

July 14, 1953

S. P. BROUSSARD ET AL

2,645,302

STREET GUTTER DRAINAGE GRILLE

Filed Nov. 1, 1950

2 Sheets-Sheet 1

Fig. 1.

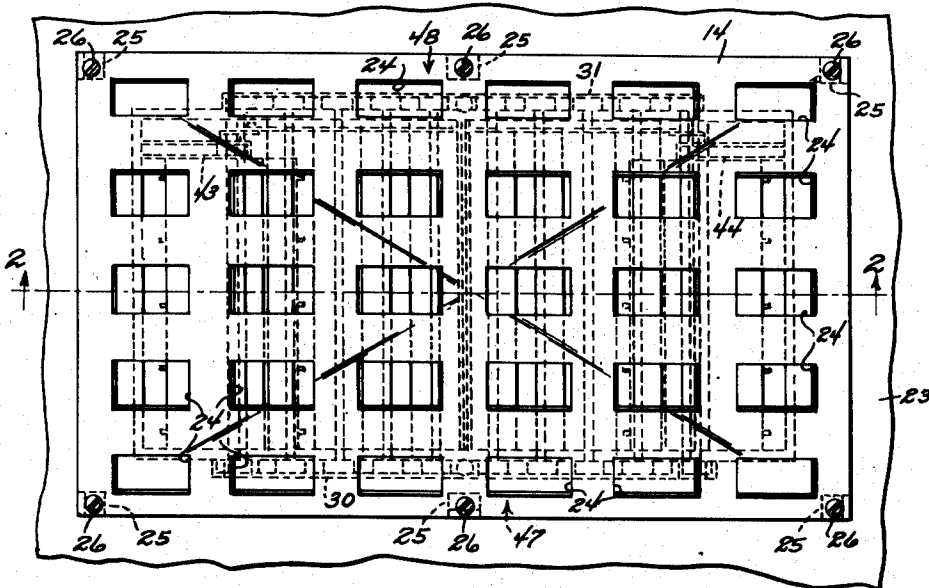
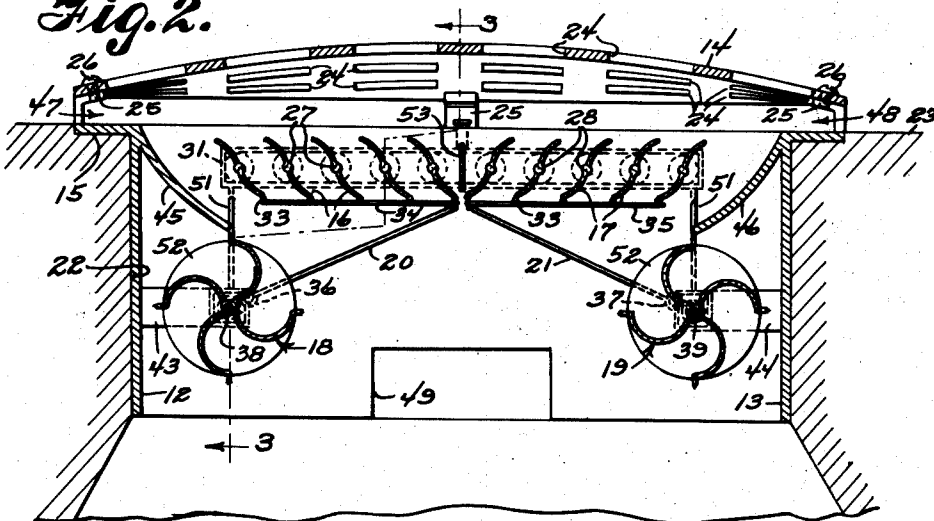


Fig. 2.



INVENTORS
Slavin F. Broussard
Gordon R. Broussard
BY Victor J. Evans et al.

