

Dec. 18, 1951

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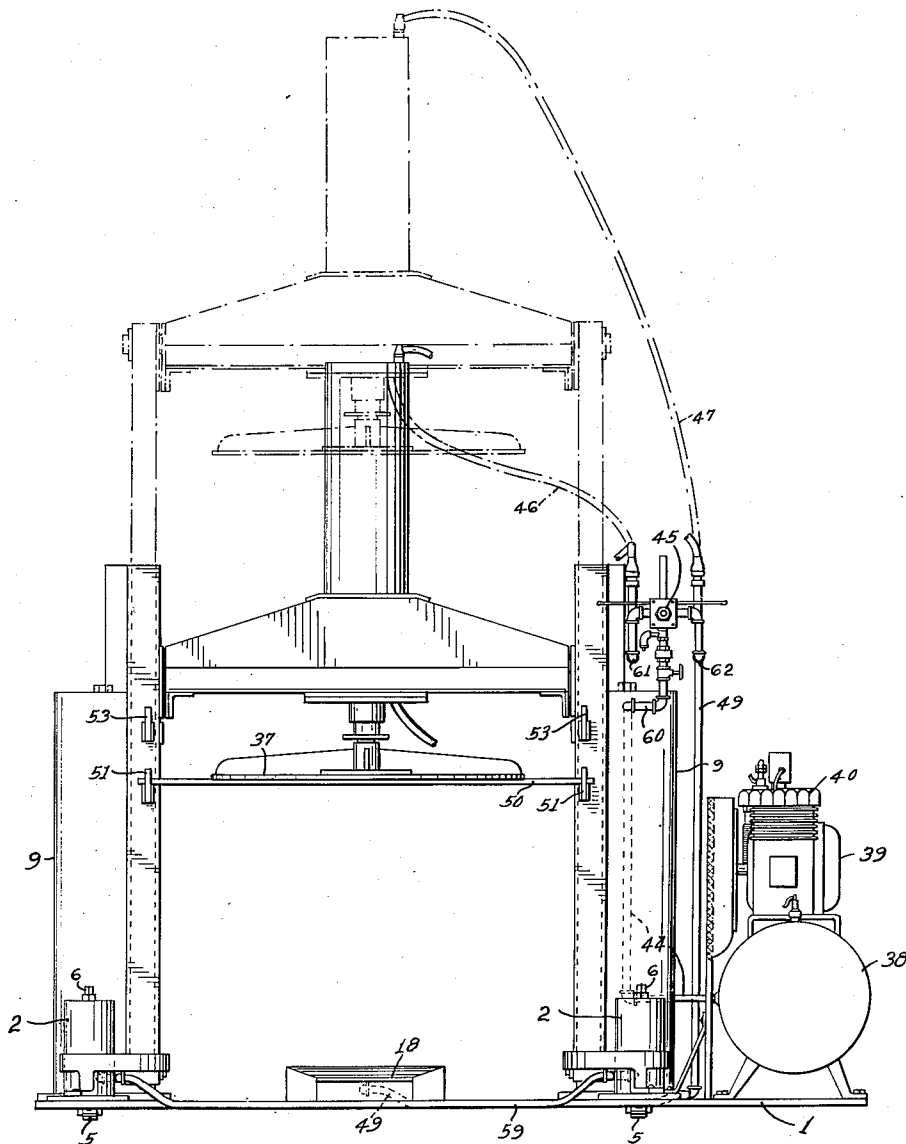
2,579,176

