No. 712,194. Patented Oct. 28, 1902.

E. KELLY.

SEWER CATCH BASIN.

(Application filed Oct. 29, 1900.)

(No Model.)

Fig. 2.

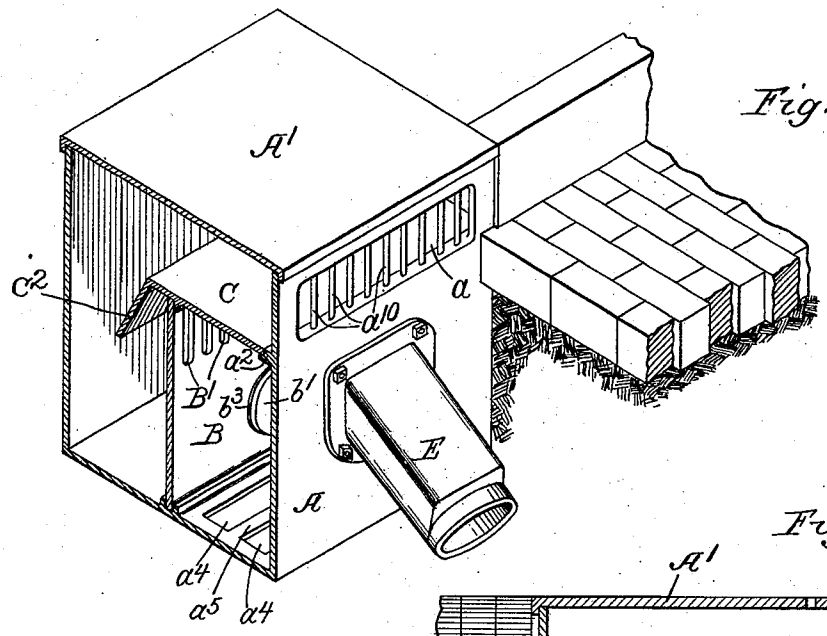


Fig. 3.

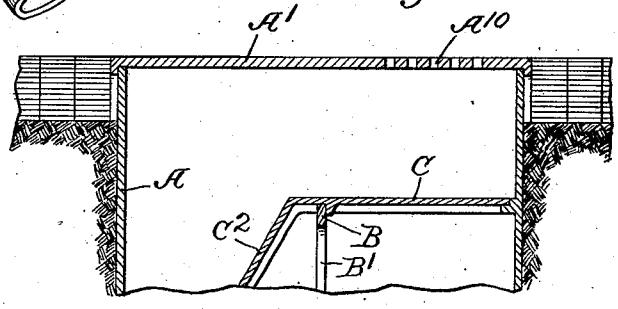
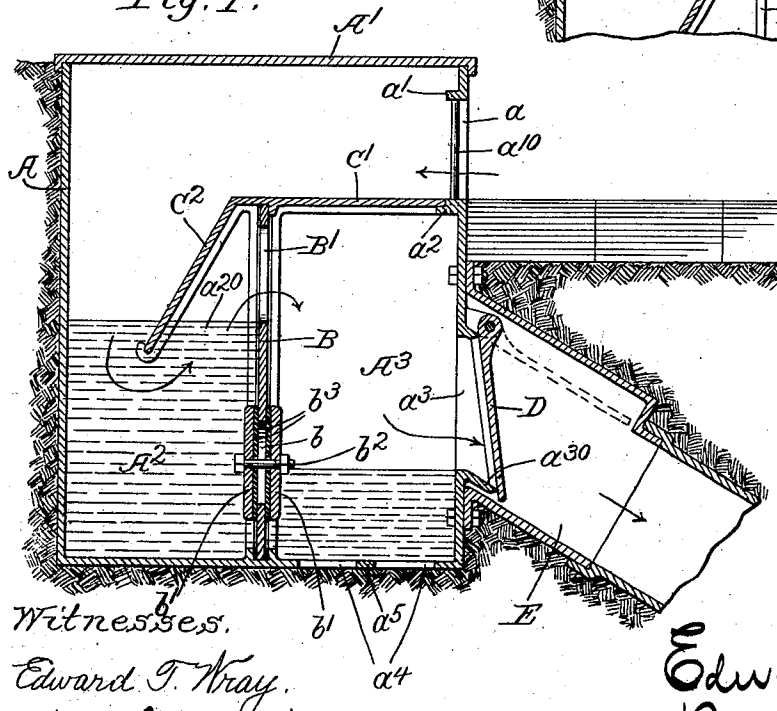


