A. THOME.

FILTERING APPARATUS.

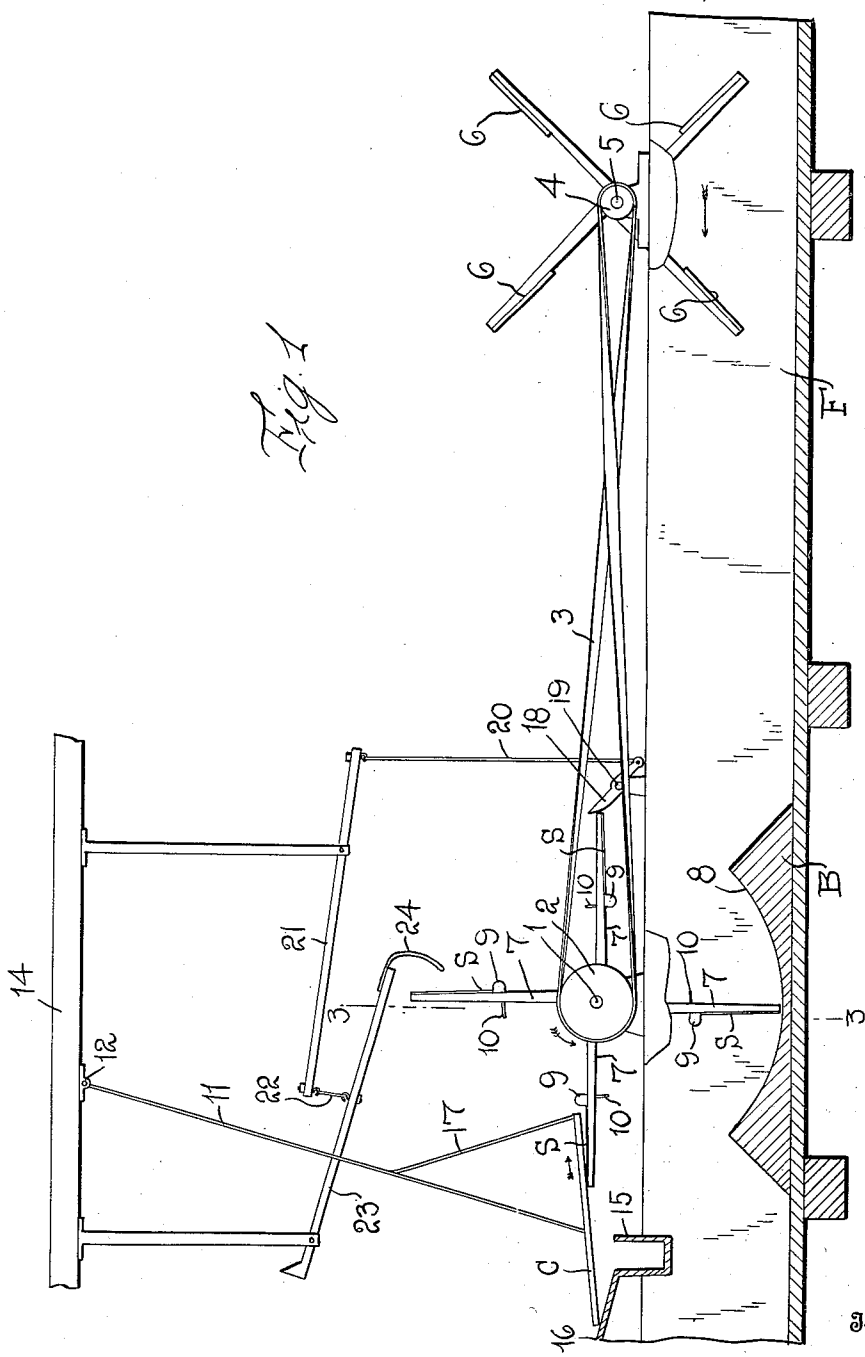
APPLICATION FILED OCT. 16, 1916.

1,218,818.

Patented Mar. 13, 1917.

2 SHEETS—SHEET 1.

Fig. 1



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2 SHEETS—SHEET 2.

