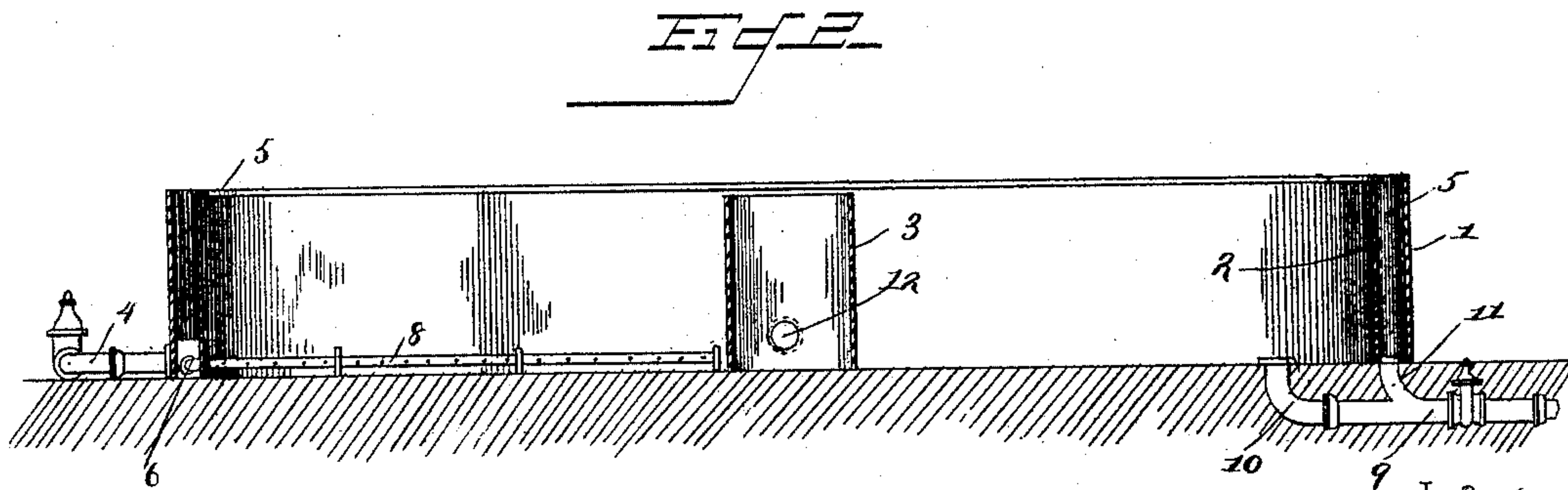
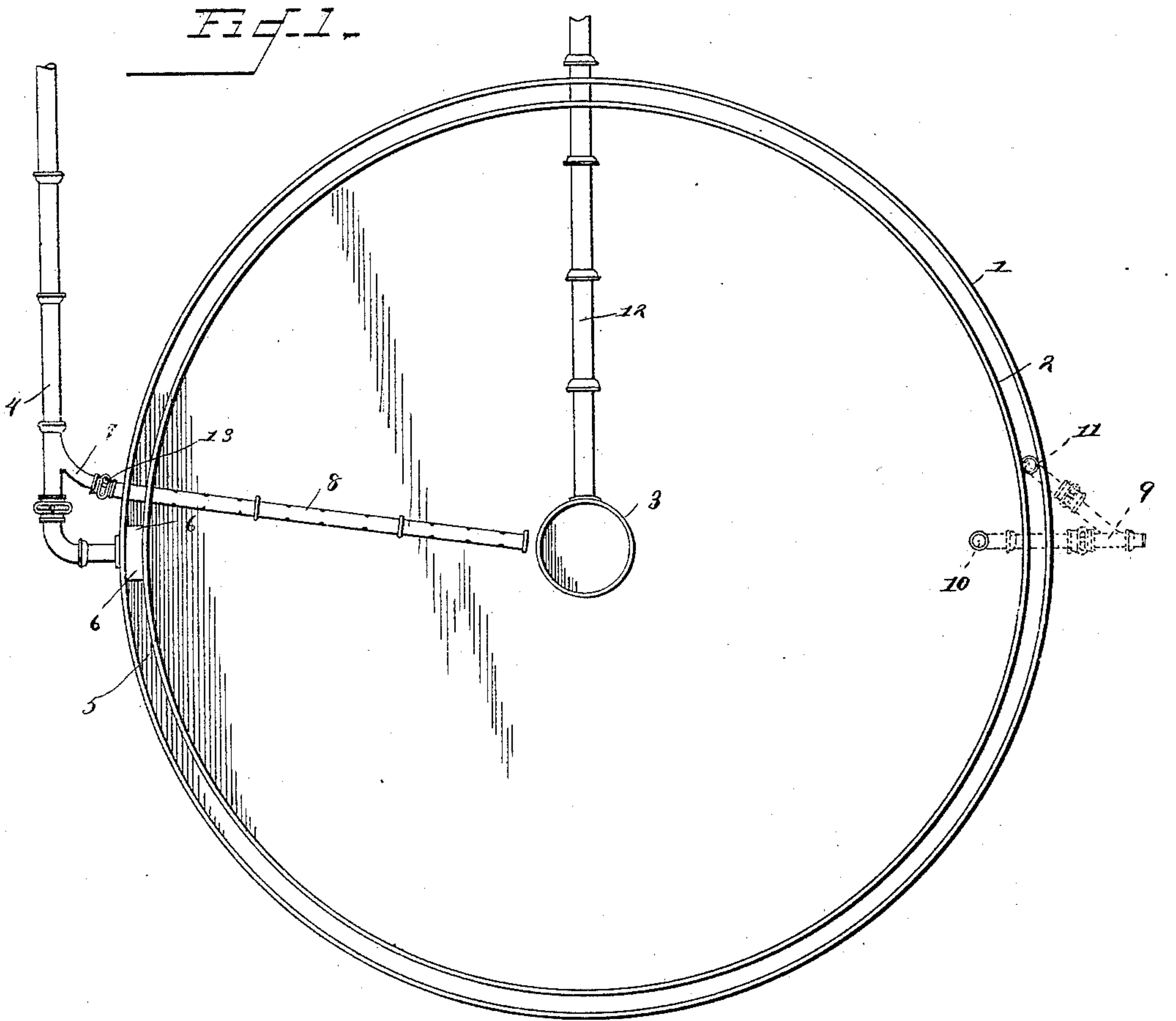


