

(No Model.)

C. SINNING.
PRESSURE DEVICE.

No. 546,354.

Patented Sept. 17, 1895.

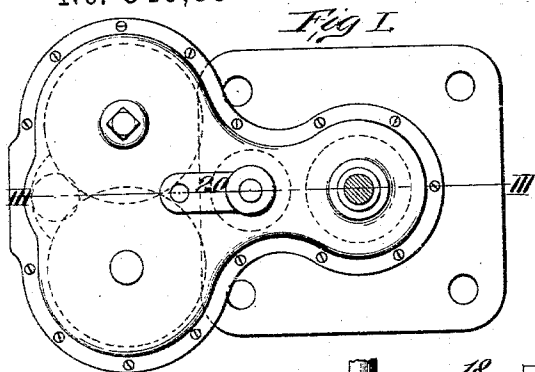


Fig. I.

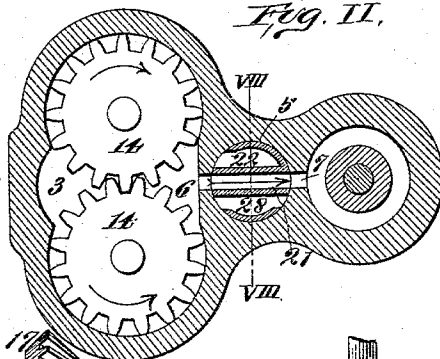


Fig. II.

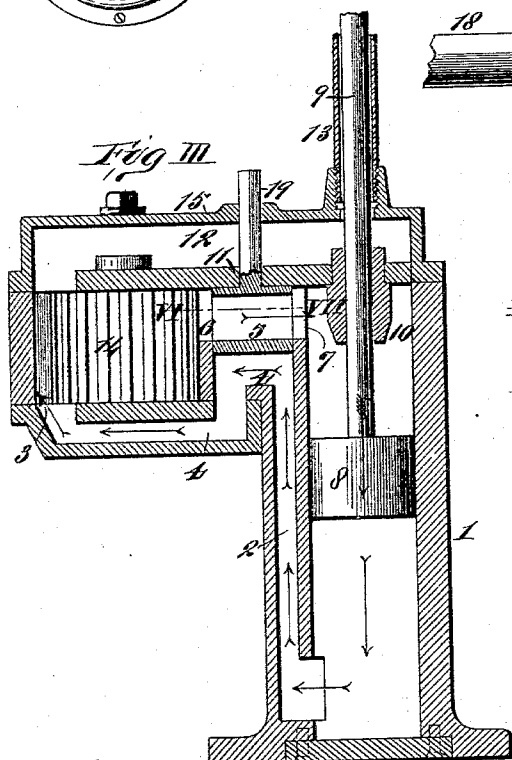


Fig. III.

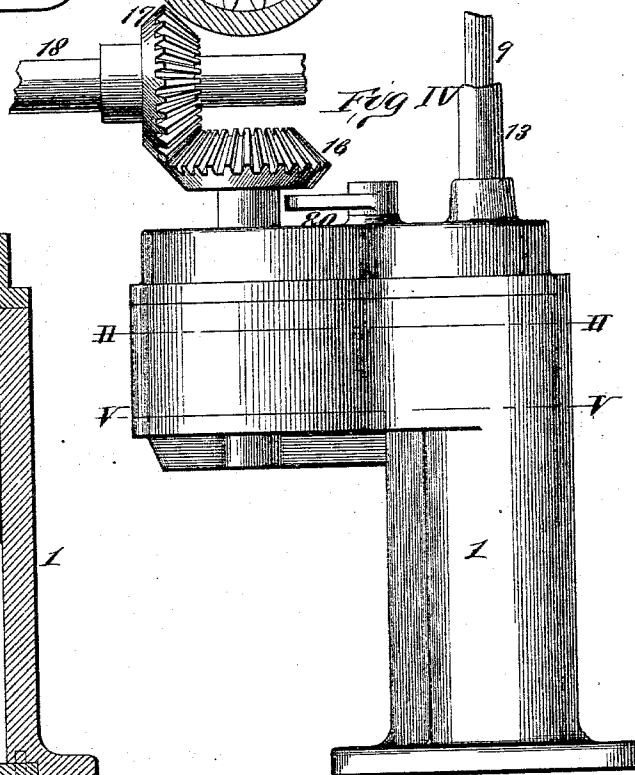


Fig. IV.