Fig. 2

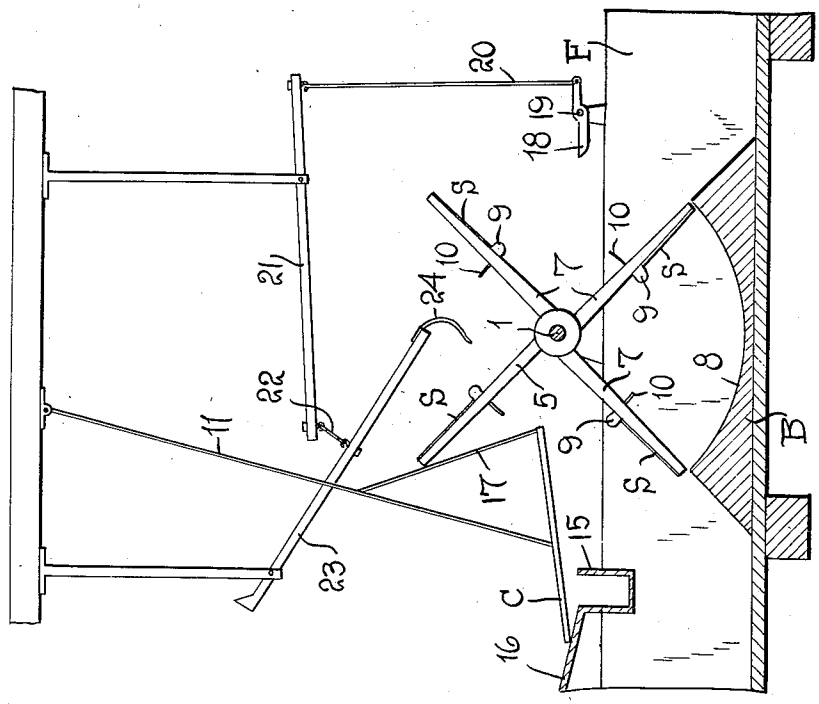


Fig. 3

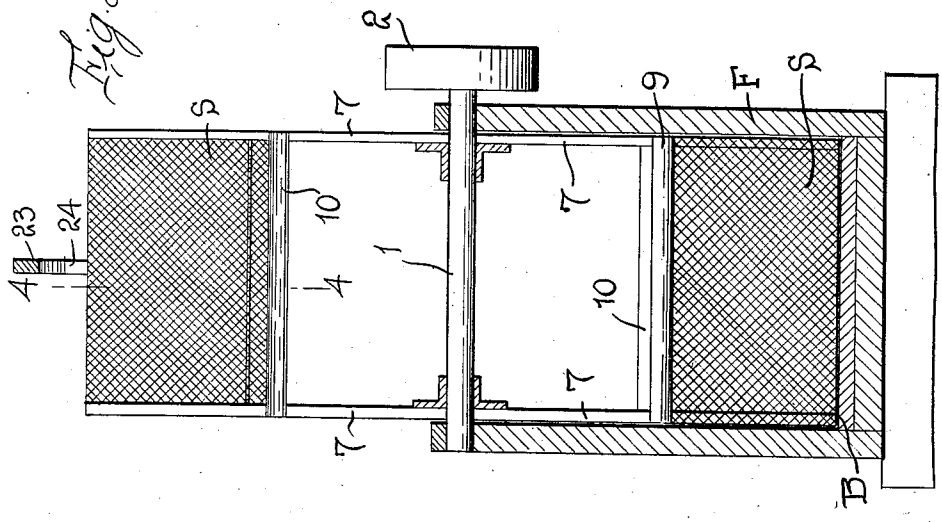
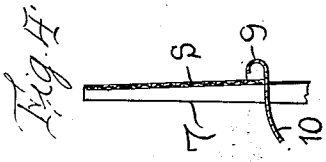


Fig. 4



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FILTERING APPARATUS.

1,218,818. Specification of Letters Patent. Patented Mar. 13, 1917.

Application filed October 16, 1916. Serial No. 125,944.

To all whom it may concern:

Be it known that I, ANTON THOME, a citizen of the United States, residing at Glenwood Springs, in the county of Garfield and State of Colorado, have invented certain new and useful Improvements in Filtering Apparatus, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in filtering apparatus and it is an object of the invention to provide a novel and improved device of this general character adapted to be positioned adjacent the entrance opening of a main of a water system or the like and operating to prevent the flow into said main of any floating articles such as leaves or other bodies which may be carried toward the main.

