R. F. WHITNEY.

HIDE WORKING MACHINE.

APPLICATION FILED FEB. 20, 1913.

1,068,032.

Patented July 22, 1913.

3 SHEETS—SHEET 1.

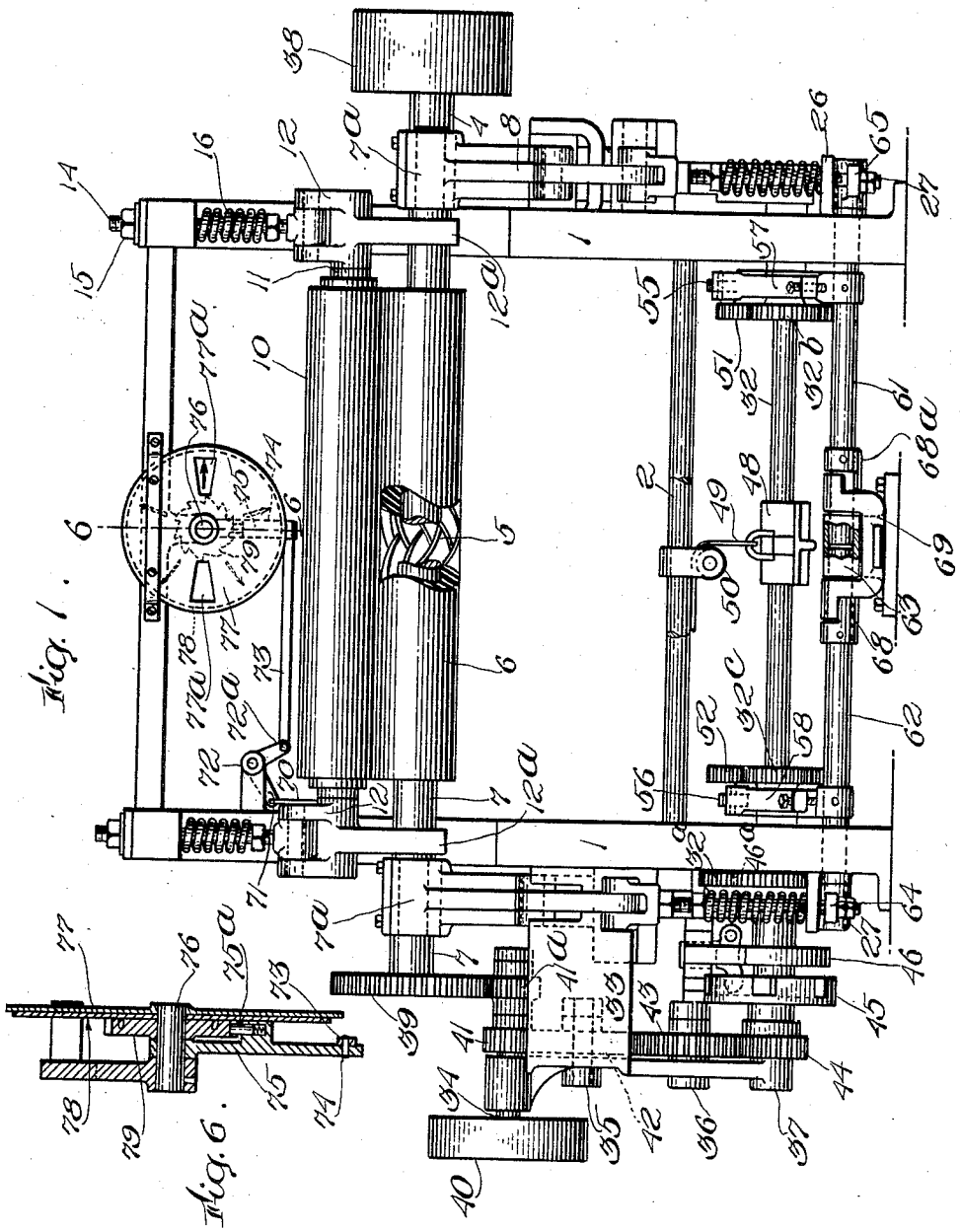


Fig. 1.

Fig. 6.

