C. R. KEYS.

WRINGER FOR USE IN TANNERIES.

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1,126,782.

Patented Feb. 2, 1915.

FIG. 1.

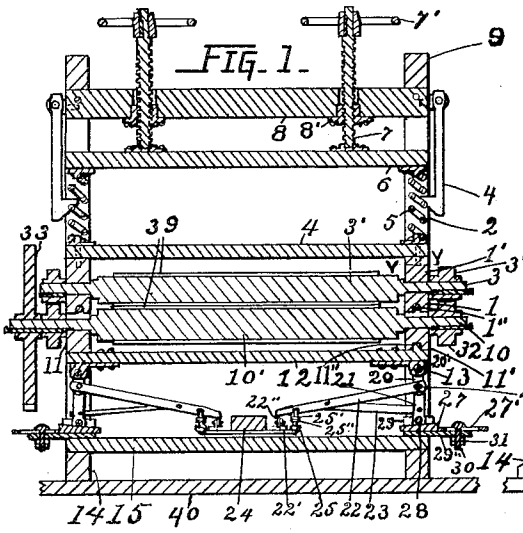


FIG. 2.

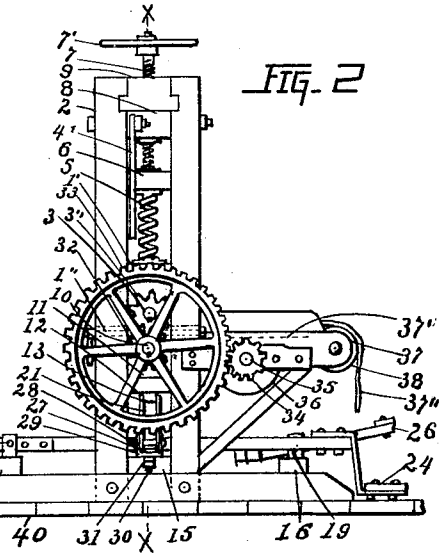


FIG. 3.

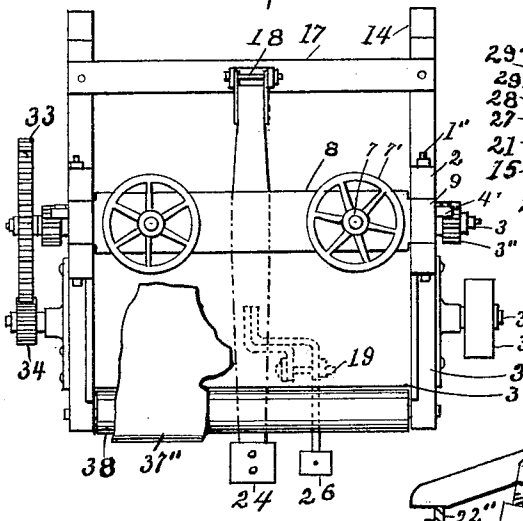


FIG. 4.

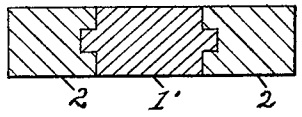


FIG. 5.

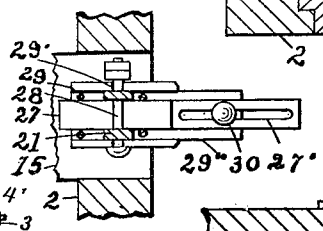
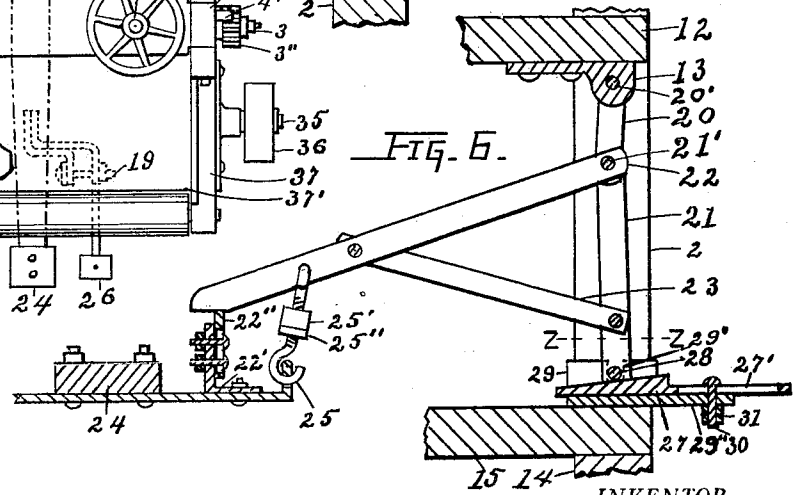


FIG. 6.