It is also an object of the invention to provide a novel and improved device of this general character including a plurality of movable screen or filtering elements and wherein said elements are caused to move under the influence of the water flowing to the main.

It is also an object of the invention to provide a novel and improved device of this general character including a screening element together with means coacting with said element for vibrating the same in order to prevent the adherence thereto of leaves or other objects.

A still further object of the invention is to provide a novel and improved apparatus of this general character wherein a movable screening element is employed and adapted to deliver to a carrier and wherein said screening element is provided with means for discharging water upon said carrier in order to wash from said carrier the objects delivered thereto by the screening element.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved apparatus whereby certain important advantages are attained and the device is rendered simpler, less expensive and otherwise more convenient and advantageous for use, all as will be hereinafter more fully set forth.

The novel features of the invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein—

Figure 1 is a view partly in longitudinal vertical section and partly in elevation of a screening element constructed in accordance with an embodiment of my invention, the flume comprised in said apparatus being shown in fragment;

Fig. 2 is a side elevational view of the apparatus as herein embodied with certain of the parts omitted and showing certain of the parts in a second position, the coacting flume being shown in fragment;

Fig. 3 is a sectional view taken substantially on the line 3—3 of Fig. 1; and

Fig. 4 is a sectional view taken substantially on the line 4—4 of Fig. 3.

As disclosed in the accompanying drawings, F is a flume of any preferred construction and dimensions and which is adapted to lead from a source of water supply such as a stream to a main or pressure pipe of a water system such as is particularly employed in mountain water systems.

1 denotes a shaft disposed transversely of the flume F and supported thereby at a predetermined point thereabove, and as herein disclosed, said shaft 1 is provided with a pulley 2 around which is disposed the crossed belt 3 also directed around a pulley 4 fixed to a shaft 5. The shaft 5 is disposed transversely of the flume F at a predetermined point thereabove and in advance of the shaft 1, and said shaft 5 is provided with the paddles 6 adapted to extend within the flume F whereby it will be perceived that the water flowing through said flume will rotate the shaft 5 in such a direction as to cause the shaft 1 to rotate in a reverse direction in order that the screening elements S operatively engaged with said shaft 1 will travel within the flume F against the flow of the water through said flume.

As herein embodied, each of the screening elements S comprises a reticulated fabric secured to the outer end portions of a pair of arms 7 radiating from the shaft 1 and of a width substantially equal to the width of the interior of the flume F.

The bottom of the flume F is provided with a block B, the upper face of which

being provided with a recess or depression 8 disposed longitudinally of the flume F on a curvature concentric to the shaft 1, and the arms 7 are of such a length as to bring the outer marginal portion of the screening element S in close proximity to the upper face of said block B as the same passes within the flume F so that the passage of leaves or other floating objects beyond the element S, while within the flume, is substantially entirely eliminated.

Each pair of arms 7 is so disposed relatively to the adjacent pairs of arms as to assure the coaction of one screening element S with the block B at the time a second element S moves away from said block, whereby it will be perceived that the flow of water through the flume F is at all times obstructed by screening element S.

Positioned adjacent the inner marginal portion of the screening element S and disposed entirely therealong and supported by the adjacent arm 7, is a bucket 9, said bucket being forwardly directed when the same is within the flume F and has its rear face open so that as the same passes through the flume F and the water therein, it will carry a quantity of water upwardly from the flume F, so that when the matter collected by the screening element S is discharged or delivered to the carrier C, the water within the bucket 9 will also be discharged upon said carrier and whereby the matter deposited upon the carrier C will be washed down thereon. In order to facilitate the proper delivery of the water upon the carrier C the inner marginal portion of the bucket 9 is provided with the apron 10 extending beyond the opposite face of the screening element S, as is thought to be clearly disclosed in the accompanying drawings and more particularly in detail in Fig. 4.

The carrier C comprises a flat plate preferably of a length in excess of the width between the arms 7 and which has operatively engaged with each of the end portions thereof a hanger 11 pivotally engaged, as at 12, with a supporting frame work 14 positioned a predetermined distance above the flume F and supported in any desired manner (not shown). The pivotal point 12 occupies a vertical plane inwardly of the outer marginal portion of a screening element S when said screening element is in substantially a horizontal plane so that the inner portion of said carrier C will overlie said screening element S, as is thought to be clearly disclosed in Fig. 1 of the drawings, so that the matter carried by the next succeeding screening element S will be discharged upon the carrier C.

