(No Model.) 2 Sheets—Sheet 1.

S. KELLOGG & J. WELLER.

HYDRAULIC PRESSURE PUMP.

No. 267,352. Patented Nov. 14, 1882.

Fig. 1.

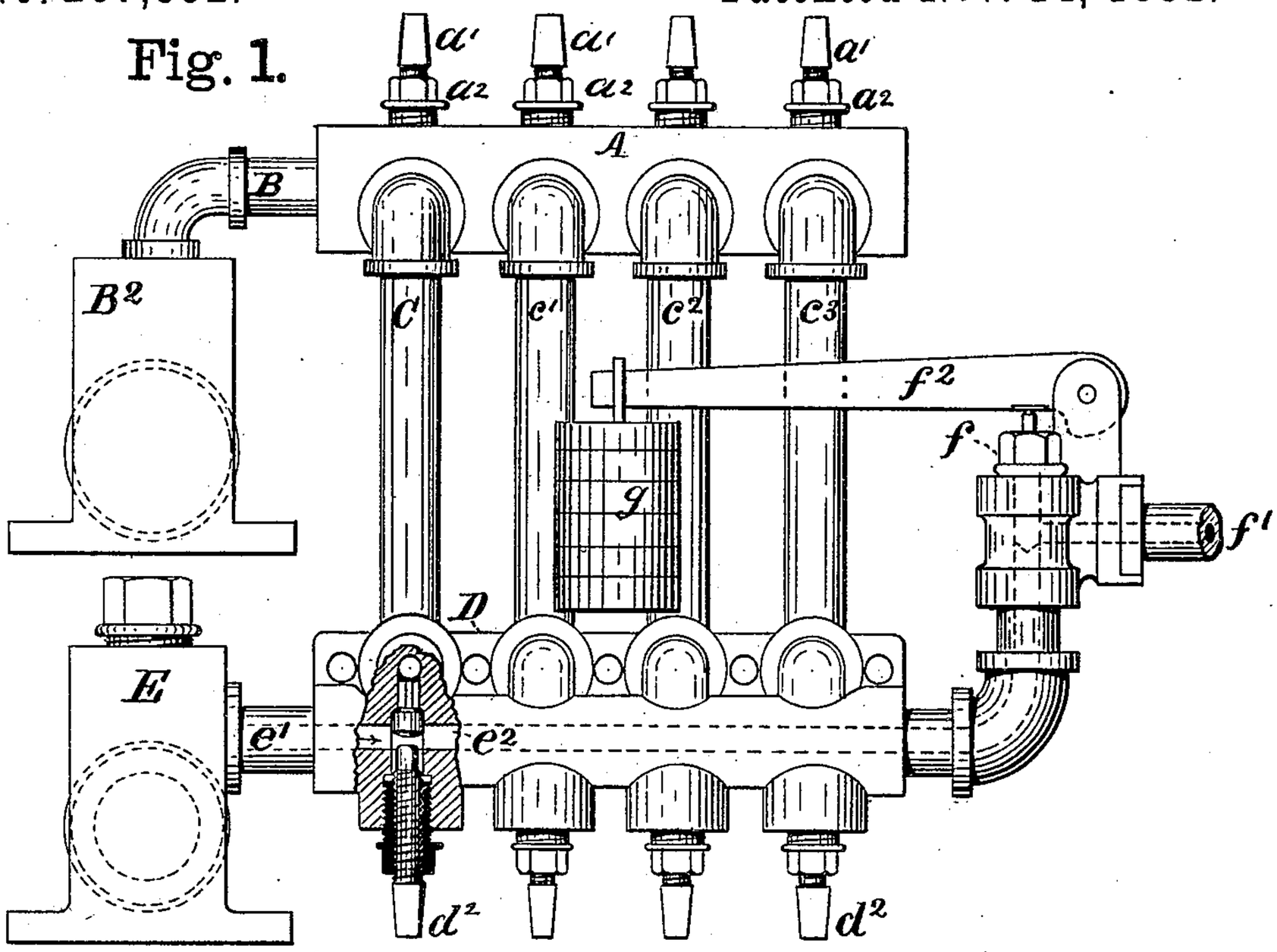
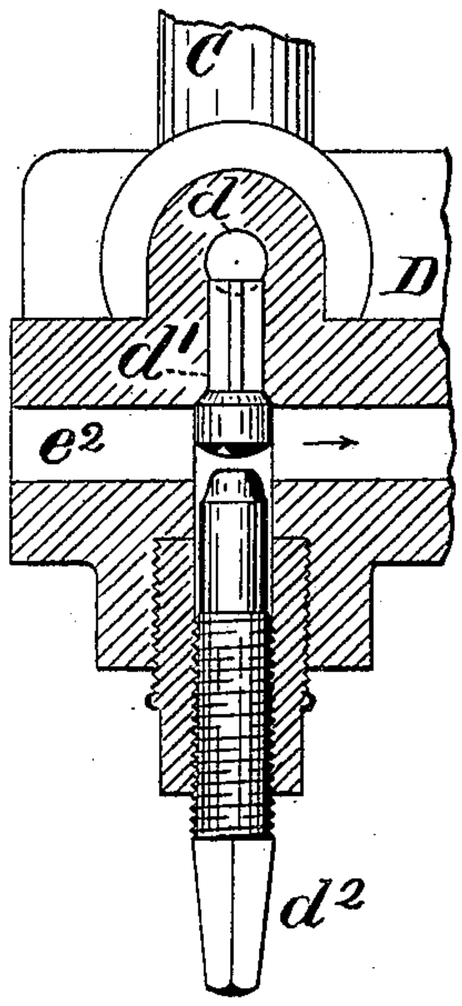