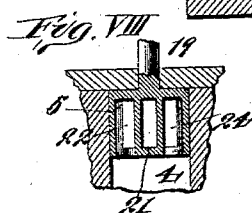


Fig. VIII.

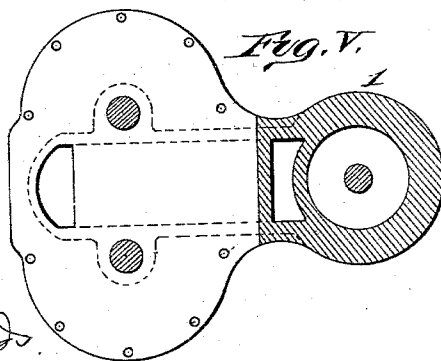


Fig. V.

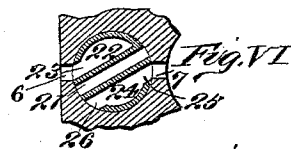


Fig. VI.



Fig. VII.

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UNITED STATES PATENT OFFICE.

CHARLES SINNING, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE SINNING
LASTING MACHINE COMPANY, OF SAME PLACE.

PRESSURE DEVICE.

SPECIFICATION forming part of Letters Patent No. 546,354, dated September 17, 1895.

Application filed November 4, 1893. Serial No. 489,997. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SINNING, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Pressure Device, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My present invention relates to certain improvements in the construction of the pressure device shown and described in my Patent No. 458,920, issued September 1, 1891, the object of my present invention being to simplify the construction, prevent leakage, and to make the device more sensitive and quick in its action.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claim.

Figure I is a top view of the device. Fig. II is a horizontal section of the same, taken on line II II, Fig. IV. Fig. III is a vertical section of the device, taken on line III III, Fig. I. Fig. IV is an elevation of the device. Fig. V is a horizontal section taken on line V V, Fig. IV. Figs. VI and VII are horizontal sections of the valve, taken on line VI VII, Fig. III. Fig. VIII is a section of the valve taken on line VIII VIII, Fig. II.

My invention is designed more particularly for regulating and controlling pressure and is well adapted for use in connection with a lasting-machine for regulating the pull of the nippers that grasp and pull the leather over the last.

1 represents the cylinder of the device, having a port 2 forming a communication between its bottom and a chamber 3 located at the upper end of the cylinder. The port 2 communicates with the chamber 3 through means of a horizontal passage 4.

5 represents a valve located between the upper end of the cylinder and the chamber 3, the chamber having an opening 6 opposite the valve, and the cylinder having an opening 7 opposite the valve.

8 represents the piston of the cylinder 1, and the stem 9 of the piston is connected to the object to be moved by the piston.

10 represents a bushing fitting in the upper

head of the cylinder and extending a distance into the cylinder, as shown, so as to prevent any possibility of the piston rising so far as to cut off the opening 7. The upper head of the cylinder and the top of the chamber 3 is formed by the bottom 11 of a chamber 12, located over the cylinder and over the chamber 3. The piston-rod 9 passes through this chamber 12, as shown in Fig. III, and on top of the chamber 12 is a tube 13, through which the piston-rod also passes. The internal diameter of the tube 13 is somewhat larger than the diameter of the piston-rod, so that any liquid carried up by the piston-rod will travel down it again and be caught by the tube and carried back into the chamber 12, or, in other words, by making the tube 13 larger than the piston-rod its upper end does not scrape or remove the liquid from the piston-rod, but such liquid as is carried up on the rod gravitates back into the chamber 12.

