a basin of this size could be made to contain more than $3\frac{1}{2}$ cubic yards and still permit it to carry off any street water. Since $3\frac{1}{4}$ was the average contents of the basins cleaned, it would appear that all of them, before cleaning, had reached this condition of limit of capacity, and it would, therefore, seem quite probable that in the case of many of them, they had ceased altogether to serve as catch basins some time before being cleaned.

In the Boston parks it has been specified at times that the contractors may have the choice of using either brick or concrete in constructing basins, and they have usually chosen to use brick.

In Boston they had tried to find some form of mechanical cleaner, but had not discovered any which was practicable. There, and in Cambridge as well, they had tried a suction device known as the Otterson auto eductor. This device was described by Philip W. Taylor, who stated that it was an invention of George W. Otterson, of Seattle, Wash., and consists of a centrifugal pump, sand eductor, dump body and the necessary fittings, all mounted on a Kelly Springfield motor truck. The dump body is a steel box nine feet long, six feet wide and three deep, and is divided into two chambers, one holding water

-172 Cast Iron

Wash Stone

3-3'

When the settling chamber is nearly full, the truck is driven to the dump and emptied. Mr. Taylor stated that the commissioner of public utilities of Portland, Ore., reported that in a test of 41/2 hours' duration, 84 basins were cleaned, and that 137 basins were cleaned in an actual day's work of eight hours. The material removed from the 84 basins during the test totalled 13 cubic yards, or a little over 4 cubic yards per basin. In this connection it should be stated that "in the West the large curb openings are absent and all of the water passes through the grate openings, therefore the material is much easier to handle than in the East, where almost anything in size up to a football may be found." One criticism made by a city engineer of this and similar machines is that the entire working part of the machine is idle a large part of the day while going to and from the dump, and he suggested the advisability of having the pumping contrivance in a vehicle separated from the body or tank which receives the dirt, so that one excavating contrivance could be used with two or three dirt bodies.

In New Bedford, Mass., the type of basin which is being used at present is 6 feet inside diameter and 6 feet

Concrete Block Catch Basins as used in New Bedford.

for liquefying the dirt in the catch basin, the other for receiving the dirt so removed. The latter chamber is divided by vertical steel baffle plates, one foot less in width than the wagon body and staggered so that the water pumped from the basin must flow around the baffles as it advances to the back of the machine, the chamber thus acting as a sedimentation tank. These baffles are hung on horizontal pipes at the top of the body and are free to swing so that when the load is being dumped the material may slide under them. Between this settling chamber and the water chamber is a steel plate screen through which the water passes.

The eductor consists of an orifice and throat somewhat similar to a sand ejector. The tank having been filled with about 400 gallons of water, the truck is driven to a catch basin and the eductor let down into the basin. The pump forces this water through hose to and through the eductor. In passing through it sucks up the dirt from the basin, this dirt being made more or less liquid by discharging a part of the water through a pipe terminating in a nozzle which is operated to stir up and soften the material. The same water is used over and over again after depositing the dirt in the settling chamber. Two Styles of Catch Basins used in Boston.

deep and is built up of concrete blocks 16 inches by 8 inches by 5 inches, which are manufactured by the city, the last three courses being built with specially bevelled blocks to reduce the size to 5 feet diameter. (See Fig. I). The top is covered with a reinforced concrete slab 5 inches thick and 5 feet square, made of one part cement, one and one half peastone and one and one-half sand, with the addition of about two quarts of hydrated lime to each bag of cement. In this city, the basins are cleaned on an average of twice a year, although some are cleaned more frequently than others. The cost of cleaning is about \$2.50 each.

In Fitchburg, the basin outlet is usually 8-inch pipe placed 3 feet above the bottom, giving a storage capacity of about 2¹/₄ cubic yards. Unless the basin discharges into a strictly storm sewer, a cast-iron trap is used consisting of a flap valve to prevent odors coming from the sewer and a hood to prevent sticks or other obstructions from getting under the flap valve. On account of the many hills in that city, it is necessary to bank the grates or build a dam on the lower side in order to conduct the water into the basin. This was not considered an ideal way, and a ribbed surface grate was designed, having



Sidewalk

Volume 32.

bars

of e

of t

dow

thro

the

etc.

still

ope

mad

do

Whi

Du

21/4

Was

cub

unt

of

sho

tim

dur

Will

of

eng

bui The

Cov Wa Per Wa

fro: D sto the

EN

To

Ser

Wa

No

Tw

is,

tio

rea

an

da

th

ab

dr

qu

II

M

int