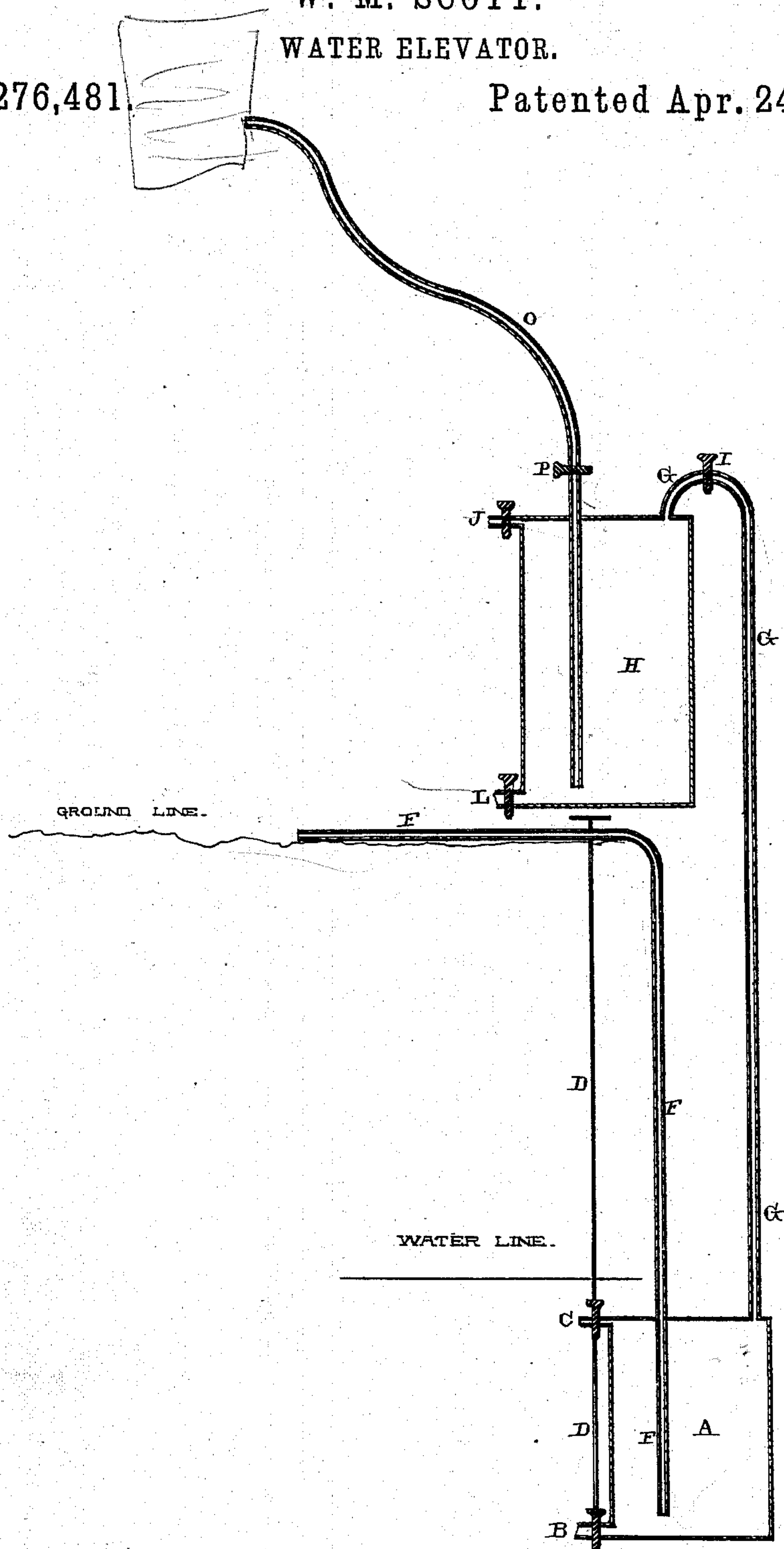


(No Model.)

