a detail in plan of the treadle mechanism to be referred to.

Referring to the drawings *a, b*, represent side frames or uprights, which are suitably connected together to  
30 constitute the framework of the machine and between which the main operating parts are located. The side frames *a, b*, at the front of the machine support the pivots *c, d*, for two substantially straight levers *e, f*, (see Figs. 1 and 3), which are arranged in substantially  
35 a straight line and support the bed *g* for the hide or skin. The lever *e* has pivotally connected with its rear end a link *h* provided with a round head *i*, which fits into a correspondingly shaped socket in the under  
40 side of the bed, and the lever *f* at its front end is provided with lugs or projections *j*, between which are pivoted blocks *m* having threaded holes *n* for the reception of threaded rods or links *o*, which support the  
45 front end of the bed and are provided with rounded upper ends to fit correspondingly shaped sockets in the underside of said bed. The threaded rods or links *o*  
may have fast on them hand wheels *p*, by means of which the threaded rods may be turned so as to tilt or  
adjust the bed longitudinally, when so desired.

The levers *e, f*, are connected by the links 8, 9 (see  
50 Fig. 4) to the opposite sides of a lever 10 having its pivot 12 supported by the side frames, the said lever having its rear arm 13 provided with a counterweight 14 adjustably secured thereon as by the set screw 15, and having its front end provided with a hole or opening 16 through

which extends a vertically arranged rod 17, which is 55 provided at its opposite ends as shown, with screw-threads 18, 19. The rod 17 has mounted upon its threaded upper end 18 hand wheels 20, 21, the upper one 20 of which may be rendered fast on the rod 17 to turn therewith, and the lower one 21 of which is pro- 60 vided with a threaded hub 23 which engages the screw-threads 18 and between which and the lever 10 is interposed a helical spring 24, which encircles the rod 17 and bears against two washers 25, 26 loose on said rod. The wheel 21 is locked in its adjusted position by the 65 check nut 28. The rod 17 below the lever 10 is provided with a washer 30 and check nuts 31, and has its threaded end 19 extended through a threaded hole 32 (see Fig. 5) in a block 33 pivotally supported by pins or screws 34 between arms 35 on a hub or sleeve 36, loose 70 on a shaft 37 and provided with a crank or arm 38 (see Figs. 3 and 5), which projects over an arm 39 of a foot treadle 40 pivotally mounted on the shaft or rod 37. The crank or arm 38 may and preferably will be provided with a set screw 41, which extends through it and 75 engages the arm 39 of the treadle lever 40.

By reference to Figs. 3, 4 and 5, it will be seen that depression of the foot treadle 40 rocks the sleeve or hub 36 on the shaft 37 and draws down the threaded rod 17, thereby causing the spring 24 to force the front end of 80 the lever 10 downward. As the lever 10 moves downward, the links 8, 9 cause the adjacent ends of the levers *e, f* to move downward, and the outer ends of the same to move upward, thereby through the rods or links *h, o*, elevating the bed *g* into its operative position. 85 When the bed is in its elevated position, it is capable of yielding to compensate for unevenness in the work, by means of the spring 24, the tension or pressure of which can be adjusted by the hand wheel 21. When the foot treadle 40 is released, the counter- 90 weight 14 turns the lever 10 so as to lower the bed. The bed supporting and operating mechanism is sensitive in operation and requires but little effort on the part of the workman to operate it.

Another feature of the present invention consists in 95 providing a simple, efficient and easy drive for the knife cylinder 45 and one which can be operated with a minimum power.

The knife cylinder 45 is mounted in hangers 46 pivotally mounted on a shaft 47, which is journaled in the 100 lower ends of two parallel pendulums 48 hung from a pivot 49 carried by the long arms 50 of elbow levers 51, mounted on a pivot shaft 52 supported by the side frames *a, b*, the short arms of said levers having connected to them links or rods 53, which reciprocate in 105 suitable guides 54 attached to the framework of the machine and are encircled by helical springs 55, which exert a yielding pressure upon the knife cylinder.

