

March 1, 1938.

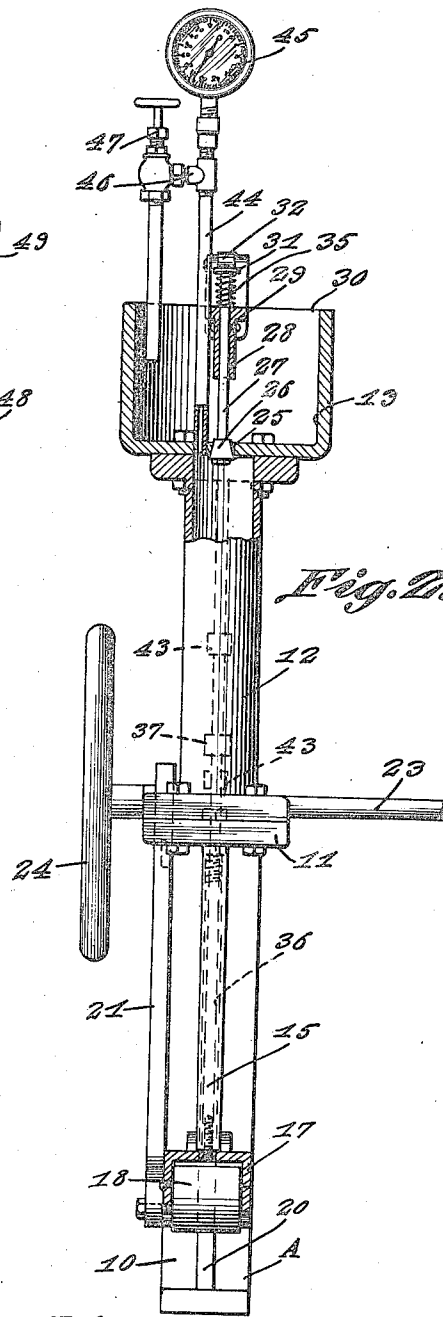
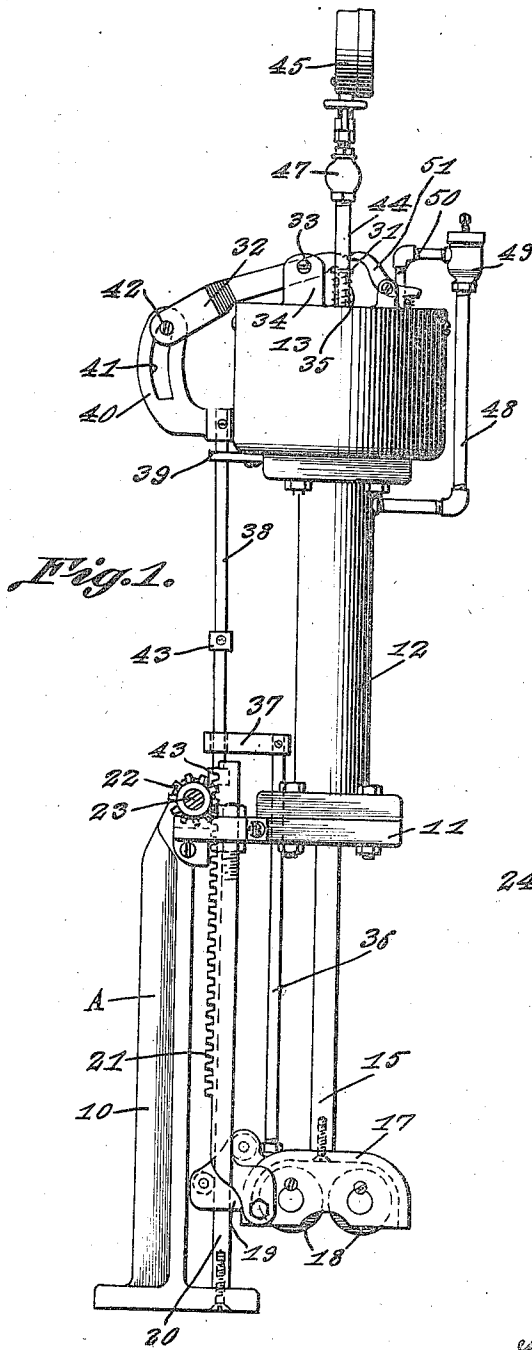
J. T. TICE

2,109,936

LAP EVENER

Filed Aug. 10, 1936.

2 Sheets-Sheet 1



John T. Tice, INVENTOR
BY *Victor J. Ensmurker.* ATTORNEYS

March 1, 1938.