(No Model.)

C. DELAFIELD.  
SETTLING BASIN.

No. 424,542.

Patented Apr. 1, 1890.



Witnesses

*Geo. C. Fitch.*

*Wm. Bagger.*

By his Attorneys,

*Chas. Snow & Co.*

Clarence Delafield

Inventor



# UNITED STATES PATENT OFFICE.

CLARENCE DELAFIELD, OF NEW YORK, N. Y.

## SETTLING-BASIN.

SPECIFICATION forming part of Letters Patent No. 424,542, dated April 1, 1890.

Application filed August 29, 1889. Serial No. 322,282. (No model.)

*To all whom it may concern:*

Be it known that I, CLARENCE DELAFIELD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Settling-Basin, of which the following is a specification.

This invention relates to settling-basins for the purpose of removing impurities from water by precipitation; and it has for its object to provide a settling-basin which may be used continuously, and which shall be so constructed that, although a constant supply of water takes place, the contents of said basin shall be almost absolutely quiescent, which is obviously the most favorable condition for the precipitation of such impurities as may be held in suspension in the water.

The invention consists in the improved construction of the said settling-basin, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a plan view of a settling-basin embodying my invention. Fig. 2 is a vertical transverse section of the same.

Like numerals of reference indicate like parts in both the figures.

1 designates a tank, which may be of iron, wood, masonry, or any convenient material. Within this tank, and at a short distance from the wall thereof, is constructed an interior concentric wall 2, which constitutes an inner tank or main settling-basin. Centrally in the latter is located a vertical pipe or well 3. An inlet-pipe 4 enters the annular space 5 between the tanks or walls 1 and 2, where it is provided with diverging outlets 6 6, which force the entering currents horizontally around the annular space rather than vertically. From the inlet-pipe extends a branch 7, connecting with a perforated pipe 8, which extends radially across the bottom of the inner or main settling-tank 2. An outlet-pipe 9 is provided with flanges 10 and 11, connected, respectively, with the bottom of the main settling-tank and of the annular space 5. Another outlet-pipe 12, connected to the central pipe or well 3, connects the latter with the pump leading to the main service.