The pendulum levers 48 are connected by the compensating links 60 with the side frames of the machine. The hangers 46 for the knife cylinder carry adjustable supports or boxes 61 for the shaft of a grinding wheel 62, and idler wheels 63. The hangers 46 have their lower ends joined by links or rods 65 to connecting rods or bars 66.

In order to obtain the desired drive above referred to, the connecting rods 66 are joined to a pin or pivot 67 carried by a crank or arm 68 on a main or driving shaft 69, which is rotated in any suitable manner, the said main shaft being shown in Fig. 2, as provided with a fast pulley 70 and with a loose pulley 71. The pin or pivot 67 has mounted on it a substantially large driving wheel 72, which is connected by the belt 73 with a pulley 74 on the shaft 47 carried by the pendulums, which shaft is connected with the knife cylinder and with the grinding wheel 62, by belts 75 passed about pulleys 76 on the opposite ends of the shaft 47, under the idler pulleys 63, over pulleys 77 on the shaft of the grinding wheel 62 and under pulleys 78 on the shaft of the knife cylinder.

The main shaft 69 is provided with a crank or arm 80 having attached to it a weight 81 to counterbalance the weight of the pulley 72. The levers *e, f*, 10 and the sleeve 36 and foot treadle 40 may be mounted upon ball bearings 82 to still further reduce friction to be overcome by the workman, when the bed *g* is elevated.

The operation of the machine herein shown may be briefly described as follows. The hide or skin to be treated is laid upon the bed *g* in its lowered position and is brought into engagement with the cutting cylinder 45 by the operator depressing the foot treadle. The cutting cylinder is moved backward over the bed in contact with the hide or skin and is moved forward out of contact with the hide or skin, by the revolution of the crank shaft. The cutting cylinder 45 is driven by the belts 75 from the shaft 47, which is rotated by the belt 73, motion to which is imparted by the pulley 72 which is rotated on the pin 67 by the rotation of the crank 68 and its shaft 69.

#### Claim.

1. In a machine of the character described, in combination, a work-supporting bed, a spring actuated lever, levers for supporting said bed interposed between said spring

actuated lever and said bed, means for connecting one of said bed supporting levers with said spring actuated lever, separate means for connecting the other bed supporting lever with said spring actuated lever, a spring to engage said spring actuated lever, a substantially vertical rod encircled by said spring and extended loosely through the spring actuated lever, a pivoted block connected with said rod, a sleeve or hub to which said block is pivoted, and a foot treadle co-operating with said sleeve, substantially as described.

2. In a machine of the character described, in combination, a work supporting bed, a spring actuated lever, levers for supporting said bed interposed between said spring actuated lever and said bed, means for connecting one of said bed supporting levers with said spring actuated lever, separate means for connecting the other bed supporting lever with said spring actuated lever, a foot treadle, and a spring operated by said foot treadle to actuate said spring actuated lever, substantially as described.

3. In a machine of the character described, in combination, a work supporting bed, a spring actuated lever, mechanism connecting said lever with said bed and interposed between the same, a substantially vertical rod extended loosely through said lever, a spring encircling said rod and acting on said lever, a foot treadle, and means for operatively connecting said foot treadle with said rod, substantially as described.

4. In a machine of the character described, in combination, a work supporting bed, substantially straight levers pivoted intermediate their ends and arranged substantially parallel with said bed, means interposed between said levers and bed for supporting the bed upon said levers, links connected to the adjacent ends of said levers, a lever to which said links are connected, a yielding medium acting on the upper side of said lever, a substantially vertical rod extended loosely through the lever acted upon by the yielding medium, and a foot treadle operatively connected with said rod below the lever through which said rod is extended, substantially as described.

5. In a machine of the character described, in combination, a vertically movable work supporting bed, a lever for raising the same, a foot treadle, a rocking sleeve engaged by said treadle and provided with arms, a block pivoted between said arms, a substantially vertical rod connected with said block and extended up through said lever, a yielding medium on said rod above said lever, and means on said rod for regulating the pressure of the yielding medium on said lever, substantially as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS P. COOMBS.

Witnesses:

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A. M. WILSON.