PRESS

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3 Sheets-Sheet 1

FIG. 1



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FIG. 2

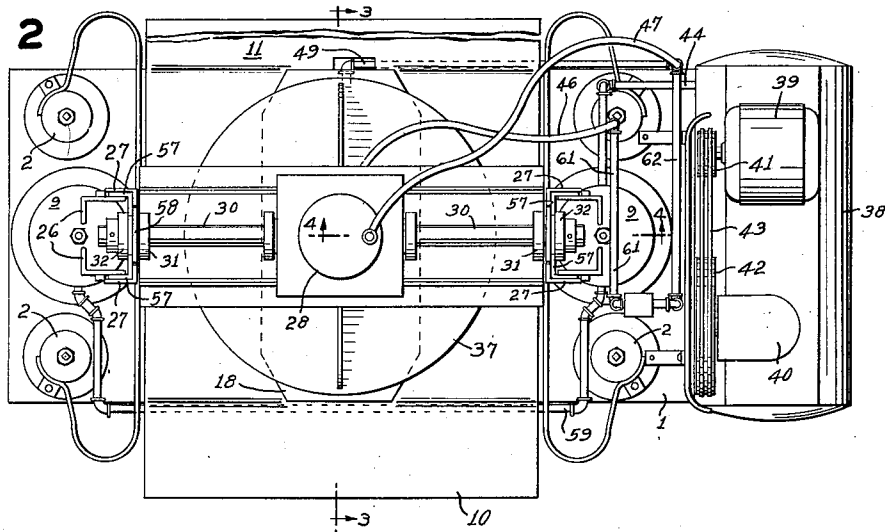
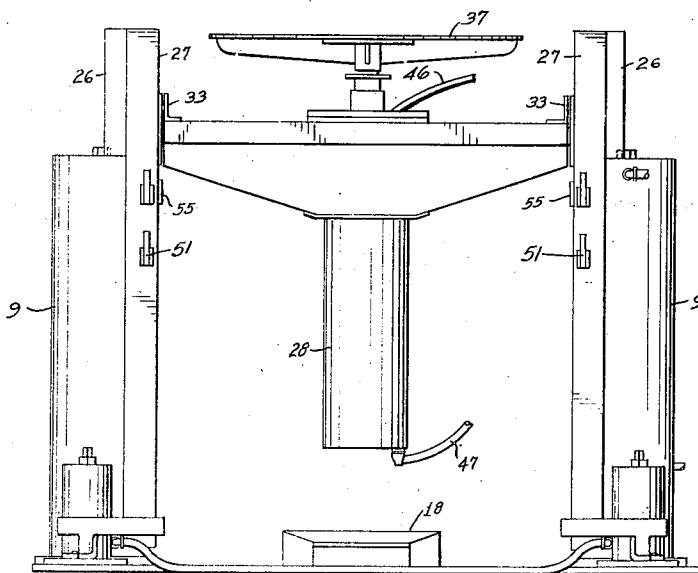