ATTORNEYS

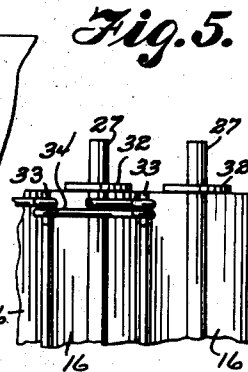
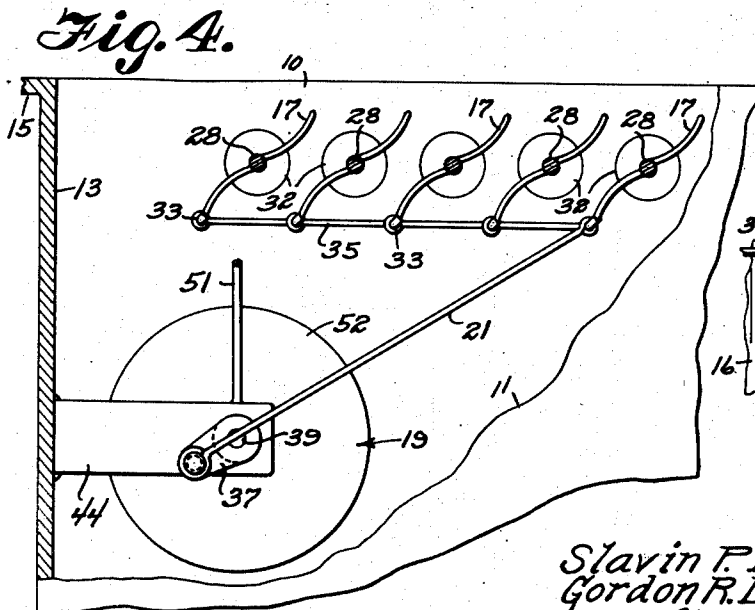
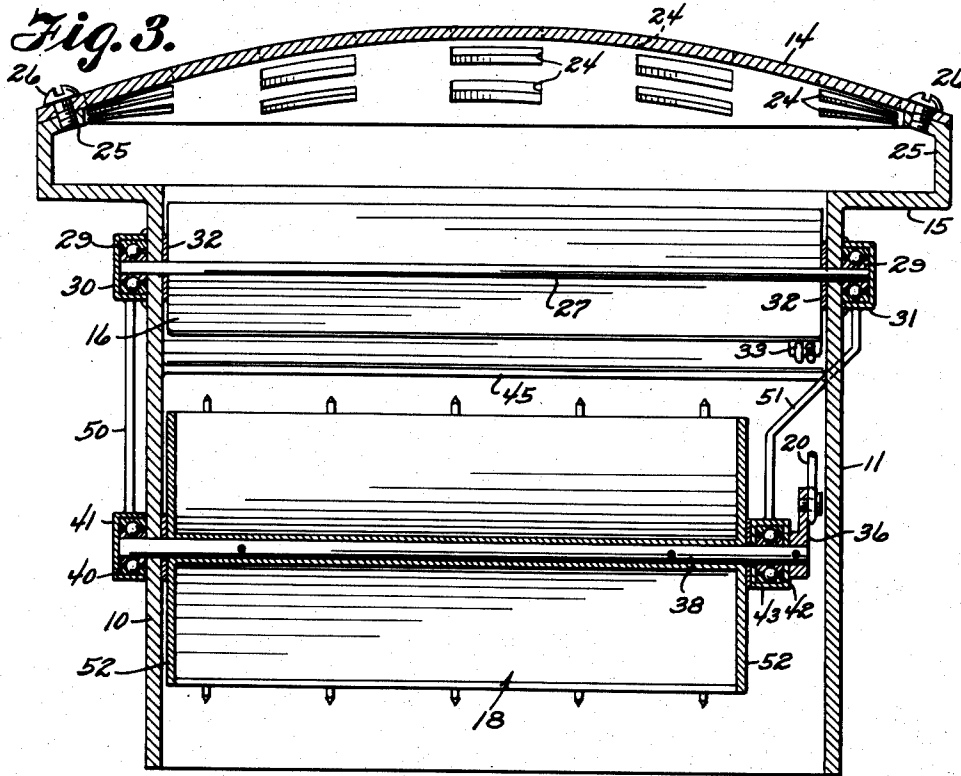
July 14, 1953