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WRINGER FOR USE IN TANNERIES.

1,126,782. Specification of Letters Patent. Patented Feb. 2, 1915.

Application filed April 10, 1914. Serial No. 830,912.

To all whom it may concern:

Be it known that I, CARLOS R. KEYS, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Wringers for Use in Tanneries, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in that class of wringers that are used for pressing liquids from sheet material in general, such as hides, leather, fabric, and the like, and particularly that class of wringers which are designed for use in tanneries; and the objects of my improvements are, first; to provide a simple, substantial and durable wringer of this class, of such construction, that bolsters or pads of fabric, felt, or the like, may readily and quickly be placed upon, and as quickly and easily be removed from the rolls of said wringer, second; to provide treadle operated lifting means, whereby the lower roll of said wringer is instantly lifted into contact with the upper roll by mechanism that is extremely simple and substantial, third; to provide stopping means whereby the thus lifted roll is stopped and detachably held, at the proper point of its travel, fourth; to provide releasing means, whereby said lifting means is instantly released for separating said rolls, and thereby adding an element of safety for the machine, and operator, and for liberating and shifting said pads. I attain these objects by the mechanism illustrated in the accompanying drawings, in which:—

Figure 1 is longitudinal section on the line X X, seen in Fig. 2, looking toward the right. Fig. 2 is an end elevation. Fig. 3 is a top plan. Fig. 4 is an enlarged horizontal section, on the line Y Y, seen in Fig. 1, showing details of the cap guiding means. Fig. 5 is an enlarged horizontal section, on the line Z Z, seen in Fig. 6, looking downward. Fig. 6 is an enlarged section, similar to Fig. 1, of the toggle mechanism.

Two sets of guiding, lifting, adjusting, and stopping means are used, one set for each of the two ends, respectively of said rolls, and since each of said sets of parts are alike in their construction and operation, a description of one set is deemed sufficient.

Referring to Figs. 1 and 2, upper box 1, (provided with cap 1′,) is supported by bolt 1″. Said box is thus supported between uprights 2, while said cap is slidably guided by said uprights, as seen in Fig. 4. Upper roll shaft 3 is rotatably mounted in said upper box and has upper roll 3′ secured thereon. Said shaft has spur gear 3″ secured on the end thereof. The end of bolster 4 is slidably guided between said uprights and rests upon box cap 1′. Said bolster is pressed downward by spring 5, which is compressed by bolsters 6, forced down by tension screw 7, provided with hand wheel 7′ secured on the upper end thereof. Said screw is screwed through nut 8′ secured on the bottom surface of top girder 8. The ends of all of the described bolsters are slidably guided between uprights 2, while the end of said girder is rigidly held between uprights 2, by bolt 8″. Hook 4′ has its upper end pivotally mounted on one end of girder 8 and its lower end povided with a sloped faced hook thereon, adapted to support one end of said bolsters.

Bottom roll 10′ is secured on bottom shaft 10, rotatably mounted in the uncapped bottom box 11, which latter is slidably guided between uprights 2. Said bottom box is mounted on the end of bottom bolster 12, slidably guided between said uprights. Said end of bottom bolster 12 has toggle connection 13 secured on the bottom surface thereof. The lower ends of uprights 2 are securely mounted in transverse sills 14, which latter are connected by longitudinal girder 15, the ends of which are secured between the lower end portions of said uprights. The ends of treadle sills 16 and 17 are secured respectively on the front and rear ends of transverse sills 14. Treadle pivot 18 is mounted on rear treadle sill 17, while release treadle pivot 19 is mounted on front treadle sill 16. The upper end of toggle link 20 is pivotally connected at 20′ with toggle connection 13, while the lower end of said link is connected by bolt 21′, with the upper end of toggle bar 21, which latter is provided with toggle arm 22, brace connected with said bar, by arm brace 23. The free end of said arm is adjustably link connected with the central portion of treadle 24, by hook link 25, adjusted as to length by turn buckle 25′, secured in place by lock nut 25″. The rear end of said treadle is mounted on pivot 18. Said treadle carries toggle stops 22′ secured thereon and adapted to limit the

downward movement of the inner end of toggle arm 22. Said stop has the slotted extension 22″, adjustably bolted thereon for adjusting the height of said stop.

The central portion of release treadle 26 is pivotally mounted on pivot 19. The inner end portion of said release treadle projects beneath the free end portion of treadle 24, while the outer end portion of said release treadle is situated at one side of the free extremity of said treadle 24, see Fig. 3. The lower end of toggle bars 21 are pivotally mounted on wedge 27, by bolt 28, passed through the lower ends of said bars and resting on said wedge. The ends of said bolt pass through slots 29′, formed in the sides of wedge box 29, for holding said bolt in place. Said box is secured on the end of girder 15.