FIG. 6



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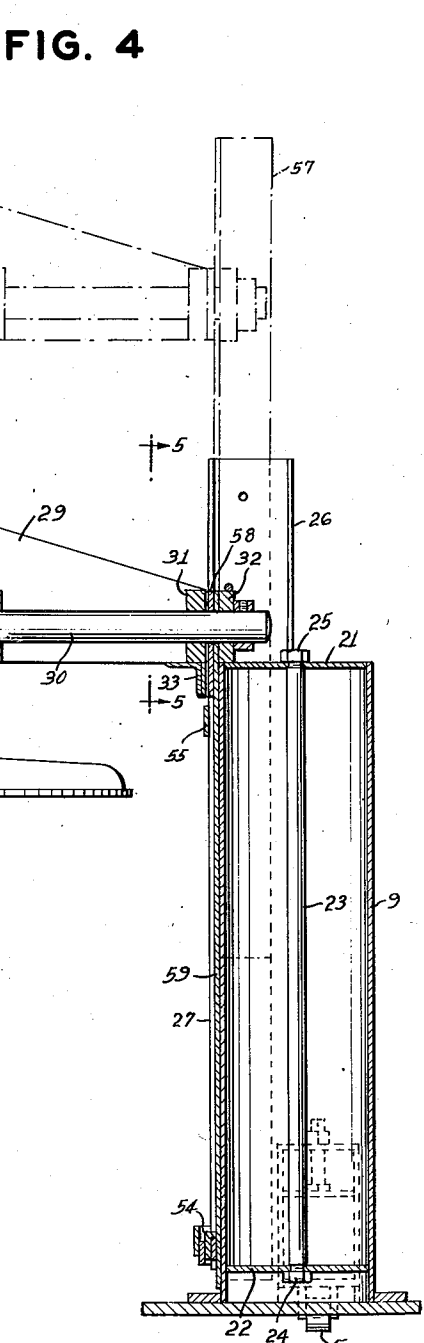
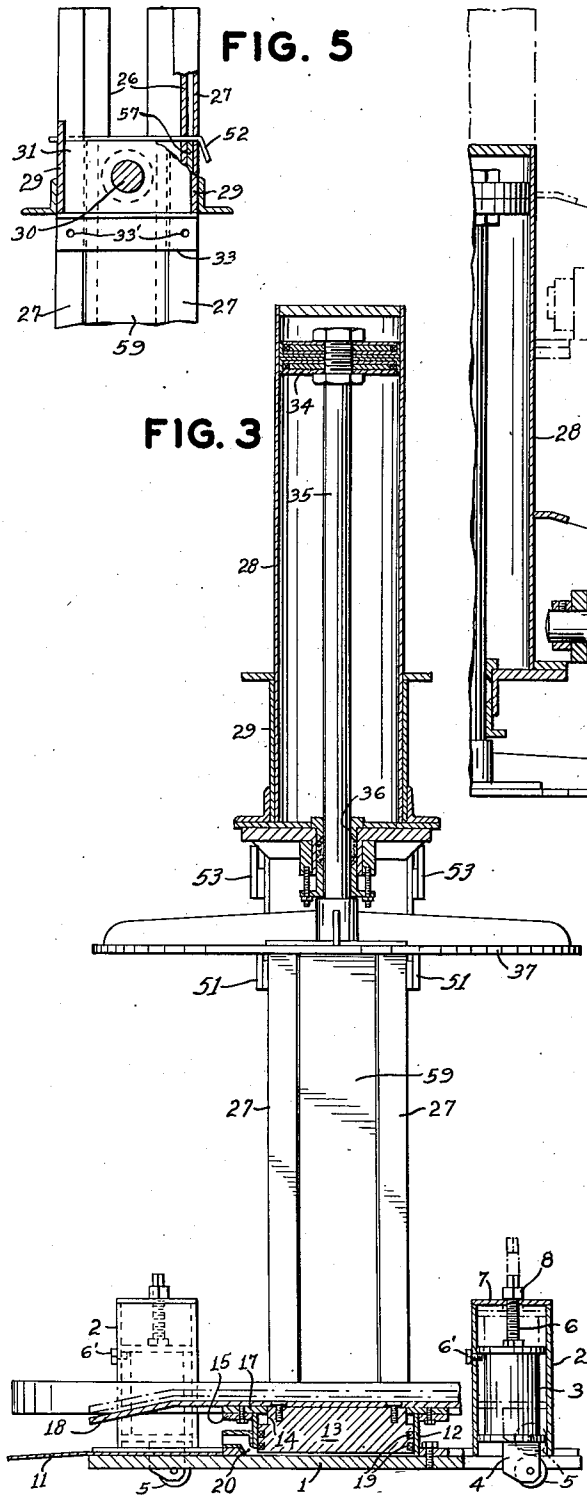


FIG. 5

FIG. 4

FIG. 3

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UNITED STATES PATENT OFFICE

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PRESS

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5 Claims. (Cl. 100—56)

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This invention relates to presses and more particularly to a portable press which, while capable of other uses, is particularly useful in loading tobacco into hogsheads.

In the tobacco industry, farm cured tobacco is sold, generally at auctions, and this tobacco is loaded into hogsheads in tobacco prize-ries, shipped to the tobacco manufacturing plant, re-dried, again loaded into hogsheads, and stored for ageing. There are a large number of small tobacco prize-ries throughout the tobacco grow-ing area that have need for a press for loading tobacco into hogsheads for a relatively short pe-riod of time during each year. There is thus a real need for a portable press that may be used at a prize-ry for the time needed and then trans-ferred to another place for further use.