S. P. BROUSSARD ET AL
STREET GUTTER DRAINAGE GRILLE

2,645,302

Filed Nov. 1, 1950

2 Sheets-Sheet 2



INVENTORS
Slavin P. Broussard
Gordon R. Broussard
BY *Nieto J. Enns*

ATTORNEYS

UNITED STATES PATENT OFFICE

2,645,302

STREET GUTTER DRAINAGE GRILLE

Slavin P. Broussard and Gordon R. Broussard,
New Iberia, La.

Application November 1, 1950, Serial No. 193,332

3 Claims. (Cl. 182-6)

1

This invention relates to drains, sewers, and the like particularly as used at street corners and at the edges of sidewalks for the purpose of taking off excess water, and in particular a grill having a plurality of pivotally mounted blades actuated by a water wheel therein for efficiently carrying off leaves and other refuse accumulating over the conventional sewer grill with unusually heavy rainfall.

The purpose of this invention is to provide means in a drain or sewer for relieving congested grills where leaves and the like accumulate too rapidly to be carried away with the usual functioning of the drain.

In numerous instances property is damaged by overflowing water resulting from accumulations of leaves on grills of street sewers and drains and the average street cleaning force of a city is not sufficient to relieve these conditions. With this thought in mind this invention contemplates a street sewer or drain having actuating elements therein and water wheels positioned to be rotated by water flowing through the drain for operating the actuating elements whereby the continuous movement of the actuating elements breaks up the accumulation of the leaves sufficiently for the leaves to pass through the drain.

The object of this invention is, therefore, to provide means for incorporating constantly moving elements in a sewer or drain with the elements actuated by water flowing through the sewer or drain whereby accumulations of leaves, refuse, and the like are mechanically worked through the sewer or drain.

Another object of the invention is to provide mechanically operating elements in a street sewer or drain that are automatically operated by water flowing through the sewer or drain.

A further object of the invention is to provide a grill for street sewers or drains having water actuated elements therein for relieving congestions of leaves and the like, which is of a comparatively simple and economical construction.

With these and other objects and advantages in view the invention embodies a grill having a substantially rectangular shaped housing with a cover having openings therethrough and with water wheel actuated pivotally mounted blades below the cover and positioned to work leaves and other substantially solid matter carried by water passing therethrough through the grill.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings wherein:

Figure 1 is a plan view showing the cover of

2

the grill with the operating parts shown in dotted lines.

Figure 2 is a longitudinal section through the grill taken on line 2-2 of Fig. 1.

Figure 3 is a cross section through the grill taken on line 3-3 of Fig. 2 with the parts shown on an enlarged scale.

Figure 4 is a detail showing a section similar to that shown in Fig. 2 and also with the parts shown on an enlarged scale and illustrating the crank at one end of the water wheel and the connection of the crank to the pivotally mounted blades.

Figure 5 is a detail showing a sectional plan through the upper part of the grill showing the connections at the ends of the blades with parts of the blades broken away and with the mounting elements omitted.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved self-cleaning drain grill of this invention includes a rectangular shaped housing having side walls 10 and 11, end walls 12 and 13, a cover plate 14 mounted on an enlarged section 15 at the upper end of the housing, a plurality of pivotally mounted blades 16 and 17, and water wheels 18 and 19 which are connected to the blades by rods 20 and 21.

In the design shown the housing is positioned in an opening 22 in the ground or in a gutter or street as indicated by the numeral 23 and the cover plate 14, which is provided with spaced openings 24, is secured to lugs 25 extended around the upper edge of the section 15 by bolts 26.

The blades 16 and 17, which are preferably S-shaped in cross section, are carried by transversely disposed shafts 27 and 28 which extend through openings in the side walls 10 and 11 of the housing and are journaled by bearings 29 in cup shaped sections 30 and 31 on the outer surfaces of the side walls of the housing, as shown in Fig. 3. Washers 32 may be provided between the ends of the blades and inner surfaces of the walls of the housing, as shown.