Said wedge 27 is slidably mounted in said box and is adjustably secured at any desired point therein, by bolt 30, passed through slot 27′ (formed through the outer end portion of said wedge,) and through the apertured extension 29″, of the bottom of box 29. Said bolt is secured in place, by nut and lock nut 31. Lower roll shaft 10 is provided with spur gear 32, secured on the end thereof, and in engagement with spur gear 3″. Said lower shaft has drive gear 33 secured on the extremity thereof, said drive gear being in engagement with drive pinion 34, secured on one end of drive shaft 35, provided with drive pulley 36, secured on the opposite end thereof. Said drive shaft is rotatably mounted in table sides 37, which latter support the stationary table 37′, seen best in Fig. 3. Said table is adapted to support sheet material 37″ to be fed between said rolls. Table roller 38 is rotatably mounted in the outer ends of table sides 37, for movably supporting said sheet material, such as hides, leather, fabric and the like, while the same is passing thereover. The preferably fabric bolsters 39, form cushions for the surfaces of rolls 3′ and 10′.

In operation of the wringer, the operator adjusts springs 5 and wedges 27, in such manner as the thickness of material 37″ may require. Said operator then places sheet material 37″ in the position shown, then places one foot on treadle 24 and moves the same from its raised position, not shown, to the position seen in Fig. 2, and thereby raises lower roll 10′, into contact with upper roll 3′. This also brings spur gear 32 into engagement with spur gear 3″, said operator having previously applied power to pulley 36, by devices which form no part of my invention, and are therefore neither shown nor described. He then manually moves said sheet material toward the described rolls, until the inner edge thereof passes between the same, after which he manually straightens and guides the edges of said material, until all of it has passed through between said rolls, thereby pressing such liquid from said material, as may have been held by the same. When said operator moves the free end of treadle 24 downward, (as previously described,) the downward movement of the free end of toggle arm 22 is stopped by toggle extension 22″, which had been so previously adjusted that arm 22 is thereby stopped with pivot 21′ slightly inside of alinement with pivots 20′ and 28, for thereby detachably holding the described toggle lifting means and the thereby lifted roll 10′, in the position shown. It will be understood, that the weight of said roll and pressure thereon of upper roll 3′, so act upon the arm 22, that its free end thereafter, (while in this position,) presses upon said stop extension 22″, which in turn, presses the free end portion of treadle 24 downward, until its free extremity is stopped by floor 40, seen best in Fig. 2. When, for any reason, said operator wishes to lower the roll 10′, he places his foot, (which had previously been removed from treadle 24,) on release treadle 26 and presses the outer end thereof downward. This raises the opposite end of said treadle, and thereby lifts the free end portion of treadle 24, which lifts treadle stop 22′ and its extension 22″, which latter lifts the free end of toggle arm 22, until pivot 21′ is outside of alinement with pivots 20′ and 28, after which, the weight of roll 10′, pressing downward upon said toggle lifting means, causes the free end of arm 22 to move upward, thereby lifting the free end portion of treadle 24 from the position shown, with the free ends of arms 22 stopped against bolster 12. This last action of the parts, moves spur gear 33 from engagement with spur gear 3″, and since said releasing mechanism is operated by parts as described, the same can be done instantly when occasion requires, such as the safety of the operator, entangled material, and the like, or upon many occasions, when material is not being fed, as described. When desired, the operator removes the power from pulley 36, by reversing the before mentioned movement of said unshown parts.

Fabric bolsters 39 are removed from rolls 10′ and 3′, in the following manner, and new bolsters are placed thereon as hereinafter described. Said operator unscrews the tension from springs 5 and removes the latter from between bolsters 4 and 6, upon which the last mentioned bolster gravitates onto hooks 4′, suspended thereby. He then lifts bolster 4 and thereby raises bolster 6 from said hooks, until the latter are thereby forced apart and said bolster 4 is thus raised above hooked ends of said hooks, upon which said hooks gravitate to the position shown, with said bolster supported thereon, and

