W. S. BELLOWS.

MOTOR FOR BALING PRESSES.

APPLICATION FILED MAY 21, 1913.

1,150,574. Patented Aug. 17, 1915.

Fig. 2.

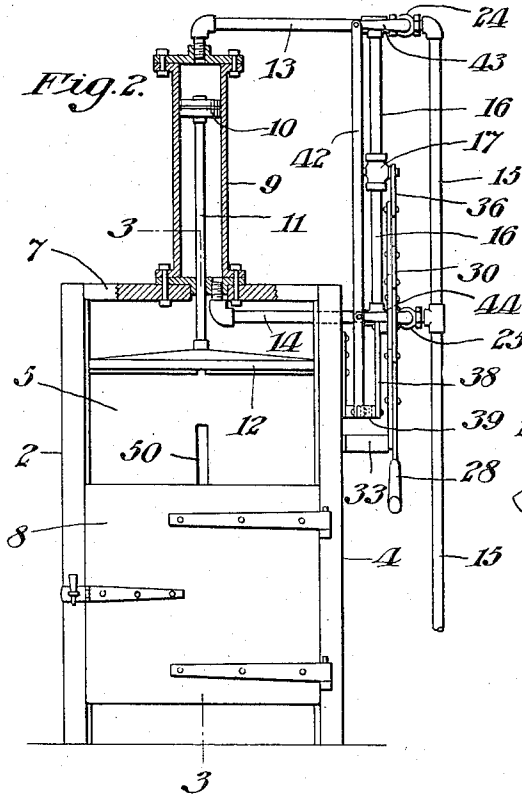


Fig. 1.

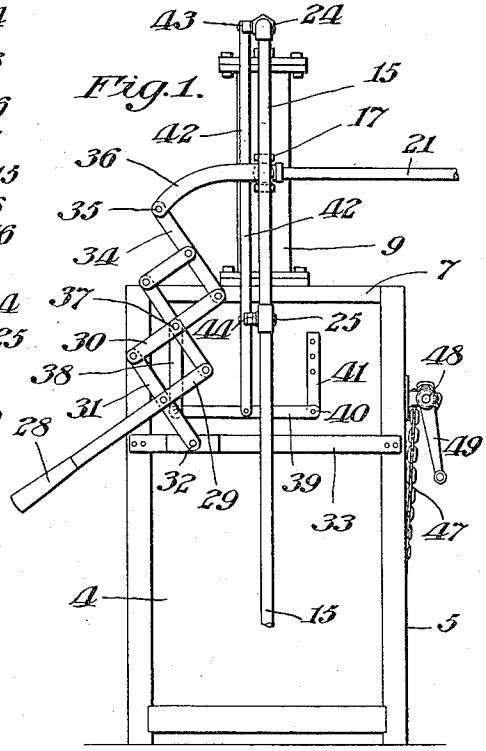


Fig. 3.

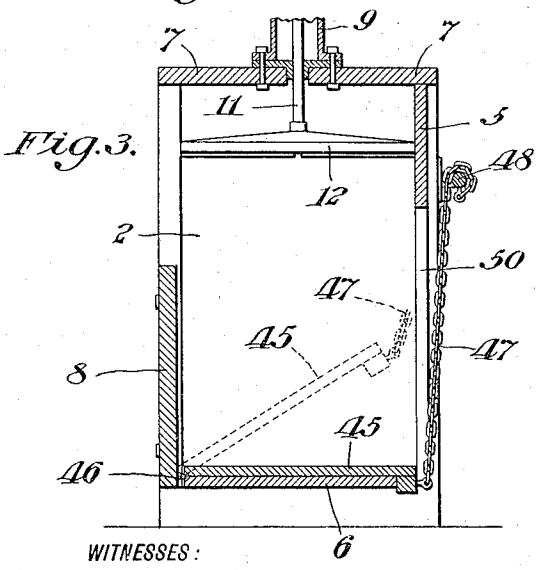


Fig. 4.