Witnesses:
A. H. McGlinchey.
Ethel W. Fraser

Inventor:
Robert F. Whitney,
by Ralph W. Fraser
Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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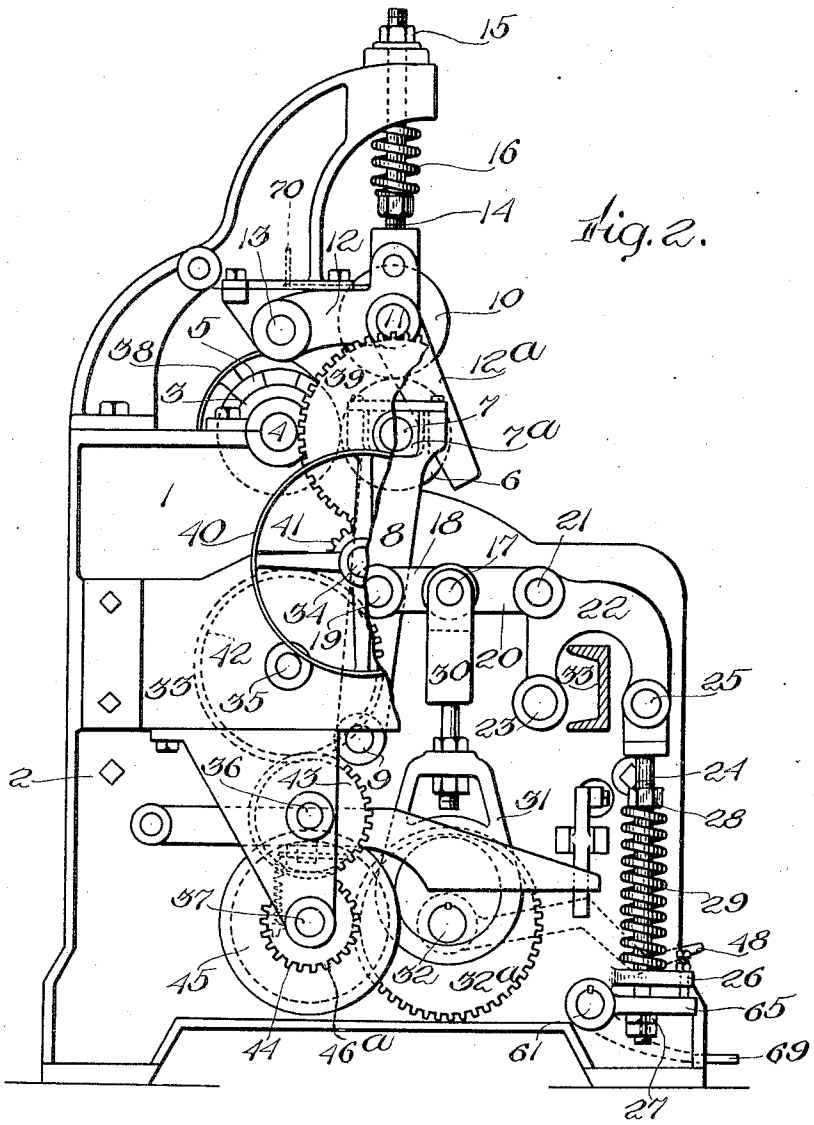


Fig. 2.

Witnesses:
A. H. McGlinchey.
Ethel W. Fagon

Inventor:
Robert F. Whitney,
by Ralph W. Foster
Atty.

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3 SHEETS—SHEET 3.

Fig. 3.

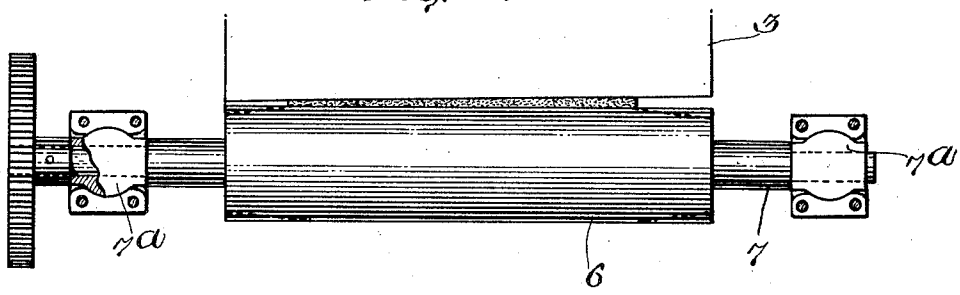


Fig. 4.