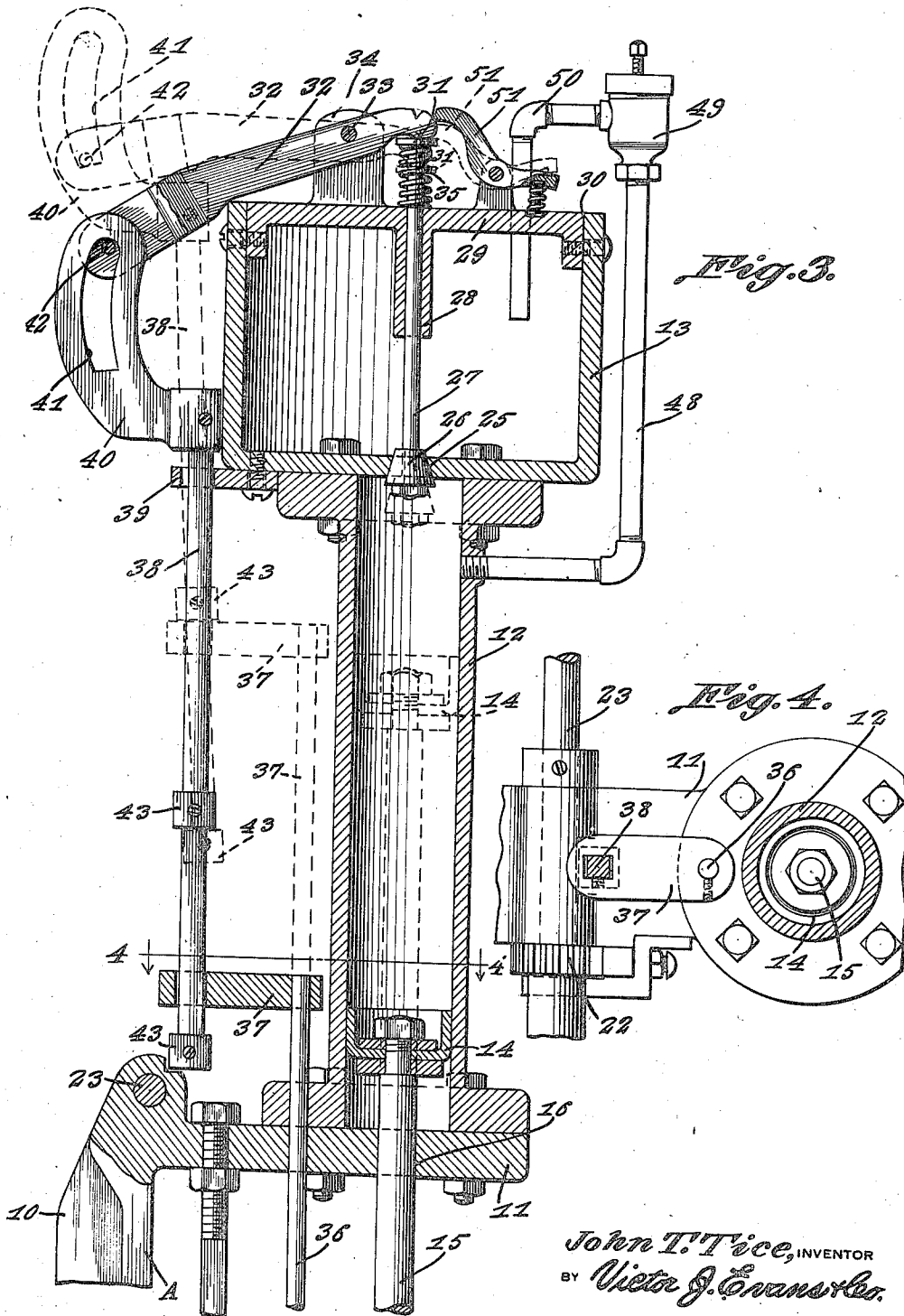
J. T. TICE

2,109,936

LAP EVENER

Filed Aug. 10, 1936

2 Sheets-Sheet 2



John T. Tice, INVENTOR
BY Victor J. Evans, Esq.
ATTORNEYS

UNITED STATES PATENT OFFICE

2,109,936

LAP EVENER

John T. Tice, Atlanta, Ga., assignor of one-half
to Robert Lee Trimble, Trimble, Ga.

Application August 10, 1936, Serial No. 95,257

5 Claims. (Cl. 19—162)

The invention relates to lap eveners for use in picker machines in textile manufacture and more especially to fluid pressure controlled lap eveners.

5 The primary object of the invention is the provision of an appliance of this character, wherein a lap in a picker machine is placed under pressure during the building of such lap so as to make the same uniform and avoiding splitting thereof as well as eliminating thick and thin areas therein.