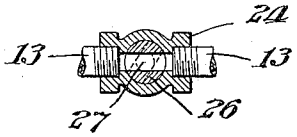
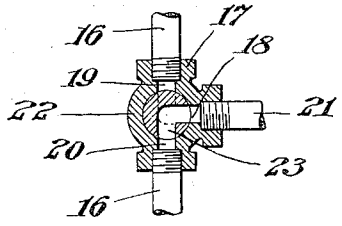


Fig. 5.



WITNESSES:

R. Schleicher.

G. P. Sharkey.

INVENTOR

Winfield S. Bellows,

BY

A. V. Brown

ATTORNEY.

UNITED STATES PATENT OFFICE.

WINFIELD S. BELLOWS, OF STEELTON, PENNSYLVANIA.

MOTOR FOR BALING-PRESSES.

1,150,574. Specification of Letters Patent. Patented Aug. 17, 1915.

Application filed May 21, 1913. Serial No. 768,941.

To all whom it may concern:

Be it known that I, WINFIELD S. BELLOWS, a citizen of the United States, residing at Steelton, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Motors for Baling-Presses, of which the following is a specification.

The object of my invention is to provide a fluid pressure motor for baling presses of novel, simple and efficient construction, having provision whereby a plunger may be operated by pressure-fluid and whereby the pressure-fluid may be controlled by a novel arrangement of valves and operating devices therefor.

The invention consists in the novel construction and combinations of parts hereinafter fully described and particularly claimed.

In the accompanying drawings, illustrating my invention: Figure 1, is a side elevation of my improved baling press. Fig. 2, is a front elevation thereof, partly in section. Fig. 3, is a vertical section, on line 3—3 of Fig. 2. Fig. 4, is a section through one of the outlet valves. Fig. 5, is a section through the inlet valve.

Referring to the drawings, the casing of the baler comprises side walls 2 and 4, a rear wall 5, a bottom 6, a top 7 and a door 8 closing the lower portion of the front of the casing. The paper or other material to be baled is adapted to be compressed within this casing.

Mounted centrally upon the top 7 of the casing and secured thereto is a vertically-arranged cylinder 9 adapted to receive pressure fluid. Fitted to the inner wall of the cylinder 9 is a piston 10 provided with a downwardly-extending rod 11 which carries a head or plunger 12 on the lower end thereof. This plunger 12 is adapted to move vertically within the casing, when the piston 10 is raised and lowered to compress the material to be baled within the lower portion of the casing.

Communicating with the upper end of the cylinder 9 is a horizontally-extending pipe 13, and communicating with the lower end of the cylinder 9 is a pipe 14 which also extends horizontally and parallel to the pipe 13. The outer ends of the pipes 13 and 14 communicate with a vertical outlet or waste pipe 15, the lower end of which extends below the lower pipe 14 and may lead to any suitable point of waste discharge.

The horizontal pipes 13 and 14 are also connected by a vertical pipe 16 which communicates therewith for the supply of the pressure fluid to the cylinder 9. The central portion of the vertical pipe 16 is interrupted by a valve 17 having three ports 18, 19 and 20. The port 18 communicates with a pipe 21 which leads from a suitable source of pressure fluid supply, and the ports 19 and 20 communicate with the upper and lower portions, respectively, of the pipe 16. The valve 17 has a turning plug 22 provided with a passageway 23 which may be turned to establish communication between the ports 18 and 19 to direct the pressure fluid through the upper portion of the pipe 16 and the pipe 13 to the top of the cylinder 9, and which may be turned to establish communication between the ports 18 and 20 to direct the pressure fluid through the lower portion of the pipe 16 and the pipe 14 to the bottom of the cylinder 9.