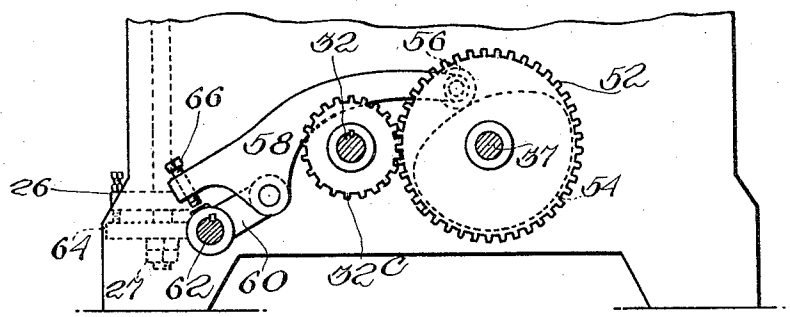
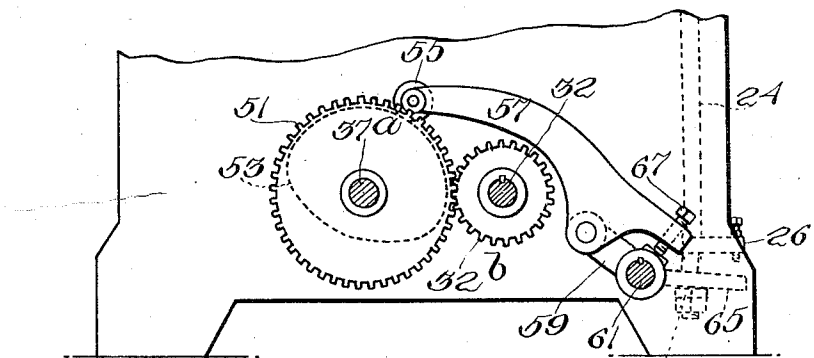


Fig. 5.



Witnesses:
A. H. McGlinchey
Ethel W. Hapon

Inventor:
Robert F. Whitney,
by Ralph W. Foster Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ROBERT F. WHITNEY, OF WINCHESTER, MASSACHUSETTS.

HIDE-WORKING MACHINE.

1,068,032. Specification of Letters Patent. Patented July 22, 1913.

Application filed February 20, 1913. Serial No. 749,566.

To all whom it may concern:

Be it known that I, ROBERT F. WHITNEY, a citizen of the United States, and a resident of Winchester, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Hide-Working Machines, of which the following is a specification.

This invention relates to machines for fleshing and working hides, more particularly sides, and its object is to provide automatic means for moving the bed roll to and from the work roll and feed roll in such manner as to obtain an angular relation, as distinguished from a parallel relation, between the rolls, when in operation, corresponding to the natural taper in the thickness of the sides to be operated on; and independent means for restoring the parallel relation of said rolls.

The invention is illustrated by the accompanying drawings in which:

Figure 1 is a front elevation of the machine; Fig. 2 is a side elevation of the machine looking from the left of Fig. 1; Fig. 3 is an elevation of the bed roll; Figs. 4 and 5 are detailed views of the improved attachment; Fig. 6 is a section on the line 6—6 Fig. 1.