10 Another object of the invention is the provision of an appliance of this character, wherein a lap will be wound evenly and without jerking action so that the material will be the same in weight during the building thereof per yard and at the same time increasing production and said material will be devoid of thick and thin areas.

15 A further object of the invention is the provision of an appliance of this character, wherein the same is automatic in the working thereof and is relieved of attention by an operator and assures the building of a lap evenly and without looseness in the formation of the same.

20 A still further object of the invention is the provision of an appliance of this character, which is simple in its construction, thoroughly reliable and effective in its operation, convenient for application to a picker machine, automatic in the working thereof, durable, and inexpensive to manufacture and install.

25 With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention and pointed out in the claims hereunto appended.

In the accompanying drawings:

30 Figure 1 is a side elevation of a lap evener constructed in accordance with the invention.

Figure 2 is a front elevation partly in section.

Figure 3 is a vertical sectional view of the same.

35 Figure 4 is a sectional view on the line 4—4 of Figure 3.

40 Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, A designates generally an upright which is bolted or otherwise fixed to the picker machine, one at each side cheek thereof and is in the form of a post 10 having projected laterally therefrom close to its upper end a bearing 11 supporting a cylinder 12 which in turn supports a tank 13 containing the liquid to be used in the appliance.

Within the cylinder 12 is a piston 14, its stem 15 being guided through the bearing 11 having the opening 16 therefor, and this stem is connected at its lower end with a head 17 carrying rolls 18 suitably journaled therein for engaging a lap pin (not shown) of the picker machine. The head 17 is formed with a runner 19 engaging a guide track 20 formed on the post 10.

Pivoted to the head 17 is a rack bar 21 meshing with a rack pinion or gear 22, its shaft 23 being suitably journaled in the upright A at the upper end of the post above the bearing 11 and this shaft 23 at one end has fixed thereto a hand wheel 24 so that the said shaft can be manually turned and in this manner the head 17 raised or lowered manually.

Formed in the bottom of the tank 13 is an opening 25 establishing communication between the said tank and the cylinder 12 and this opening is formed with a valve seat for a valve 26 having its rod 27 slidably fitted in a guiding barrel 28 formed with and depending from a bridge piece 29 extending across the upper open end 30 of the tank 13 and fixed to opposite walls thereof. The rod 27 above the bridge piece 29 is formed with a circular head 31 against which is fulcrumed a rocking lever or arm 32 pivoted at 33 in a mounting 34 therefor. The rod 27 has surrounding it a coiled expansion spring 35 which is seated against the bridge piece 29 and the head 31, respectively, and is for the purpose of seating the valve 26 when relieved of pressure from the lever or arm 32 thereby shutting off communication between the cylinder 12 and the tank 13 through the opening 25.

40 Fixed to the head 17 and guided through the bearing 11 is a shift rod 36 having at its upper end an adjustably connected striker 37 in which is loosely fitted a throw rod 38 slidable in a guide eye 39 fixed to the bottom of the tank 13 at one side thereof. This rod 38 at its upper end has fixed thereto a curved link 40 provided with a curved slot 41 accommodating a slip pin 42 fixed in the outer end of the arm or lever 32 so that when the rod 38 has traveled upwardly a determined distance the lever or arm 32 will be rocked to accommodate the valve rod 27 for unseating the valve 26. The rod 38 has adjustably fitted therewith spaced abutments in the form of collars 43 with which engages the striker 37 for imparting movement to the said rod 38 when the rod 36 is traveling with the head 17.

45 Rising from the bottom of the tank 13 and opening into the cylinder 12 is a pressure gage 55

lead pipe 44 equipped with a pressure gage 45 and a pressure regulating pipe 46 equipped with a hand operated valve 47 the pipe 46 being extended downwardly into the tank for a distance thereof. The valve 47 is for the purpose of regulating the pressure gage 45 or the setting thereof for determined pounds pressure within the cylinder 12 and acting upon the piston 14 working therein.

10 Leading from the cylinder 12 is a pressure relief 48 equipped with a relief valve 49 and a pressure return pipe 50, respectively, the latter depending into the tank 13. Thus the fluid flowing into the relief pipe 48 will be returned into the tank 13 and also any fluid bled from the pressure gage pipe 44 will be delivered into the said tank in the working of the appliance.

On the bridge piece 29 is a spring set pivotal latch 51 engageable with the arm or lever 32 when the same has depressed the valve rod 27 and unseated the valve 26 thereof so as to permit the fluid within the tank 13 to flow from the latter into the cylinder 12 when returning the head 17 to a normal position in engagement with the lap pin of the picker machine after removal of the lapped material from the said machine.

