

(No Model.)

J. SWAN.
WATER POWER DEVICE.

No. 396,056

Patented Jan. 8, 1889.

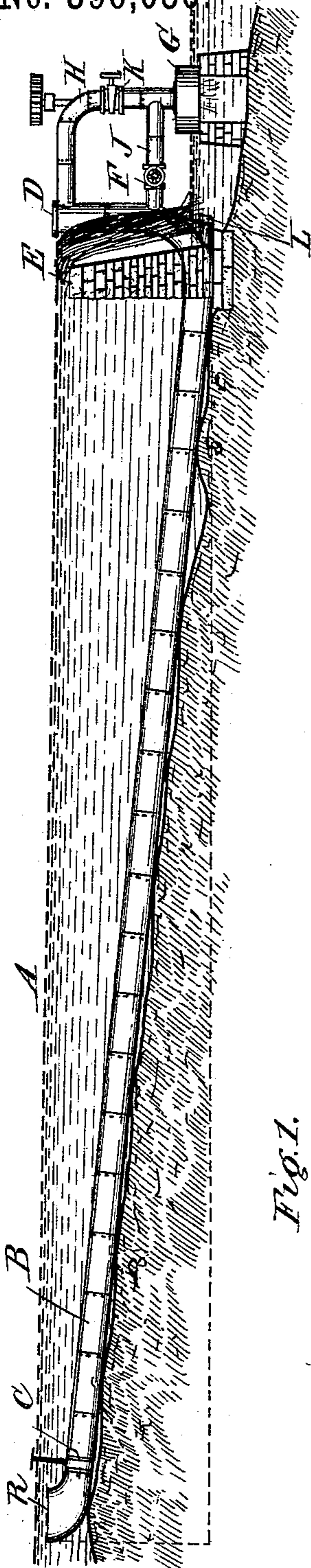
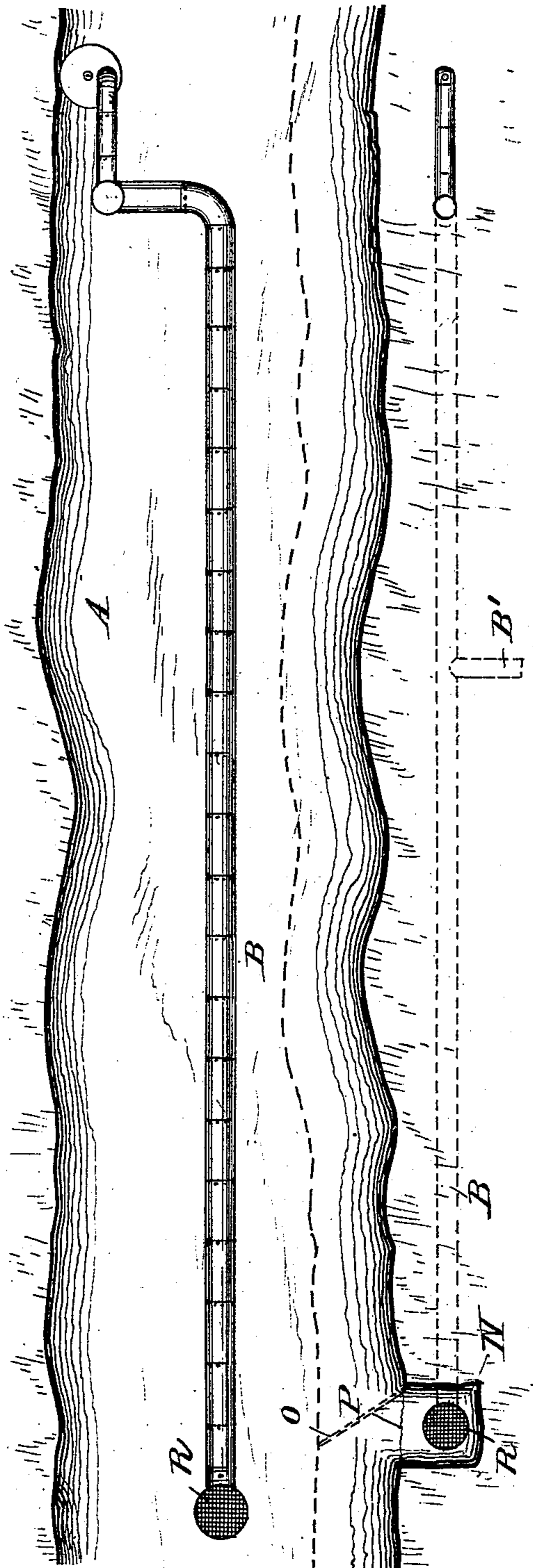


Fig. 1.

Witnesses:
J. B. Dover,
A. Austin

Fig. 2.