In the present invention I provide such appa-ratus consisting of a platform with a pair of cyl-inders arranged thereon and spaced from each other a distance slightly greater than the diameter of a hogshead. These cylinders serve as storage chambers for compressed air and as supports for lift guides. A centrally arranged cylinder is sup-ported by a pair of movable members mounted in the lift guides. This cylinder is provided with a piston and with connections for supplying air or other fluid to either end of the cylinder. The piston rod extends from the bottom of this cyl-inder and is connected to a pressure plate of a proper size to enter a hogshead and apply pres-sure to the tobacco contained therein.

The invention further comprises means for sup-ported the pressure plate from the lift guides to prevent its downward movement. Pressure may then be applied to the top of the piston and, with downward movement of the piston pre-vented, the air cylinder may be raised to its op-erative position. The piston may then be ele-vated in the cylinder by applying pressure to the under side to place the apparatus in condition for operation. With the air cylinder then sup-ported in its raised position, the tobacco may be compressed by placing the hogshead of tobacco on the platform and introducing air or other fluid into the top of the cylinder to force the pressure plate downwardly into the hogshead.

In the accompanying drawings I have shown one embodiment of the invention. In this show-ing:

Fig. 1 is a front elevation of the apparatus showing the air cylinder in lowered position in full lines and in raised position in dotted lines;

Fig. 2 is a plan view;

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Fig. 3 is a vertical, sectional view on line 3—3 of Fig. 2;

Fig. 4 is a similar view on line 4—4 of Fig. 2;

Fig. 5 is a detailed, sectional view on line 5—5

of Fig. 4; and

Fig. 6 is a front elevation showing the air cylinder in lowered position and swung through an arc of 180° to reduce the overall height of the press to facilitate transportation on a truck and through doorways of buildings.

Referring to the drawings, the reference num-eral 1 designates a bed plate on which the ap-paratus is mounted to facilitate its movement from place to place. As shown, a plurality of cyl-inders 2, four in number, are mounted on the bed plate and these cylinders carry supports 3 from which brackets 4 depend. The brackets 4 form supports for casters 5 on which the apparatus may be rolled into position. Threaded rods 6 are connected to supports 3 by ball joint connections. The threaded rods 6 extend through openings in the tops 7 of the cylinders and on which nuts 8 are mounted. Thus, by rotating the threaded rods, the supports 3 and the casters can be moved from the operative position, shown in Figs. 1 and 3 of the drawings, to the dotted line inoperative position, shown in Fig. 3 of the drawings, after the press is in position. The casters and sup-ports may also turn, independently of the rods, when the apparatus is being moved on the casters. Downward movement of the support is limited by the stop 6' mounted in the cylinder wall.

A pair of cylinders 9, which serve as storage compartments for compressed air and also as supports for the lift guides, are mounted on the platform spaced a suitable distance from each other slightly greater than the diameter of a hogshead. At the front and back of the bed plate I provide plates 10 and 11 which serve as ramps to permit a dolly on which a hogshead is mount-ed to be rolled on and off the bed plate. On the bed plate located centrally between the cylinders 9 I also provide a lift for the hogshead to take the weight of the hogshead off the dolly during the compressing of the tobacco. As shown, this lift comprises a cylinder 12 which is of a height sufficient to permit the dolly to be rolled over it. A piston 13 is mounted in the cylinder, the piston being provided with a reduced upper portion 14. A plate 15 is secured adjacent the top of the cylinder and this plate supports a ring 17 which projects into the cylinder to be engaged by the upper face of the bottom larger portion of the piston when the piston is moved upwardly to limit its upward movement. Plate 18, which is se-

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cured to the upper face of the piston, serves as the support for the dolly. The piston may be provided with suitable packing rings 19 and the cylinder is provided with a port 20 for inlet of compressed air and discharge of air, the inlet and exhaust being controlled by suitable valve mechanism (not shown). Piston 13 is of such size that engagement of plate 18 and ring 17, when the piston is lowered, provides a space between the bottom of the cylinder and the bed plate 1 into which air may be fed to raise the piston when desired.