In operation the muddy or impure water is pumped through the inlet-pipe 4, the pipe or

branch 7 being closed by a gate or valve 13. The water diverges to the right and left in the annular space, and when this is filled pours over the wall 2 into the main tank in a thin stream. To admit of this, it will be seen that the outer wall 1 is slightly higher than the wall 2, which latter is in turn somewhat higher than the central well or pipe 3. In lieu of this, however, the wall 2 and the pipe 3 may be provided with perforations at the proper height to admit of the overflow of water. The overflow into the tank or main settling-basin 2 continues until the latter is nearly full, when the water overflows into the central pipe or well 3, from whence it passes into the service-pipes. It will be observed that the water which enters the settling-basin from the supply-pipe is spread into an exceedingly thin stream or series of streams in passing over the wall 2, and from the latter over the upper edge of the pipe 3. This being the case, the motion of the water within the settling-tank is so slight as to be almost imperceptible, thus allowing the impurities to be deposited upon the bottom of the tank, as if the water were absolutely at rest; hence the water which passes into the well 3 will be found to have been deprived of nearly all the impurities previously held in suspension, and thus requiring but slight filtration to remove the remaining suspended matter; or, if desired, the water may be passed through one or more similar settling-basins to perfect the process. The continuous flow of water may proceed until such time as the suspended matters shall accumulate to a depth to render it necessary to remove the same.

In order to clean the tank, I open the outlet-pipe 9, when the water in the tank 2 and annular space 5 passes out to waste. The gate or valve 14 in the inlet-pipe is then closed and the gate 13 opened, allowing the water to be pumped into the perforated pipe 8. The series of small streams or jets of water thus forced under pressure in opposite directions will rapidly remove the soft mud and other deposits toward and through the outlet-pipe 9. The annular space will be cleansed by opening the gate 14, closing the gate 13, and forcing through the inlet-pipe and its branches 6 6 streams of water to carry the deposits around the annular space 5, and



out through the branch 11 of the pipe 9. Nearly as good a result may be obtained if the water be introduced through the well 3 either over its upper edge or through suitable  
 5 apertures in the said pipe or well and flowing across the main settling-basin and thence into the annular space between the walls 1 and 2. Of course the arrangement of the supply and exit pipes would in this case be  
 10 reversed.

To obtain the best results in a settling-basin, the water should be as nearly quiescent as possible and the deposit should be removed periodically.

15 By my improved construction the contents of the settling-basin, although a constant supply and discharge takes place, is almost absolutely at rest, and the accumulated deposit may at any time be removed in an exceedingly convenient, perfect, rapid, and economical manner.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

25 1. In a settling-basin, the combination of an outer wall, an inner wall, a central well or pipe forming an overflow, a discharge-pipe connected to the latter, a supply-pipe connected with the annular space between the  
 30 outer and inner walls, and a waste-pipe having branches connected with the bottom of the said annular space and with the bottom of the main tank, substantially as set forth.

35 2. In a settling-basin, the combination of an outer wall, an inner wall forming an overflow from the annular space between the said walls, a central pipe or well forming an over-

flow from the main tank, a discharge-pipe connected to said central pipe, and a supply-pipe having diverging branches extending  
 40 horizontally in opposite directions in the annular space between the outer and inner walls, substantially as set forth.

3. In a settling-tank, the combination of an outer wall, an inner wall, a central overflow-  
 45 pipe, a discharge-pipe connected with the latter, a supply-pipe connected to the annular space between the outer and inner walls and having a gate or valve, and a branch pipe connected to said supply-pipe, having a gate or  
 50 valve and connected with a perforated pipe extending radially across the bottom of the main settling-tank, substantially as set forth.

4. In a settling-basin, the combination of an outer wall, an inner wall, a central well or  
 55 overflow-pipe, a discharge-pipe connected to the latter, a supply-pipe connected with the annular space between the outer and inner walls and having a gate or valve, a perforated pipe extending radially across the bot-  
 60 tom of the main tank, a valved branch pipe connecting the said perforated pipe with the main supply-pipe, and a waste-pipe having branches connected with the bottom of the main tank and of the annular space between  
 65 the outer and inner walls, substantially as and for the purpose herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CLARENCE DELAFIELD.

Witnesses:

A. J. GAVETT,  
 THOS. S. WILLIAMS.