SELF-CLEANING SCREEN FOR WATER SUPPLY SYSTEMS

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The screening device described below was developed to remove foreign material from the irrigation water going into the overhead lines at the Forest Service nurseries in Region 6 (Wind River in Washington and Bend in Oregon). The water at both places would be unusable for overhead irrigation without screening of filtering. At Bend it is taken from an irrigation ditch and carries weed seeds, algae and other debris common to such ditches. At Wind River it is taken from a stream that has a great variation of flow between low water and flood and carries a variety of material from silt and algae to sticks and leaves. Here the nursery line also serves a community as well as the nursery and for years prior to the installation of the new screen the water was put through a large and expensive filter bed. This filter, however, was so unsatisfactory and allowed so much dirt to_ get into the pipes that at times the water was unusable for either purpose.

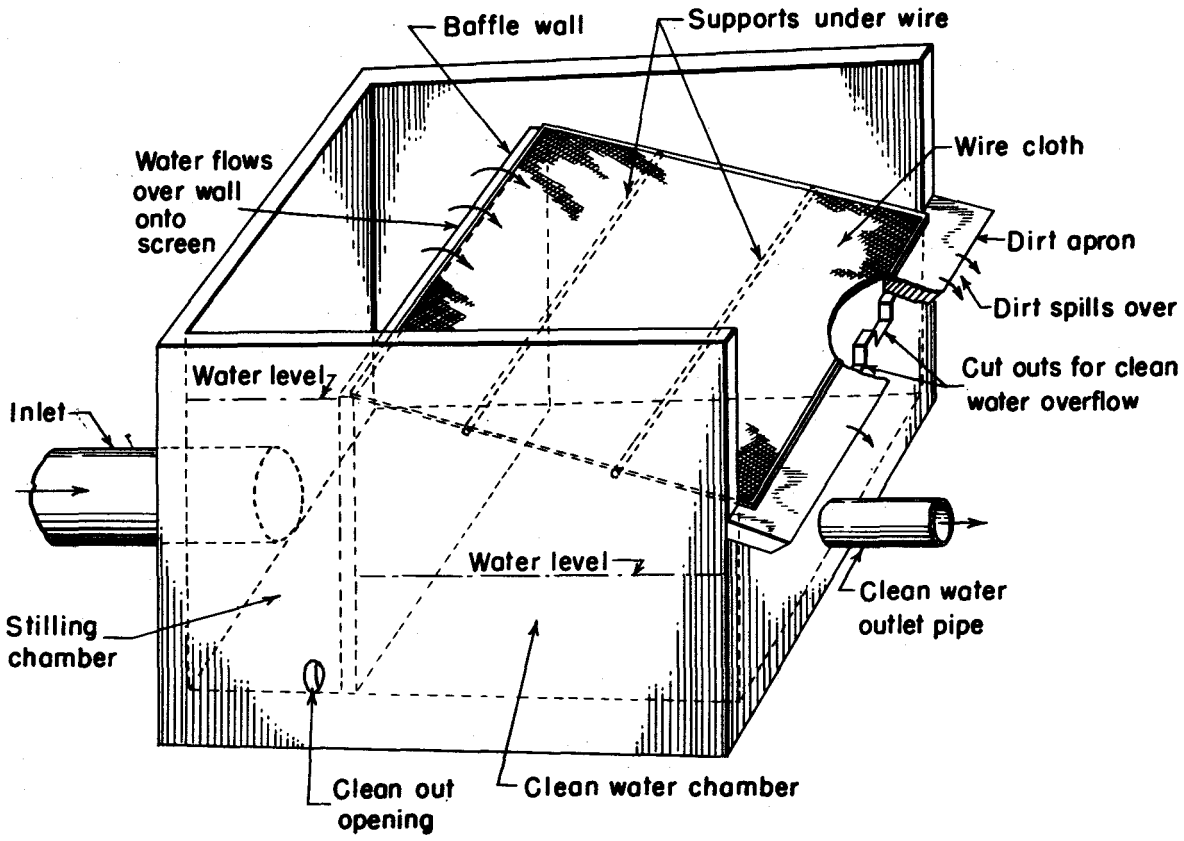
In its simplest form, the new screening device consists of a concrete or plank box covered with Fourdrinier wire, which we bought at junk copper prices from a paper mill. Fourdrinier wire is flat-faced copper wire cloth, 60 mesh (3600 holes per square inch). We placed it smooth side up in the box at a slope of 15 to 20 degrees with suitable supports to prevent sagging. The mesh is so fine and the surface so smooth that no foreign material can catch on it. The action of the water continually washes it clean so that it never becomes clogged. Dirt and excess water pass on over it and nothing but clean water passes through it. Incoming water enters through an inlet into the bottom of the stilling chamber at the back of the box. The clean water outlet is through a pipe line at the bottom of the front wall of the box. Operation of the screen is not affected by the amount of water entering the stilling chamber or the amount of water passing out through the clean water outlet. It can be wide open or entirely closed. When the clean water outlet is closed, all water passes through the waste water outlet. Dirt and debris on the surface of the screen is continually washed down and over the water apron.

The screen at Bend has given satisfactory. and care free operation for seven years and the one at Wind River has replaced the filter bed and given carefree service for three years.

The measurable saving in cost at Wind River has been about 1, 000 man hours per year on service to the overhead lines alone. Two or more men

were needed to keep the spray nozzles open whenever the irrigation system was operating. The saving at Bend has been as much or more than at Wind River.

It is suggested that the same principle could be used at the headworks of campground water systems. It might also serve to remove weed seeds from water distributed in open irrigation ditches to farm fields.



SELF CLEANING SCREEN
FOR PIPED WATER SUPPLY SYSTEM