The main frame of the machine comprises side frames 1 connected by tie girts 2. The work roll 3 is mounted on shaft 4 journaled in bearings in the frame and provided with operating blades 5. The bed roll 6 is mounted on shaft 7 journaled in boxes 7^a in swinging arms 8 pivoted at 9 to the frame. The feed roll 10 is mounted on shaft 11 journaled in bearings in rocker arms 12 pivoted at 13 to the frame, to which arms 12 are pivoted rods 14 which extend through the upper part of the frame in loose engagement therewith and are furnished on their upper ends with nuts 15 which engage said frame and limit the downward travel of said rods. Upon these rods 14 are adjustably arranged springs 16 which provide cushions for said feed roll 10. The cam arms 12^a are fixed to rocker arms 12, or cast therewith, and engage shaft 7 of bed roll 6, serving to raise feed roll 10, as bed roll 6 moves outwardly, and enabling feed roll 10 and springs 16 to assist the toggles in moving the bed roll inwardly. The swinging arms 8 are moved about their pivots 9 by toggles 17, comprising links 18 pivoted at 19 to said swinging arms 8 and links 20 pivoted at 21 to rocker arms 22 pivoted in turn at 23 to the frame. The rods 24 are pivoted at 25 to said rocker arms 22 and extend downwardly through and in loose engagement with lugs 26 on the frame and on their lower ends are screwed nuts 27. These rods 24 are threaded near their upper ends and furnished with nuts 28, between which and said lugs 26 are adjustably arranged springs 29 adapted to be compressed by the downward movement of said rods and to react to raise them, thus providing cushions for bed roll 6. Eccentric rods 30 are pivoted at their upper ends to toggles 17 and to the lower ends of said rods 30 are adjustably attached eccentrics 31 fixed on shaft 32 mounted in the frame and furnished with gear 32^a. From the left of the frame is projected the gear box, or bracket, 33, whereon are mounted the rotary shaft 34 and the studs 35, 36. The fixed shaft 37 is mounted in said bracket and frame.

The work roll shaft 4 has secured to its right end pulley 38 whereby it is independently driven; the bed roll shaft 7 has secured to its left end gear 39; the pulley 40 and pinions 41 and 41^a are fixedly mounted on shaft 34; the idler 42 is mounted on stud 35; the idler 43 is mounted on stud 36.

The clutch mechanism, employed to rotate shaft 32, comprises gear 44 loosely mounted on fixed shaft 37 and fixed to driving-member 45 of the clutch, the driven-member 46 of which is loosely mounted on said shaft 37 and furnished with gear 46^a (behind gear 32^a Fig. 1 and behind gear 44 Fig. 2) which engages gear 32^a on shaft 32. The clutch mechanism is operated by treadle 48 loosely mounted on shaft 32 and connected with said mechanism by chain 49 (Fig. 1) running over sprocket 50 mounted on tie girt 2.

The machine thus far described is like those fully described in earlier patents and its operation may here be briefly described as follows: Pinions 41, 41^a are driven by pulley 40; the former, 41, through idlers 42, 43, driving gear 44 and driving-member 45 of the clutch; the latter, 41^a, driving gear 39, when the bed roll is in its operative position; feed roll 10 is driven frictionally by bed roll 6. By depressing treadle 48, the operator engages the clutch members and, through the mechanism described, operates the eccentrics; and, when the treadle is relieved of pressure, the clutch members become automatically disengaged and the ec-

centrics cease to operate, all as fully described in said earlier patents.

Heretofore in machines of this description, without the mechanism about to be described, bed roll 6, as it is carried to and away from work roll 3 and feed roll 10 by swinging arms 8, maintains a parallel relation to said work roll and feed roll.

The present invention relates to means for alternately and automatically moving the free ends of swinging arms 8 toward the front of the machine, thereby providing for moving bed roll 6, mounted in said swinging arms, into angular, rather than parallel, relation with work roll 3 and feed roll 10, thus securing between the former and the latter a tapering space, as shown in Fig. 3; and independent means for restoring the normally parallel relation of said rolls; said means and said independent means comprising the following described mechanism: gears 32^b, 32^c fixedly mounted on shaft 32 and engaging respectively gears 51, 52 loosely mounted respectively, gear 52 on shaft 37 and gear 51 on stud 37^a in the frame; cams 53, 54 fixed to said gears 51, 52, or cast therewith, and constituting tracks on which travel rollers 55, 56 mounted in the upper ends of rocker arms 57, 58 pivoted near their lower ends to arms 59, 60 fixedly mounted on shafts 61, 62 journaled in the frame and in the common journal box 63 (Fig. 1); and the arms 64, 65 likewise fixed to shafts 62, 61 and loosely engaging rods 24 between lugs 26 and nuts 27; said rocker arms 58, 57 being furnished on their lower ends with adjustable screws 66, 67 adapted to engage arms 60, 59 and thereby enable said rocker arms to slightly rotate shafts 62, 61, thereby alternately depressing rods 24 and pulling the corresponding free ends of swinging arms 8 toward the front of the machine; said shafts 61, 62 being furnished with lugs 68^a, 68 adapted to be engaged by treadle 69 mounted on said shafts 61, 62 and engaging said lugs 68^a, 68 and furnishing means for slightly rotating them. To enable bed roll 6 to be moved out of its normal parallel relation with rolls 3 and 10, as described, the ends of bed roll shaft 7 and the boxes 7^a, in which they are journaled, are made self-alining as shown in Fig. 3. As the function of the machine is to operate on sides, or half-hides, and as the two sides of a hide taper in opposite directions, when presented for operation thereon, the space between the rolls (Fig. 3) is made to taper correspondingly and alternately in opposite directions, as the machine is operated, by providing similar cams 53, 54, oppositely disposed and oppositely acting, as shown in Figs. 4 and 5.