It is, of course, understood that the lap builds up on the pin of the picker machine and during this building the head 17 is caused to move upwardly so that the piston 14 is raised in the cylinder 12 and the liquid or fluid in the cylinder will resist this movement of the piston so that the lap is subjected to pressure which is applied by the rolls 18. This pressure is uniform, the gage 45 having been set for a determined pressure. When the piston 14 rises within the cylinder 12 to a determined height the valve 26 is automatically opened by the striker 37 engaging an abutment 43 on the rod 38 causing the tilting of the lever or arm 32 which depresses the rod 27 of the valve 26 unseating the latter from the opening 25. Any excess pressure above that regulated by the gage 45 will be relieved through the relief valve 49 during the building of the lap and a uniformity of pressure is assured through the setting of the gage 45 as hereinbefore stated, the valve 47 regulating the pressure. The latch 51 maintains the valve 26 open until the arm or lever 32 is tripped by the striker 37 when the piston is descending in the cylinder 12 and the head 17 moving to normal position thereby enabling the filling of the cylinder 12 with fluid and when the striker 37 exerts a pull upon the arm or lever 32 the latch 51 will be tripped and the spring 35 becomes active for the closing of said valve 26 thus shutting off communication between the cylinder 12 and the tank 13 and stopping flow of fluid into the said cylinder.

60 By operating the hand wheel 24 the piston is lowered in the cylinder 12 and the head 17 brought to normal position.

The appliance can be applied to any picker machine, breaker or scratcher. It will prevent lap splitting and the occurrence of thick and thin places in the lap. It will give an average pressure without variation from the top to the bottom while the lap is being built, thus making laps more even in weight. It will make carding, spinning and weaving easier to handle and will make more production by assuring even weights at the start at the picker room.

What is claimed is:

1. An appliance of the character described 75 comprising a cylinder, a piston therein, a piston

rod connected with the piston, a head connected with the piston rod, rollers on the head for engaging a lap, a fluid supply tank having communication with the cylinder, a valve in said communication, a pressure release pipe common to the cylinder and tank and having a relief valve, means for opening the first-mentioned valve when the piston rises to a determined point within the cylinder, means latching the first-mentioned valve in open position, and a pressure regulating device common to the said cylinder and said supply tank.

2. An appliance of the character described comprising a cylinder, a piston therein, a piston rod connected with the piston, a head connected with the piston rod, rollers on the head for engaging a lap, a fluid supply tank having communication with the cylinder, a valve in said communication, a pressure release pipe common to the cylinder and tank and having a relief valve, means for opening the first-mentioned valve when the piston rises to a determined point within the cylinder, means latching the first-mentioned valve in open position, a pressure regulating device common to the said cylinder and said supply tank, and manually operated means for the lowering of the piston within the cylinder and moving the head in normal position.

3. An appliance of the character described comprising a cylinder, a piston therein, a piston rod connected with the piston, a head connected with the piston rod, rollers on the head for engaging a lap, a fluid supply tank having communication with the cylinder, a valve in said communication, a pressure release pipe common to the cylinder and tank and having a relief valve, means for opening the first-mentioned valve when the piston rises to a determined point within the cylinder, means latching the first-mentioned valve in open position, a pressure regulating device common to the said cylinder and said supply tank, manually operated means for the lowering of the piston within the cylinder and moving the head in normal position, and means for closing the first-mentioned valve when unlatched.

4. An appliance of the character described comprising a cylinder, a piston therein, a piston rod connected with the piston, a head connected with the piston rod, rollers on the head for engaging a lap, a fluid supply tank having communication with the cylinder, a valve in said communication, a pressure release pipe common to the cylinder and tank and having a relief valve, means for opening the first-mentioned valve when the piston rises to a determined point within the cylinder, means latching the first-mentioned valve in open position, a pressure regulating device common to the said cylinder and said supply tank, manually operated means for the lowering of the piston within the cylinder and moving the head in normal position, means for closing the first-mentioned valve when unlatched, and means for guiding the head on movement of the piston.

5. An appliance of the character described comprising a cylinder, a piston therein, a piston rod connected with the piston, a head connected with the piston rod, rollers on the head for engaging a lap, a fluid supply tank having communication with the cylinder, a valve in said communication, a pressure release pipe common to the cylinder and tank and having a relief valve, means for opening the first-mentioned

valve when the piston rises to a determined point
within the cylinder, means latching the first-
mentioned valve in open position, a pressure reg-
ulating device common to the said cylinder and
said supply tank, manually operated means for
5 the lowering of the piston within the cylinder

and moving the head in normal position, means
for closing the first-mentioned valve when un-
latched, means for guiding the head on move-
ment of the piston, and means for supporting the
appliance in working position.

JOHN T. TICE.

5