Cylinders 9 are provided with upper closure plates 21 and lower closure plates 22 to form an air-tight container for compressed air. The two ends of the cylinder are connected to each other by a stay bolt 23 having nuts 24 and 25 on its opposite ends. A pair of angle irons 27 are mounted on each cylinder extending from a point near the bottom and projecting slightly above the top. From the top of the cylinders pairs of angle irons 26 extend upwardly and cooperate with angle irons 27 to form guides for the movable cylinder supports (see Fig. 2). The supports for the movable air cylinder comprise two pairs of angle irons 57, to each of which a plate 59 is welded or otherwise secured. These supports are guided in their movement from the full line position shown in Fig. 4 to the dotted line position by the angle irons 26 and 27 and form the support for the movable cylinder and its associated parts.

As shown, cylinder 28 is mounted in a hood 29 and this hood carries a pair of pivot supports 30 secured to the movable supporting members. Plates 31 are welded to the hood and plates 32 are welded to the movable supports and are provided with openings through which the pivots extend. A plate 58 is arranged between the plates 31 and 32 and serves as a washer. Angle irons 33 are secured to the lower side of the hood and are provided with openings 33' to be aligned with openings in the angle iron supports to lock the mechanism by means of pins in the operative position shown in Figs. 1, 3 and 4 of the drawings. When the apparatus is to be transported from one place to another, these pins are removed and the upper cylinder swung to the position shown in Fig. 6 of the drawings.

As shown (see Fig. 3) a piston 34 is arranged in the cylinder 28 and this piston is provided with a piston rod 35 passing through a suitable packing gland 36 in the lower head of the cylinder. A pressure plate 37 is secured to the end of the piston rod.

On the bed plate to one side of the cylinders 9 there is provided a tank 38 for compressed air and adjacent this tank, illustrated as just above it, I provide a motor 39 and a pump 40. A pulley 41 is mounted on the motor shaft and a pulley 42 is mounted on the pump shaft. A belt 43 passes over these pulleys to actuate the pump when the motor is connected to a source of current. Suitable piping is arranged between the compressed air tank 38 and the cylinders 9 to maintain pressure in those cylinders equal to that in the tank and therefore provide additional storage space for compressed air and also to the two ends of cylinder 28 and to cylinder 12. As shown, a pipe 44 extends from the compressed air tank 38 and enters the adjacent cylinder 9 near its upper end. The two cylinders are connected by a pipe 59 extending across the front of the apparatus at the bottom (see Figs. 1 and 2). The same pressure thus exists in the two cylinders and the tank 38. A pipe 60 extends from one of the cylinders to a

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valve 45. Pipes 61 and 62, extending from valve 45 are connected to flexible connections 46 and 47 extending to opposite ends of the movable cylinder. A connection 49 extends from pipe 62 to the inlet 20 of the cylinder 12.

When the apparatus is in the inoperative position, shown in Fig. 6 of the drawings, and it is desired to place it in use, it is necessary first to move the cylinder 28 and its associated parts through an angle of 180° to bring it to the full line position, shown in Fig. 1 of the drawings. With the parts in this position, the cylinder 28 must first be raised to the dotted line position shown in Fig. 1 of the drawings. This is accomplished by placing a pair of bars 50 beneath the pressure plate 37, these bars being supported in brackets 51 carried by the stationary angle iron guides. If air or other fluid is then admitted to the top of the cylinder through the conduit 47, the piston being held against downward movement, pressure in the cylinder raises the cylinder toward the dotted line position shown in Fig. 1 of the drawings. The stroke of the piston in the apparatus illustrated is not sufficient to raise the cylinder to the point desired. After the cylinder has moved the full stroke of the piston, the parts are retained in that position by inserting pins in aligned openings in the stationary and movable angle irons. As shown, a pin 52 (see Fig. 5) may be inserted in such openings and the bars 50 removed from beneath the pressure plate 37. With the pressure relieved in the upper end of the cylinder, the pressure plate and the piston can then be moved upwardly and the supporting bars 50 placed in a second set of brackets 53 arranged on the stationary angle irons. The same procedure is then repeated to raise the cylinder 28 to its uppermost position.