Fig. 2.



Witnesses.

Charles B. Cook

R. R. Baker,

Inventors.

Spencer Kellogg.

John Weller.

By James Sangster Atty.

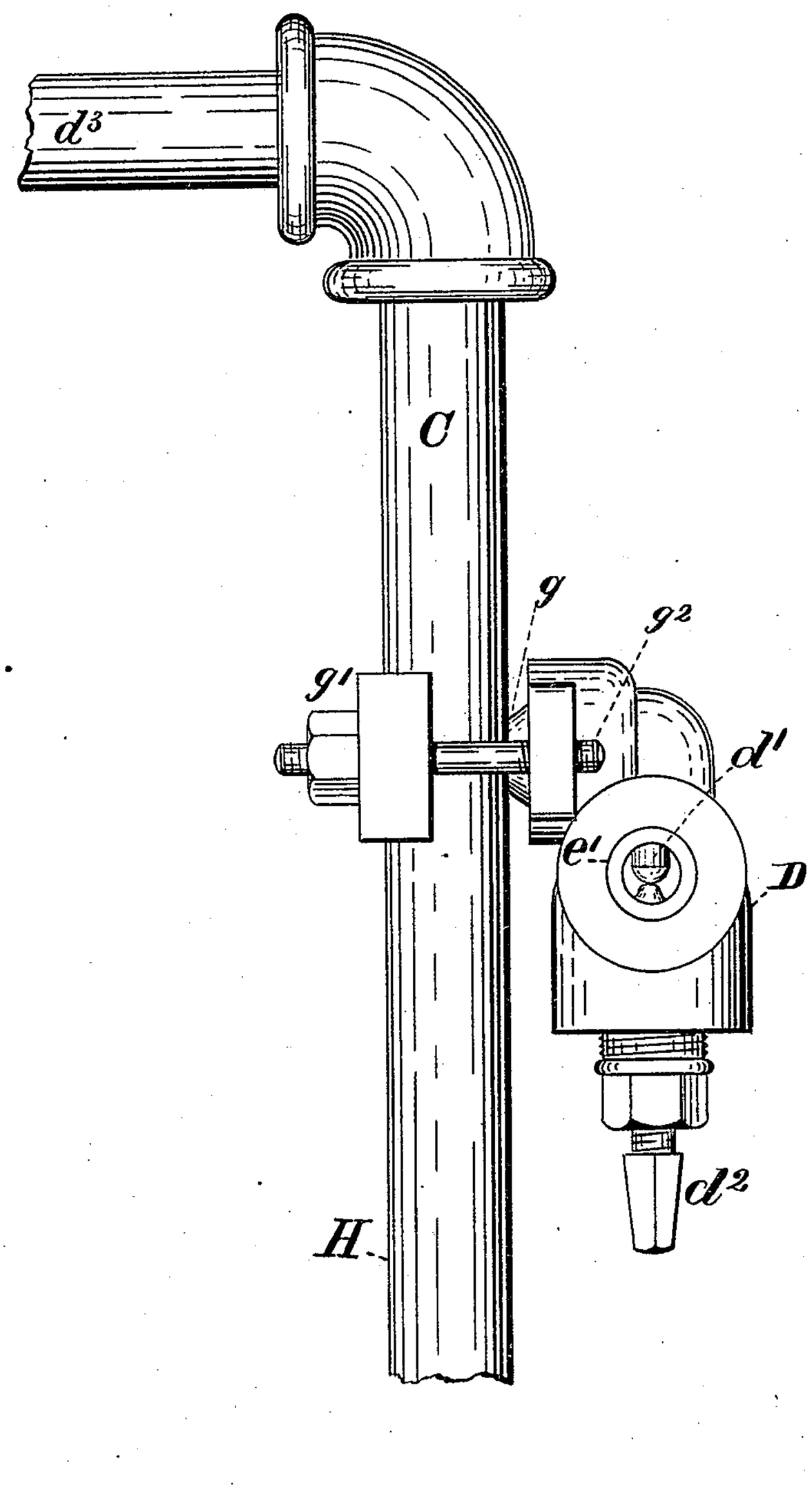
(No Model.) 2 Sheets—Sheet 2.