The form and arrangement of the cams is shown in Figs. 4 and 5 wherein it appears that the rocker arms 57 and 58 are held in the position shown in Fig. 4 by the springs 29 and the intermediate mechanism described and that said rocker arms 57 and 58 are caused by the cams 53 and 54, as these are rotated, to assume the position shown in Fig. 5 thereby lowering rods 24 and compressing springs 29. As these cams are oppositely disposed and act oppositely, they alternately lower the rods 24 thereby, in the manner described, creating an angular operative relation between the bed roll and the other rolls and causing the space between them to taper alternately in opposite directions.

By means of the adjustable screws 66, 67 the cams 53, 54 may be rendered ineffective, or their effect may be regulated to secure the desired amount of taper between the rolls; while by depressing treadle 69, the operator may slightly rotate shaft 61, or shaft 62, as the case may be, thereby, through rods 24, restoring the normal parallel relation of the rolls. To provide for having the tapering space between the rolls begin at points nearer the center, rather than at the ends, thereof, as shown in Fig. 3, the bed roll may have its ends tapered as indicated in dotted lines in Fig. 3.

To indicate the direction of the taper at any operation, I provide the indicating means shown in Figs. 1, 2 and 6 and comprising link 70, connecting rocker arm 12 with bell-crank lever 71 pivoted at 72 to the frame and at 72^a to the link 73 pivoted in turn at 74 to pawl arm 75 pivoted on stud 76 in the frame and carrying spring controlled pawl 75^a; said pawl engaging and driving ratchet wheel 79 rotatably mounted on said stud 76; there being attached to said ratchet wheel and rotated therewith rotary dial 78 marked with arrows and disposed behind fixed dial 77 mounted on stud 76 and furnished with oppositely disposed slots 77^a, through which alternately may be seen one of the arrows on the rotary dial, as the latter is rotated.

I claim:

1. In a machine of the character described, in combination, a work roll and a bed roll; with automatic means for moving the bed roll into and out of angular operative relation with the work roll, leaving a space between said rolls tapering alternately in opposite directions.

2. In a machine of the character described, in combination, a work roll and a bed roll; with adjustable automatic means for moving the bed roll into and out of angular operative relation with the work roll, leaving a space between said rolls tapering alternately in opposite directions.

3. In a machine of the character described, in combination, a work roll, a feed roll and a bed roll; with automatic means

for moving the bed roll into and out of angular operative relation with the work roll and the feed roll, leaving similar spaces between the bed roll and the other rolls tapering alternately in opposite directions.

4. In a machine of the character described, in combination, a work roll, a feed roll and a bed roll; with adjustable automatic means for moving the bed roll into and out of angular operative relation with the work roll and the feed roll, leaving similar spaces between the bed roll and the other rolls tapering alternately in opposite directions.

5. In a machine of the character described, in combination, a work roll and a bed roll; with automatic means for moving the bed roll into and out of angular operative relation with the work roll, leaving a space between said rolls tapering alternately in opposite directions; and independent means for moving the bed roll out of angular into parallel operative relation with the work roll.

6. In a machine of the character described, in combination, a work roll, a feed roll and a bed roll; with automatic means for moving the bed roll into and out of angular operative relation with the work roll and the feed roll, leaving similar spaces between the bed roll and the other rolls tapering alternately in opposite directions; and independent means for moving the bed roll out of angular into parallel operative relation with the work roll and the feed roll.