14 represents a pair of wheels located in the chamber 3, and which force or conduct the oil to the valve 5, the wheels turning in the direction of the arrows, Fig. II, and the spaces between the teeth being filled with oil, while such spaces at the adjacent sides of the wheels are occupied by the teeth of the wheels, and the oil is thus displaced at the valve side of the wheels, as will be plainly seen. One end of the journal or arbor of one of the wheels is extended through the top 15 of the chamber 12, and has upon it a bevel-wheel 16 engaged by a similar wheel 17 on a shaft 18, by which the wheels 14 are turned. The stem 19 of the valve 5 extends through the top 15 of the chamber 12 (see Fig. III) and has upon it a crank 20, (see Fig. IV,) which is connected to a treadle (not shown) by means of which the valve is operated. The form of the valve 5 is illustrated in Figs. II, VI, VII, and VIII. It has a straight passage 21, which forms a communication between the chamber 3 and the upper end of the cylinder 1. On one side of the passage 21 is a vertical passage 22, communicating through an opening 23 with the chamber 3 when the valve is turned in the proper position for this communication. The lower end of the passage 22 communicates with the passage or port 4, as shown in Fig. 100

VIII. On the other side of the passage 21 is a passage 24, which also communicates with the port 4 at bottom, and which has an opening 25 adapted to register with the opening 7 in the upper end of the cylinder 1, and an opening 26 adapted to register with the opening 6 from the chamber 3. When the valve is in the position shown in Fig. III, the liquid passes from the chamber 3 into the upper end of the cylinder 1 above the piston 8. When the valve is in the position shown in Fig. VI, the liquid passes from the chamber 3 into the port 4, and of course back again into the chamber 3, and at this time the liquid is also allowed to pass from the upper end of the cylinder into the chamber 3 through the passage 4, thus allowing the piston 8 to be drawn up by the pressure on the rod 9. When the valve is in the position shown in Fig. VII, the liquid is permitted to pass from the chamber 3 into the port 4 and back to the chamber, while the liquid is not allowed to escape from the upper end of the cylinder, the piston 8 at this time being held against the tension or force of the rod 9 by the body of liquid above it.

When the valve is in the position shown in Fig. III the piston 8 is of course under the influence of the action of the wheels 14; but when the valve is in either of the positions shown in Figs. VI or VII, the action of the wheels 14 does not affect or act upon the piston 8, and thus the pump is allowed to run continuously, whatever the desired condition of the piston 8 may be. The different positions of the valve 5 are effected by the operator through the treadle connected to the crank 20, and he can effect at will a downward movement of the piston 8, (by moving the valve to the position shown in Fig. III,) or permit an upward movement of the piston 8, (by moving the valve to the position shown in Fig. VI,) or he can cause the piston 8 to

remain at rest (by moving the valve to the position shown in Fig. VIII).

By locating the chamber 3 at the upper end of the cylinder 1, with but the small space occupied by the valve 5 between them, the different actions of the piston 8 occur almost simultaneously with the movement of the valve 5. The chamber 12 providing a reservoir for surplus liquid, and the tube 13 communicating with the chamber 12 avoids any escape of liquid from the pump. In practice the chamber 12 is kept about half filled with liquid, while the parts beneath are of course all full of liquid.

The operation of such a device, as above described, in a lasting machine is fully described in my pending application filed June 27, 1893, Serial No. 478,991; but it is evident my invention may be applied to other uses.

I claim as my invention—

In a pressure device the combination of a cylinder 1, a piston working in said cylinder, a chamber 3 located at the upper end of said cylinder and having communication with the top and bottom thereof, a pair of wheels located and working in said chamber, a valve located between said chamber and the upper end of the cylinder, and means for moving said valve and wheels, said valve having a passage 21 for forming the communication between the cylinder and chamber 3, a passage 22 provided with an opening 23 and a passage 24 provided with openings 25 and 26 for forming communications between the chamber 3 and passage 4 and chamber 3 and cylinder 1, substantially as and for the purpose set forth.

CHARLES SINNING.

In presence of—

A. M. EBERSOLE,
C. G. EDWARDS.