S. KELLOGG & J. WELLER.

HYDRAULIC PRESSURE PUMP.

No. 267,352. Patented Nov. 14, 1882.

Fig. 3.



Witnesses.

J. M. Caldwell.
H. Sangster

Inventors.

Spencer Kellogg
John Weller
By James Sangster Atty.

UNITED STATES PATENT OFFICE.

SPENCER KELLOGG AND JOHN WELLER, OF BUFFALO, NEW YORK, ASSIGNORS TO KELLOGG & McDOUGALL, OF SAME PLACE.

HYDRAULIC PRESSURE PUMP.

SPECIFICATION forming part of Letters Patent No. 267,352, dated November 14, 1882.

Application filed July 3, 1882. (No model.)

To all whom it may concern:

Be it known that we, SPENCER KELLOGG and JOHN WELLER, both citizens of the United States, residing in Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Automatic Hydraulic Pressure Pumps, of which the following is a specification.

In the manufacture of linseed-oil the pump for operating the presses usually stops working automatically when the required pressure is reached—say four thousand pounds to the square inch, more or less; but the pressure goes down as the oil is forced out of the oil-meal.

The object of our invention is to obviate this objection by providing the means whereby the required pressure may be maintained automatically by the displacement of the oil in the cake; and it consists in the combination of an auxiliary pump and a novel arrangement of valves, which will be fully and clearly hereinafter shown by reference to the accompanying drawings, in which—

Figure 1 is a front elevation, a portion being broken away to show one of the automatically-acting valves; and Fig. 2 is an enlarged vertical section through a similar portion. Fig. 3 represents an enlarged side elevation of a portion of the apparatus.

A represents the upper part of the apparatus. It is provided with the usual adjusting-screws and nuts a' a^2.

B is a pipe connected thereto, and to which a force-pump, B^2, is connected, an end view of which is shown in Fig. 1. This pump is adapted for forcing liquids, and is connected, made, and operated in the ordinary well-known way. Consequently it requires no further description here. It is used for giving the pressure above mentioned, and for the purpose of rendering the description of our invention more clear we will call it the "main pump."