thereabove, supporting said bolster 6. Caps 1′ are secured to bolster 4 and are lifted thereby. Said operator then removes gears 32 and 3″ from the right end of their respective shafts, after which he has an assistant, (not shown,) place one end of a piece of tubing on the right end of upper roll shaft 3. Said assistant then lifts said tube and thereby lifts the right end of roll 3′. Said operator then manually slides the upper one of bolsters 39 from said roll onto said tube. By reversing the operation, a new bolster 39 is placed on said roll 3′, after which the said end of its shaft 3, is lowered into box 1, and said tube is removed therefrom. Said assistant now places one end of said tube upon the right end of lower roll shaft 10, and thereby lifts the right end of roll 10′, upon which said operator lifts and removes box 11′ from the end of bolster 12, and from between uprights 2. Said operator then manually slides the lower one of bolsters 39 from said lower roll, onto said tube, and replaces the same with a new one, by repeating the previously described operations. Said operator then replaces box 11′ and lowers said end of shaft 10 into said box. He then unhooks and replaces bolster 4 into the position shown, lifts bolster 6 and replaces springs 5; after which he applies tension to said springs, by turning screws 7; upon which the wringer is again ready for use. In actual practice, while the wringer is in operation, with roll 10′ raised, as described, the pads, or bolsters 39, from various causes, creep, or move longitudinally on their respective rolls. When such movement needs correction, said operator instantly lowers the lower roll 10′, by application of release treadle 26, thus releasing said pads or bolsters 39, and manually slides said bolsters, for centering the same, on their respective rolls. When for any reason, said operator temporarily stops using the described wringer, he lowers said bottom roll, thereby disengaging gear 32 from gear 3″, thus stopping upper roll 3′, and liberating lower roll 10′ from all pressure, which latter, thereafter idly rotates; thus avoiding the major portion of the friction and wear and tear, involved in running the wringers now generally in use.

I am aware that a pair of rolls, having felt pads thereon, are old in machines of this character; but in all such old machines, of which I am aware, a great amount of time and labor is involved in clearing the end of the bottom roll, by removing a large number of parts of said old machines; thus inducing the operator of such, to defer changing the pads and to tolerate the inferior work caused by such delay. My removable box 11′ provides ready facility for clearing the end of bottom roll 10′.

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

1. In a wringer, a frame comprising uprights, a top girder and a bottom girder whereby the tops and bottoms of said uprights are respectively girded together; transverse sills whereby said frame is supported; an operating treadle sill and a release treadle sill mounted on said transverse sills; a top roll; a bottom roll; mounting means between said uprights wherein said rolls are rotatably mounted; a bottom bolster having its ends slidably guided between said uprights the said mounting means for said bottom roll being carried on the ends of said bottom bolster; a toggle connection secured on the bottom surface of each end of said bottom bolster; jointed toggles pivotally connected at their upper ends respectively with said connections; toggle adjusting means secured on each end of said bottom girder whereon the lower ends of said toggles are pivotally mounted; an operating treadle having one of its ends pivotally mounted on the center of said operating treadle sill and its free end adapted to be manually moved downward; toggle arms for said toggles; link connections whereby the central portion of said operating treadle is connected with said arms; link adjusting means whereby the lengths of said connections are adjusted; and a release treadle the central portion of which is pivotally mounted on said release treadle sill one end of said release treadle projecting beneath the free end portion of said operating treadle while its other end is adapted to be manually moved downward.

2. In a wringer, a top roll; a bottom roll; roll mounting means wherein said rolls are rotatably mounted; a jointed toggle for lifting each end of said bottom roll; an arm for each one of said toggles; an operating treadle for drawing the free ends of said arms downward; connecting means whereby the central portion of said treadle is connected with the free ends of said arms; stopping means mounted on said operating treadle for limiting downward movement of the free ends of said arms; adjusting means on said stopping means whereby the latter are adjusted for stopping said ends of said arms at different points of their downward travel, said stopping means being adapted to be lifted against said ends of said arms for recover movement thereof; and a release treadle whereby the central portion of said operating treadle and the thereon carried arm stops are lifted.

3. In a wringer, a rotatably mounted top roll; a rotatably mounted bottom roll; a jointed toggle for lifting and detachably holding said bottom roll in contact with said top roll; a frame for said wringer; a bottom girder forming a part of said frame;

a wedge box secured on one end of said girder said box having slots formed in the sides thereof and an apertured extension formed therewith; a wedge slidably mounted in said box said wedge having a slot formed through the outer end portion thereof; a bolt passed through said slot and through said apertured extension; securing means whereby said bolt is secured for holding said wedge in slidably adjusted positions; a pivot bolt passed through the slots in said box and through the lower end portion of said jointed toggle said bolt resting on said wedge; and toggle operating means connected with said toggle whereby the latter is operated for lifting said bottom roll.

In testimony whereof I affix my signature in the presence of two witnesses.

CARLOS R. KEYS.

Witnesses:
LOYD SUSSMAN,
LUKE E. HINTON.