Fig. 1.



Witnesses.
Edward T. Wray.
Edgar L. Conant.

Inventor.
Edward Kelly
by Burton Burton
his Attys

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UNITED STATES PATENT OFFICE.

EDWARD KELLY, OF ELKHART, INDIANA.

SEWER CATCH-BASIN.

SPECIFICATION forming part of Letters Patent No. 712,194, dated October 28, 1902.

Application filed October 29, 1900. Serial No. 34,734. (No model.)

To all whom it may concern:

Be it known that I, EDWARD KELLY, a citizen of the United States, and a resident of Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Sewer Catch-Basins, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

In the drawings, Figure 1 is a vertical section of my improved catch-basin, showing a portion of the pavement of the street in which it is located in order to indicate its relative position. Fig. 2 is a perspective view of the catch-basin with one side wall removed to disclose the interior structure. Fig. 3 is a detail section of a portion of a catch-basin modified by having the inlet in a different position.

My improved catch-basin comprises a cast-iron box A, cast integrally as to five sides, the sixth side being formed by a removable cover A′. One of the lateral sides has near the upper edge an opening a, interiorly flanged at the upper and lower margins at a' and a^2 to receive grate-bars a^{10} a^{10}, &c. The box is designed to be set with the cover substantially flush with the upper edge of the curb, of which in that case the box forms a part, the grated aperture a having its lower margin substantially level with the surface of the pavement or bottom of the gutter alongside the pavement. When it is more convenient to set the catch-basin entirely in the street—that is, under the pavement instead of inside the curb-line—the cover A′ will be provided with a grated aperture, as shown at A^{10} in Fig. 3.

In the box A and if not integral at least making water-tight seams therewith is a vertical partition B, extending up from the bottom to a point not higher than the lower margin of the inlet-aperture a, when such aperture is formed in the side of the box, as shown in Fig. 1. The purpose of this vertical partition is to form in the box two settling-chambers A^2 and A^3, and for the purpose of communication between them the partition B has a grate-aperture B′ near the upper part. For the purpose of forming an inlet-passage above the settling-chambers, partitioned, as described, by the vertical partition B, I provide the plate, consisting of the portion C′, which is designed to extend horizontally, and a portion C^2, which extends obliquely downward when the plate is lodged in position shown in Fig. 1. Such plate is lodged at one end in a suitable seat provided for it on the lip a^2, which forms the lower margin of the inlet-aperture a, and also upon the upper edge of the vertical partition B and extends horizontally between the two lodgments, the obliquely-deflected portion projecting downward in the first settling-chamber A^2, toward the wall thereof opposite the other chamber A^3, in such direction that the current flowing down said inclined portion tends to impinge upon said opposite wall at a sufficient distance above the bottom of the chamber, so that being deflected by said impingement it shall strike the bottom wall at an angle, causing it again to be deflected upward and strike the partition B obliquely, causing a third deflection, thus tending in case of a continuous current discharging into the water, which will stand in said chamber up to the level of the lower margin of the grate-apertures B′, to produce an eddy or swirl in the lower part of the settling-chamber A^2, by which the solid matter shall be thrown off centrifugally and lodged in the chamber, thus diminishing the probability of such solid matter being carried up and passing over into the second settling-chamber through the grate B′. The inclined portion C^2 of the plate C′ C^2 extends to a point sufficiently below the lower margin of the grate-apertures to insure an adequate water seal at a^{20} between said levels.