Inventor
James Swan
By Charles W. Parker

UNITED STATES PATENT OFFICE.

JAMES SWAN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO BERNARD A. ECKHART, OF SAME PLACE.

WATER-POWER DEVICE.

SPECIFICATION forming part of Letters Patent No. 396,056, dated January 8, 1889.

Application filed June 3, 1887. Serial No. 240,127. (No model.)

To all whom it may concern:

Be it known that I, JAMES SWAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented a new and useful device for securing power from the water of a flowing stream or a natural water-source, as a lake, of which the following is a specification.

My invention relates to means whereby the
10 natural fall of water in a flowing stream or from an elevated water-source, as a lake, may be used to supply power for the various uses of commerce, and its object is to do this by confining a sufficient quantity of the water
15 of such stream or lake in an inclined duct or pipe and then delivering it at the appointed place from the duct or a stand-pipe thereon, thus obviating the necessity of a mill-dam. This object may be attained by the use of
20 devices like those illustrated in the accompanying drawings, wherein my invention is shown as applied to a stream.

Figure 1 is a vertical cross-section through a stream which is intercepted by a mill-dam,
25 showing a pipe or duct lying in the bed of the stream. Fig. 2 is a plan view of a stream, showing the pipe at one side under ground, and also a supply-basin and movable dam.

Like parts are indicated by the same letter
30 in all the figures.

A is a stream; B, a duct, in this case consisting of successive sections of iron pipe, though it could be made of any desired size, shape, or material.

35 B' is an offshoot of said pipe B.

C is a valve in the receiving end of the duct, whereby it may be closed when the supply of water through the duct is to be shut
off.

40 D is a stand-pipe rising from or continuous with the other end of said duct and rising to the same height as the receiving end of said duct.

E is the mill-dam, which when my invention is applied becomes unnecessary.

F is a valve in the pipe J, which leads from the base of the stand-pipe to the point where the power is to be applied—as, say, the turbine wheel G.

50 H is a pipe from the top of the stand-pipe,

leading also to the wheel G, and it is controlled by the valve K.

L is a discharge-valve whereby the water may be discharged from the duct to clean the
same.

N is a supply-basin, receiving its water from the stream A through the grating P.

O is a wing, dam, or gate whereby a suitable quantity of the water in the stream can be thrown into the basin N, or the same may
60 be closed. In the case of a very small stream, as indicated by dotted lines in Fig. 2, when all the water is to pass into the duct, the gate O may be so constructed as to throw all the water of the stream into the basin, or the mouth
65 of the duct may open directly into the stream. The duct or pipe may be laid in the bed of the stream, or beside the same, or underground along the same or beneath the bed. Over the receiving end of the duct may be placed the
70 grating R, to keep out foreign substances.

The use and operation of my invention are as follows: The duct or pipe is laid alongside of or in the stream whose water is to be used, or it may be run in any direction toward some
75 point lower than the receiving-point where the water is to be utilized. The receiving end may be arranged in any desired way, as shown or otherwise, according to its size and the character of the stream used. It should
80 be arranged so as to receive water as pure as possible. It is inclined generally downward toward the discharge-point, which may be on the banks of the stream lower down or a considerable distance therefrom. At this discharge-point there may be a stand-pipe or
85 reservoir, out of which a pipe or pipes may be run to the wheel or wheels to which the power is to be applied. The main pipe or duct may be tapped at intervals, as by pipe B', so that
90 the main duct may be used to supply several points with water to be used as power. The pipes may be laid in the bed of the stream to avoid the necessity of ditching, or along the same, and the ditch could be used when the
95 pipe or any offshoot was required to reach a point away from the stream. Any kind of a discharge or stand pipe could be used and any kind of a receiving end. The duct may be placed below the bed of the stream. The
100

receiving and discharging ends and the arrangement of the duct would be substantially the same in case of the application of my invention to a lake or other elevated water-
5 source.

What I claim, and desire to secure by Letters Patent, is as follows:

1. The combination of an inclined water-pipe with a receiving attachment at one end
10 to receive water from a water-source—as, for instance, a stream, lake, or the like—with a stand-pipe having a discharging end and a power device to receive the said water from
15 said pipe at a point below the surface of the water in such water-source at the place at which such water is received in such inclined pipe.

2. The combination of an inclined water-pipe the receiving end of which receives water from a water-source—as, for instance, 20 a lake, stream, or the like—in combination with a stand-pipe at the lower end of such water-pipe, and a discharge end thereon, a power appliance to which water is supplied, said stand-pipe, discharge end, and power ap- 25 pliance being placed at a point on the inclined water-pipe below the point at which such pipe receives its supply of water.

JAMES SWAN.

Witnesses:

FRANCES W. PARKER,
BERNARD A. ECKHART.