After the cylinder has been fully raised, the pins may be placed in registering openings in the guides and the movable supports to retain the parts in this position. When the cylinder 28 has been raised to its position in this manner, the piston is at the bottom of the cylinder and before starting the compressing operation, air is admitted to the bottom of the cylinder through conduit 46 to raise the piston in the cylinder. A hogshead containing tobacco is then placed on the platform and the piston 13 moved upwardly by delivering air to the cylinder 12. This takes the weight of the hogshead off the dolly rollers when the tobacco is compressed in the hogshead. At the same time, air is also delivered to the top of the cylinder 28 through flexible conduit 47 which forces the pressure plate 37 into the hogshead to compress the tobacco. The operation is repeated until the tobacco has been compressed to the desired amount and the head of the hogshead is then placed in position.

The movable angle irons which carry the upper cylinder are provided with plates 54 which engage stops 55 carried by the stationary angle irons when the cylinder 28 is raised to prevent the movable cylinder from being raised to a point where the movable angle irons would come out of the guides. The member 54 is mounted in such manner that it may be removed if the apparatus is to be disassembled at any time for repairs.

I claim:

1. Apparatus of the character described comprising an air cylinder, a piston mounted in the cylinder, a piston rod connected to the piston, a pressure plate carried by the piston rod, means for delivering fluid to opposite ends of the cylinder, a pair of vertically movable angle iron mem-

bers supporting the cylinder, a pair of angle iron members forming guides in which the vertically movable angle iron members are mounted, a base plate on which said guides are mounted, and rollers carried by the base plate to permit the apparatus to be moved from place to place, the rollers being capable of being moved to an inoperative position to permit the base plate to rest upon a support.

2. Apparatus of the character described comprising a cylinder, a piston mounted in the cylinder, a piston rod connected to the piston, a pressure plate carried by the piston rod, a base plate, a pair of cylinders for storage of fluid mounted on the base plate, means for delivering fluid from one of said cylinders to either end of said first mentioned cylinder, a pair of angle iron members mounted on the storage cylinders and forming guides, and a pair of vertically movable angle iron members mounted in the guides and connected to the first mentioned cylinder.

3. A device of the character described comprising a pair of vertically disposed guides, vertically movable members mounted in the guides, a hood pivotally mounted in the vertically movable members and movable with said members, a cylinder carried by the hood, the hood being capable of moving through an arc of 180° to arrange the cylinder above or below it, means for delivering fluid to either end of the cylinder, a piston in the cylinder, a piston rod connected to the piston, and a pressure plate carried by the piston rod.

4. Apparatus of the character described comprising an air cylinder, a piston mounted in the cylinder, a piston rod connected to the piston, a pressure plate carried by the piston rod, means for delivering fluid to opposite ends of the cylinder, a pair of vertically movable angle iron mem-

bers supporting the cylinder, a pair of angle iron members forming guides in which the vertically movable angle iron members are mounted, and means for supporting the pressure plate from the guides to permit the cylinder and the vertically movable angle iron members to be elevated by introducing fluid into the top of the cylinder.

5. Apparatus of the character described comprising a cylinder, a piston mounted in the cylinder, a piston rod connected to the piston, a pressure plate carried by the piston rod, a base plate, a pair of cylinders for storage of fluid mounted on the base plate, means for delivering fluid from one of said cylinders to either end of said first mentioned cylinder, a pair of vertical guides mounted on the storage cylinders, and a pair of vertically movable members mounted in the guides and connected to the first mentioned cylinder.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
D. 129,899	Demkier	Oct. 7, 1941
317,427	Tweddell	May 5, 1885
812,228	Von Philp	Feb. 13, 1906
897,048	Astfalck	Aug. 25, 1908
966,191	Gamewell	Aug. 2, 1910
1,091,558	Broderick	Mar. 31, 1914
1,481,838	Henry	Jan. 29, 1924
2,148,310	Talen	Feb. 21, 1939
2,217,025	Muller	Oct. 8, 1940
2,240,926	Dinzl	May 6, 1941
2,451,302	Peters	Oct. 12, 1948
2,512,246	Fishburne	June 20, 1950