In the same wall of the box in which the inlet-aperture is formed there is formed an outlet a^3, bounded by an outwardly-projecting flange a^{30}, which is preferably finished to a knife-edge, on which a gate or valve D seats, such valve being hinged at the upper side of the aperture and the flange bounding the same being made so that its said knife-edge is in a plane slightly inclined, causing the gate or valve to seat thereon by gravity with adequate pressure.

E is a discharge-spout rigid with the box A, encompassing the flange a^{30} and of suitable size to accommodate the movement of the valve D from closed position (indicated by a full line) to open position, (indicated by dotted

line in Fig. 1.) The end of the spout is suitably formed for connection to the sewer-pipe.

The operation of my improved sewer catch-basin will be understood from the foregoing description; but it may be further stated, as follows: The surface drainage from the street entering through the grated aperture *a* will be to a large extent relieved of floating matter—such as leaves, paper, and rubbish—by the grate, which will prevent its entrance, the current flowing over the plate C′ C^2 and deflected by the inclined portion toward the opposite vertical wall of the box, tending to cause a deposit of all heavier materials in the bottom of the box. All lighter materials which may have passed by the grate at *a* will be liable to be arrested by the grate B′, and the water will stand in the settling-chamber A^2 up to the level of the lower margin of the grate-aperture, forming a water seal which will prevent the return of sewer-gas. The water flowing through the grate-apertures B′ will tend to leave any solid material which it may contain deposited in the second settling-chamber below the margin of the outlet-aperture a^3, and this result is facilitated or rendered more probable by the location of said aperture at considerable distance below the level of the lower edge of the grate-apertures B′, so that the water has considerable fall from the latter to the bottom of the second settling-chamber A^3, which is nevertheless left of considerable depth below the level of the lower margin of the outlet-aperture a^3, so that solid matter carried to the bottom will not readily rise again in order to pass out of the outlet. The knife-edge seat provided for the valve D diminishes the liability of the valve to become stuck by rusting or to be held off its seat by material adhering to the latter.

The cover A′ and the plate C′ C^2 being both removable from above, access to both settling-chambers for the purpose of cleaning the catch-basin is rendered very easy. The entire catch-basin being of cast-iron and complete without masonry or plumbing can be quickly set and cheaply maintained.

When there is no objection to allowing the water to soak away into the soil, the bottom of the second settling-chamber A^3 is made apertured or grated, as shown in the drawings, so that while the water may soak away the sediment will be retained, the apertured bottom or grate-bars bounding the chamber at the lower side serving as a definite limit for shoveling in emptying the chamber of the sediment, and so preventing the ground underneath being dug up in that process. In order that the first settling-chamber A^2 may be drained of water when desired at least far enough down so that there shall be no danger of freezing up of the trap or water seal, preventing exit from the box in severe weather, I provide in the partition B at a point sufficiently above the bottom to allow room for the accumulation of sediment and at a point sufficiently below the water seal an aperture *b*, which is closed by a plate *b′ b′*, clamped upon opposite sides of the partition B, with intervening packing-gaskets b^3 b^3, the plates being bound in position by a bolt b^2. In the cold weather of winter these plates will be removed and the aperture left open, the objection of danger of escape of gas in the absence of a water seal being less objectionable than the danger of freezing up.

I claim—

A catch-basin, comprising an initial and a final chamber, communicating at the upper part of the final chamber, and trapped at such communication; a horizontal inlet, having a lateral entrance and extending from such entrance beyond the final chamber to its discharge into the initial chamber, the final chamber having suitable sewer connection below the level of the communication of the two chambers.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Elkhart, Indiana, this 24th day of October, A. D. 1900.

EDWARD KELLY.

In presence of—

CHAS. S. BURTON,

ADNA H. BOWEN, Jr.