7. In a machine of the character described, in combination, a work roll and a bed roll; with automatic means for moving the bed roll into and out of angular operative relation with the work roll, leaving a space between said rolls tapering alternately in opposite directions; and with means for indicating the direction of the taper.

8. In a machine of the character described, in combination, a work roll and a bed roll; with adjustable automatic means for moving the bed roll into and out of angular operative relation with the work roll, leaving a space between said rolls tapering alternately in opposite directions; and with means for indicating the direction of the taper.

9. In a machine of the character described, in combination, a work roll, a feed roll and a bed roll; with automatic means for moving the bed roll into and out of angular operative relation with the work roll and the feed roll, leaving similar spaces between the bed roll and the other rolls tapering alternately in opposite directions; and with means for indicating the direction of the taper.

10. In a machine of the character described, in combination, a work roll, a feed roll and a bed roll; with adjustable automatic means for moving the bed roll into and out of angular operative relation with the work roll and the feed roll, leaving similar spaces between the bed roll and the other rolls tapering alternately in opposite directions; and with means for indicating the direction of the taper.

11. In a machine of the character described, in combination, a work roll and a bed roll; with automatic means for moving the bed roll into and out of angular operative relation with the work roll, leaving a space between said rolls tapering alternately in opposite directions; said means comprising swinging arms carrying the bed roll; toggles pivoted to the swinging arms; spring controlled rocker arms pivoted to the toggles; cams operatively connected with the rocker arms; eccentrics operatively connected with the toggles; and clutch mechanism operatively connected with the cams and the eccentrics; together with treadle mechanism for operating the clutch.

12. In a machine of the character described, in combination, a work roll and a bed roll; with automatic means for moving the bed roll into and out of angular operative relation with the work roll, leaving a space between said rolls tapering alternately in opposite directions; said means comprising swinging arms carrying the bed roll; toggles pivoted to the swinging arms; spring controlled rocker arms pivoted to the toggles; cams adjustably operatively connected with the rocker arms; eccentrics operatively connected with the toggles; and clutch mechanism operatively connected with the cams and the eccentrics; together with treadle mechanism for operating the clutch.

13. In a machine of the character described, in combination, a work roll and a bed roll; with automatic means for moving the bed roll into and out of angular operative relation with the work roll, leaving a space between said rolls tapering alternately in opposite directions; said means comprising swinging arms carrying the bed roll; toggles pivoted to the swinging arms; spring controlled rocker arms pivoted to the toggles; cams operatively connected with the rocker arms; eccentrics operatively connected with the toggles; and clutch mechanism operatively connected with the cams and the eccentrics; together with treadle mechanism for operating the clutch; and means for indicating the direction of the taper.

14. In a machine of the character described, in combination, a work roll and a bed roll; with automatic means for moving the bed roll into and out of angular operative relation with the work roll, leaving a space between said rolls tapering alternately in opposite directions; said means compris-

ing swinging arms carrying the bed roll; toggles pivoted to the swinging arms; spring controlled rocker arms pivoted to the toggles; cams adjustably operatively connected with the rocker arms; eccentrics operatively connected with the toggles; and clutch mechanism operatively connected with the cams and the eccentrics; together with treadle mechanism for operating the clutch; and means for indicating the directions of the taper.

15. In a machine of the character described, a bed roll mounted in swinging arms; toggles pivoted to the swinging arms; spring controlled rocker arms pivoted to the toggles; cams operatively connected with the rocker arms; eccentrics operatively connected with the toggles; and clutch mechanism operatively connected with the cams and the eccentrics.

16. In a machine of the character described, a bed roll mounted in swinging arms; toggles pivoted to the swinging arms; spring controlled rocker arms pivoted to the toggles; cams adjustably operatively connected with the rocker arms; eccentrics operatively connected with the toggles; and clutch mechanism operatively connected with the cams and the eccentrics.

17. In a machine of the character described, in combination, a work roll and a bed roll; with automatic means for bringing said rolls into and out of operative relation, leaving a space between said rolls tapering alternately in opposite directions.

In testimony whereof I have affixed my signature, in presence of two witnesses.

ROBERT F. WHITNEY.

Witnesses:
CLARENCE L. NEWTON,
RALPH W. FOSTER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."