W. M. SCOTT.
WATER ELEVATOR.

No. 276,481.

Patented Apr. 24, 1883.



— Witnesses. —

Louis F. Crandner
J. W. Garner

— Inventor. —

Wm. M. Scott.
per
F. A. Lehmann, atty

UNITED STATES PATENT OFFICE.

WILLIAM M. SCOTT, OF LOCKPORT, NEW YORK.

WATER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 276,481, dated April 24, 1883.

Application filed December 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. SCOTT, of Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Water-Elevators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which forms part of this specification.

My invention relates to an improvement in draining mines; and it consists in the combination of two tanks provided with suitable stop-cocks, a supply-pipe which is connected with the upper tank, the air-pipe which connects the two tanks together, and a pipe connected with the lower tank, through which the water from the mine is forced, all of which will be more fully described hereinafter.

The object of my invention is to utilize a head or fall of water for the purpose of forcing the water from mines, and thus dispense with the use of pumps and other similar machines.

The accompanying drawing represents a vertical section of an apparatus embodying my invention.

A represents a tank or reservoir of any suitable shape or construction, and which is to be placed at a point in the mine below the level of the water. At the bottom of this tank is formed a cock, B, and at its top is formed a second one, C, of smaller diameter. These two cocks B C are united together by a rod, D, which extends up above the surface of the ground, so as to be readily operated. These two cocks are arranged in such relation to each other that they both open and close at the same time. Leading from near the bottom of this tank A is the water-pipe F, through which the water from the mine is forced up above the surface of the ground. Also, connected with this tank A, at its top, is the air-pipe G, which is connected at its upper end with a second and larger tank, H. This pipe G is made to extend above the top of the tank H, as shown, and is provided with a suitable stop-cock, I, which should be air-tight. The tank H is also provided with two stop-cocks, J L,

similar to those in the smaller tank, A; but these two upper cocks need not be connected together unless it is so desired. This tank H will be placed either upon the surface of the ground or at any suitable elevation above it, according to the height of the head of water which is to be utilized. Leading into this tank H, and extending down near its bottom, is the water-supply pipe O, which is provided with the stop-cock P, and which pipe is connected with the elevated supply of water.

The two stop-cocks J L are first open, so as to allow the tank H to fill with water, and are then closed. The two stop-cocks B C are also open, so as to allow the lower tank, A, to fill with the water that is down in the mine, and are then closed. The stop-cock I in the pipe G having been opened, the stop-cock P is also opened, and the water flows from the source of supply into the tank H and fills it from the bottom upward. The air that was in this tank H, as rapidly as it is displaced by the water, is forced through the pipe G into the tank A, where it exerts its pressure upon the top of the water that is contained in the tank. This pressure of the air will cause the water in the tank to rise through the pipe F to the top of the ground. In case there is not sufficient air in the upper tank to displace all of the water in the tank A, the stop-cock I in the pipe G can be closed, so as to keep the air that has been compressed in the pipe G and the top of the tank A from escaping. The stop-cock P in the pipe O is first closed, and then the two stop-cocks J L in the tank H are opened, so as to allow the water to escape. The two stop-cocks J L are again closed and the two cocks I P again opened, and a second quantity of condensed air is forced down into the tank A, so as to elevate another quantity of water. This process can be carried on very rapidly until nearly all of the water that was contained in the tank A is forced up above the surface of the ground. After the air has been condensed to a certain extent in the top of the tank A, when the stop-cock I is opened the sudden expansion of the air which has been compressed in the tank A will blow all of the water that was left in the upper tank, H, out through the lower stop-cock, L, in the form of hail.

Having thus described my invention, I claim—

5 A water-elevator composed of the two cylinders A H, each of which is provided with an air-inlet at its top and a water-inlet at its bottom, an air-pipe provided with a cock for connecting the cylinders together, an outlet-pipe, F, the rod D, and the valves B C, the parts

being arranged and combined to operate substantially as shown. 10

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

WILLIAM M. SCOTT.

Witnesses:

VOLNEY SIMSON,
J. A. ELDREDGE.