The lower edges of the blades 16 are pivotally connected at the points 33 to a rod 34 and one end of the rod 34 is pivotally connected to the rod 20. The lower edges of the blades 17 are similarly connected to the rod 35 which is pivotally connected to the rod 21.

The rods 20 and 21 are pivotally connected to cranks 36 and 37 on the ends of the shafts 28 and 29, of the water wheels 18 and 19, respectively, the shafts being journaled, at one end with bearings 40 of cup shaped members 41 on

3

the side plates 10, and at their opposite ends in bearings 42 in arms 43 and 44, respectively, extended inwardly from the end plates 12 and 13.

Baffles 45 and 46 extend downwardly and inwardly from the upper corners of the end plates 12 and 13 thereby providing guides for directing the water to the buckets held by the blades of the water wheels, as illustrated in Fig. 2.

The enlarged upper section 15 of the housing is provided with openings 47 and 48 at the ends and the side walls 10 and 11 are provided with openings 49 which provide vents for the escape of air accumulating in the housing.

The bearings of the blades and water wheels may be provided with lubricant circulating tubes 50 and 51 and the water wheels may be provided with hoops or guards 52 to prevent damaging the vanes or buckets thereof.

With the parts arranged in this manner the grill housing of this type may be inserted in street gutters or at other low points where it is desired to rapidly drain off surplus water and as leaves accumulate in the grill the continuously operating blades break up the accumulation and work the leaves through the housing.

The grills may be formed in sections and the blades actuated by one or two water wheels and where two sets of blades and wheels are provided as illustrated in Figure 2 a dividing blade is provided, as indicated by the numeral 53. It will also be understood that any suitable number of blades or sets of blades and water wheels may be used in combination.

It will be understood that other modifications may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. In a street gutter sewer or drain, the combination which comprises a substantially open vertically disposed housing having an enlarged upper end, a cover plate having openings there-through mounted on the upper end of the housing, transversely disposed blades pivotally mounted in the housing, rods connecting the blades, water wheels journaled in the housing and having eccentric arms extended therefrom, and rods connecting the eccentric arms of the water wheels to the rods connected to the said blades whereby rotation of the water wheels by water passing through the housing actuates the blades.

2. In a street gutter sewer or drain, the com-

4

bination which comprises a substantially open vertically disposed housing having an enlarged upper end, a cover plate having openings there-through mounted on the upper end of the housing, transversely disposed blades pivotally mounted in the housing at points substantially midway of the width thereof, rods pivotally mounted on the edges of the blades for connecting the blades, water wheels journaled in the housing and having eccentric arms extended therefrom, and rods connecting the eccentric arms of the water wheels to the rods connected to the said blades whereby rotation of the water wheels by water passing through the housing actuates the blades.

3. In a street gutter sewer or drain, the combination which comprises a substantially open vertically disposed housing having an enlarged upper end, a cover plate having openings there-through mounted on the upper end of the housing, transversely disposed blades pivotally mounted in the housing at points substantially midway of the width of the blades, said blades being substantially S-shaped in cross section, rods pivotally connected to edges of the blades, water wheels journaled in the housing, positioned at opposite ends thereof and having eccentric arms extended therefrom, guide baffles extended from points in the upper ends of the housing for guiding water to said water wheels, and rods connecting the eccentric arms of the water wheels to the rods connected to the said blades whereby rotation of the water wheels by water passing through the housing actuates the blades, said rods holding the blades in inclined positions with the blades on opposite sides of the center inclined outwardly from the lower edges thereof.

SLAVIN P. BROUSSARD.

GORDON R. BROUSSARD.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
664,833	Collins	Jan. 1, 1901
1,081,497	Goetz	Dec. 16, 1913
2,117,887	Holland	May 17, 1938
2,473,279	Crocker	June 14, 1949
2,485,547	Blau	Oct. 25, 1949

FOREIGN PATENTS

Number	Country	Date
31,011	Norway	Aug. 16, 1920