The upper and lower pipes 13 and 14 are interrupted by valves 24 and 25, respectively, between the pipes 15 and 16. These valves 24 and 25 are adapted to be operated to open and close the pipes 13 and 14 outwardly of the pipe 16, and each valve is provided with a turning plug 26, having a passageway 27 therein, as shown in Fig. 4.

The valves 17, 24 and 25 are operated by a common handle or lever 28 which forms an extension of one of the lower arms 29 of a lazy tongs 30. The other lower arm 31 of the lazy tongs 30 is pivoted at 32 to a bar 33 which is secured to the side 4 of the casing. The outer end of one of the upper arms 34 of the lazy tongs 30 is pivoted, at 35, to an arm 36 which extends fixedly from the turning plug of the valve 17, whereby, when the handle 28 is raised, the arm 36 will be drawn down and the valve 17 operated to direct the pressure fluid to the top of the cylinder 9, and when the handle 28 is lowered, the arm 36 will be raised and the valve 17 operated to direct the pressure fluid to the bottom of the cylinder 9.

Connected to one of the central pivots 37 of the lazy tongs 30 is the upper end of a link 38, the lower end of which is pivoted to one end of a lever 39 which is fulcrumed,

at 40, on a bracket 41 secured to the side 4 of the casing; and connected to the lever 39 is the lower end of a rod 42 which extends between and is pivoted to the outer ends of arms 43 and 44 which extend from the turning plugs of the valves 24 and 25, respectively. It will thus be seen that when the arm 28 is moved to operate the valve 17, the rod 42 will be moved by its connections to the lazy tongs 30 to operate the valves 24 and 25. The operating devices just described for the valves are so related and timed that when the handle 28 is raised to operate the valve 17 to direct the pressure fluid to the top of the cylinder 9, the valve 24 will be closed and the valve 25 will be opened, preventing the pressure fluid from flowing out through the pipe 13 to the pipe 15 and permitting the waste or previously used pressure fluid to flow from the bottom of the cylinder 9 through the pipes 14 and 15, while fresh pressure fluid enters the top of the cylinder 9 and forces the piston down; and the said devices are so related and timed that when the handle 28 is lowered to operate the valve 17 to direct pressure fluid to the bottom of the cylinder 9, the valve 25 will be closed and the valve 24 will be opened, preventing the pressure fluid from flowing out through the pipe 14 to the pipe 15 and permitting the waste or previously used pressure fluid to flow from the top of the cylinder 9 through the pipes 13 and 15, while fresh pressure fluid enters the bottom of the cylinder 9 and forces the piston 10 therein up. It will, therefore, be readily understood that by operating the handle 28, the pressure fluid supplied through the pipe 21 may be caused to force the plunger 12 up or down within the casing, as desired. Any suitable pressure fluid, such as water or air, may be employed, and any suitable pump or other device may be employed to create the desired pressure within the supply pipe 21.

I claim:

1. The combination of a cylinder, a piston within the cylinder, an inlet pipe having two branches, one branch being connected to one end of the cylinder and the other branch being connected to the other end of the cylinder, a single valve operative to admit pressure fluid to either of said branches, each of said branches having an outlet pipe connected thereto and an outlet valve for controlling the outlet pipe, operating arms extending from said outlet valves, a bar connected to said operating arms, an operating arm extending from said single valve, and a hand operated lever operatively connected to said bar and the last named arm.

2. The combination of a cylinder, a piston within the cylinder, an inlet pipe having two branches, one branch being connected to one end of the cylinder and the other branch being connected to the other end of the cylinder, a single valve operative to admit pressure fluid to either of said branches, each of said branches having an outlet pipe connected thereto and an outlet valve for controlling the outlet pipe, operating arms extending from said outlet valves, a bar connected to said operating arms, an operating lever for said bar, an operating arm extending from said single valve, and a lazy tongs including a hand operated lever operatively connected to the last named arm and the first named lever.

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

WINFIELD S. BELLOWS.

Witnesses:
MARK MUMMA,
W. B. BOYD.

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