When the carrier C is substantially at the limit of its movement toward the shaft 1, it is disposed on such an inclination relative to the flume F as to deliver the matter collected thereon within the sluice 15 disposed transversely of the flume F and positioned adjacent the upper portion thereof. Inclined downwardly toward the sluice 15 is a drip board 16 which serves to catch any matter that may fall off of the end of the carrier C as it travels in a direction away from the shaft 1 to permit a screening element S to pass therebeyond.

The inner portion of the carrier C at each of the hangers 11 is connected by a brace rod 17 with which an arm 7 is adapted to contact, said brace 17 serving as a means in connection with the coacting arm 7 to force the carrier C out of the path of travel of a screening element S as the shaft 1 is rotated.

18 denotes a trigger in the line of travel of one set of arms 7 at a side of the flume F and which is mounted intermediate its length, as at 19, for rocking movement, whereby it will be perceived that as the forward end of said trigger 18 is forced upwardly by contact of an arm 7 therewith, the rear portion will move downwardly.

Operatively engaged with the rear portion of the trigger 18 is an upstanding rod 20 which is also operatively engaged with the rear end of the lever 21 pivotally supported intermediate its length for rocking movement. The forward end portion of the lever 21 is operatively engaged, as at 22, with the rocking bar 23 extending rearwardly of the flume F and provided at its rear end with the flexible lash or striking member 24 preferably of rubber.

It will be noted that as the rod 20 is depressed, the bar 23 will be elevated and as a bar 7 passes the trigger 18 the bar 23 will have an abrupt drop toward a screening element with the result that said bar 23 and the lash 24 carried thereby will strike the element S and vibrate the same in such a manner as to assure the leaves or other articles lifted by said element S to be discharged upon the carrier C. It will also be understood that the downward movement of the rod 20 is such as to assure a sufficient rise to the lower end of the bar 23 to permit a screening element S to pass thereunder.

It will be obvious that my invention is susceptible of some change and modification without material departure from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice, except as hereinafter claimed.

I claim:

1. In combination with a runway for water, a screening element movable into and out of said runway, means for imparting movement to said screening element, and a swinging carrier upon which said element discharges, said swinging carrier being pro-

vided with a brace member with which the screening element contacts for forcing said carrier away from the screening element.

2. In combination with a runway for water, a screening element movable into and out of said runway, means for imparting movement to said screening element, a swinging carrier upon which said element discharges, and a bucket carried by said element and also discharging upon the carrier.

3. In combination with a runway for water, a screening element movable into and out of said runway, means for imparting movement to said screening element, a swinging carrier upon which said element discharges, water lifting means carried by the screening element and also discharging upon the carrier, and a sluice into which said carrier discharges.

4. In combination with a runway for water, a screening element movable into and out of said runway, a member adapted to strike said element when in a position out of the runway, and automatic means for moving said member out of the path of travel of the element, said striking member being provided with a flexible lash.

5. In combination with a run-way for water, a screening element movable into and out of said run-way, means for imparting movement to said screening element, a movable striking member supported adjacent the screening element, and contacting therewith by gravity, and means under control of the screening element for imparting movement to the striking member in a direction away from the screening element.

6. In combination with a run-way for water, a screening element movable into and out of said run-way, means for imparting movement to said screening element, a rocking bar coacting with the screening element for vibrating the same, a lever operatively engaged with the bar, and means operated by the screening element for imparting movement to the lever to throw the rocking bar in a direction away from the screening element.

7. In combination with a run-way for water, a screening element movable into and out of said run-way, means for imparting movement to said screening element, a rocking bar coacting with the screening element for vibrating the same, a lever operatively engaged with the bar, a trigger extending within the path of travel of the screening element, and an operative connection between the trigger and the lever, whereby the rocking bar is moved in a direction away from the screening element when said trigger is operated by contact of the screening element therewith.

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

ANTON THOME.

Witnesses:
WM. K. BUCKLES,
PETE THOME.