C c' c^2 c^3 represent a series of pipes, (of which there may be more or less than the number shown.) Each of these pipes is connected by suitable tubes or pipes, in the ordinary way, to a hydraulic oil-press for pressing the oil from the oil-meal, and as these presses are constructed in the well-known way a minute description is not necessary here. The pipes C c' c^2 c^3 are connected to the part D of the apparatus, and communicate through openings d (see Fig. 2) with the automatically-acting valves d', of which there is one for each pipe. The distance of movement of the valves d' is regulated by means of an adjusting-screw, d^2. The portion d^3 of the pipe C or c' c^2 c^3 (see Fig. 3) connects with the part A, to which the pump B^2 is attached by means of the pipe B. A portion of the pipe C (and c' c^2 c^3) is connected to the portion D by a pipe, g, (or pipes,) held securely in place by a nut, g', and bolt g^2, as shown in Fig. 3. The portion H of the pipes C c' c^2 c^3 extends beyond the part D, and connects in any well-known way with the hydraulic oil-presses.

E represents the auxiliary forcing-pump. It is connected to the part D by a pipe, e', which communicates with each of the automatically-acting valves d' by a passage, e^2. (Shown partly in the broken section, Fig. 1, and by dotted lines through the remaining portion.) The passage leads to the safety-valve, which is provided with a lever, f^2, and is weighted down in the usual way by a weight or a series of weights, g.

The operation of our invention will be readily understood from the drawings. The main pump being put into action operates the hydraulic pressure until a pressure of, say, four thousand pounds to the square inch is obtained. At this point the main pump stops its action. This pressure causes the hydraulic pressure to force the oil out from the oil-meal, and as the oil is thus forced out the pressure would become proportionately less but for the auxiliary pump, which is kept working all the time, and thereby keeps up the pressure to the required point, the safety-valve being adjusted to such pressure, so as to be lifted when any greater pressure is reached, and allow the surplus liquid to pass off through the waste-pipe f'. When the pressure is for any reason taken by the usual means off from any of the pipes C c' c^2 c^3—the pipe C, for instance—and consequently from any press to which it is connected, the valve d' in such pipe is instantly forced up by the pressure of the liquid in the passage e^2, thereby separating such pipe and press from the remaining pipes and presses, so

that their action goes on undisturbed. It will be readily seen that the moment the pressure is again restored in said pipe, so as to be equal to the pressure in the passage e^2, the valve d' will drop of its own weight, and again open the passage leading thereto from the passage e^2. It will be noticed that the valves d' do not entirely close the passage e^2 when down, as they are made convex at the bottom, so as to allow the liquid to flow past them along the passage e^2, and to communicate with the passage d in the pipes C c' c^2 c^3 at the same time, unless cut off, as above stated.

The screws and nuts a' a^2 are used for the purpose of opening or closing communication with either of the pipes C or c' c^2 c^3, as may be desired. For instance, if it is desired to shut off communication with the pipe B and main pump B^2, it is screwed down far enough to close the opening or passage leading therefrom. It is constructed in the well-known way for such purpose. When the pressure from the main pump B^2 is greater than the pressure from the pump E, then the valve d' is open; but when the pressure from E is greater than from B^2 the valve is closed. It will be noticed that the bottom of the valve d' is convex, and that consequently when it is open and resting on the upper end of d^2 the communication is not entirely closed, but a space is left all around it for the oil to flow by, and the current forced from the pump E is a slow one, just sufficient to keep up the pressure, and consequently it does not lift, nor does the valve d', unless the pressure from B^2 is suddenly diminished.

We claim as our invention—

1. The part A, having a pipe, C, connected thereto, and to a portion, D, provided with a passage, e^2, an automatically-acting valve, d', and safety-valve f, in combination with a main and an auxiliary pump, substantially as and for the purpose described.

2. The main pump B^2 and the portion A, provided with the pipes C c' c^2 c^3, in combination with the portion D, provided with the valves d', passage e^2, a suitable safety-valve, and an auxiliary pump, substantially as specified.

3. A main and an auxiliary pump provided with a safety-valve and suitable pipes and passages, substantially as specified, in combination with an automatically-acting valve, for the purposes described.

SPENCER KELLOGG.
JOHN WELLER.

Witnesses:
SIDNEY MCDOUGALL,
JAMES SANGSTER.