



成るべく英文雜誌から參考になる簡単な圖解入りの工事記事を全頁其儘の版にし
て別に邦文全譯を附して見本帳にする。(英文は次頁)

Engineering News Record 14, 2, 1929

(1) 下水中にある硬塊 清淨裝置

最近紐育市なるドール會社は、一種の自動清淨機を提供した。下水施設に設置せらるゝ、沈澱槽の代用に供するもので、ドール式硬塊清淨機と稱して居る。是が裝置たるや獨り沈澱槽の代用を爲すに止まらず、自動的に硬塊を収集し、洗滌し、而して乾かしたる後、適當なる容器に放出するを得るのである。本機は圖に示せる如き簾狀篩の眞下に据付たる硬塊蒐集槽、蒐集機、硬塊洗淨槽及び洗淨機の四個を主要とするものである。更に是を細説せんか、蒐集之は方形なる淺き箱にして、滔々流入する汚水の流速を遮りて減殺し、定められたる大きさの硬塊を悉く槽内に沈下せしむるの働きを爲し、蒐集機はドール式牽引清淨機の變形したるものと見れば差支なく。排除器は翼あり、是にて槽側へ硬塊を押しやり、放射狀に取付けたる動臂の端邊に裝置せる拘上げ器に依り硬塊を拘ひ上げて、硬塊槽内に投入し、而して更に之より傾斜せる狹隘なる長方形の洗淨溝に送出するのである。洗淨機は往復動をなし、機が有する熊手は、傾斜せる溝底を引掻く際、硬塊を奔弄しつゝ硬塊に附着せる有機物を除去するのである。斯くして除去されたる有機物は、洗淨機の徐かなる攪拌に依り、水中に浮游しつゝ、有機物歸復溝を経て蒐集槽に戻り、又た洗淨されたる硬塊は、無臭の乾きたる塊となりて、傾斜せる洗淨溝より硬塊收容器内に投げ入れらるゝのである。

(2) 3½立方碼掬取の新式 のデイズル掘鑿機

米國ウイスニンシ州ミルウォーキー市のハーニツシユフェーガー會社に於て、同社製代表機械の列に加へたる、新式の掬探り掘鑿機がある。容量は3½立

方碼(約五合)。其動力は百七十五馬力、六氣筒のデイズル機關であるが、瓦斯倫或は電氣發動機を裝置する事も出来る。本機は掘鑿機ではあるが牽掘機或は自動起重機にも轉用する事が出来る。此新式掘鑿機は第900型と稱し、其設計は曾て同社が建造せる四基の小型なる鑄鋼機に類似せるもので、廻轉臺の床樁、車體及び無限軌道の機體は、何れも一個の燒鈍したる鑄鋼製にして、其支面部は、完全に作工されてある。廻轉臺の床樁の重量は17,000封度にして其全長は19呎6吋である。

上部の機體を構成する主要機械の全部には輻子承を裝置し、而して二座より成る四組の轉環錐形輻子は減摩軸承を備へて、廻轉機體の總重量を支持するのである。掘鑿機の動臂は兩桁にして、之に拘探器用の動臂を裝置し、牽引機の聯動機は總て堅牢なる鑄鋼製の兩内のマイル・バツス中に包容せられ。又た下部の機體を構成する聯動機は取換への出来る、砲金製の^{プッシュ}嵌輪がある。更に又た無限軌道は聯動機にて操作し、操舵雲には制動機を備へてある。本機的全副員は14呎6吋にして、其全長は25呎である。

(3) 混礙材の重量と容 量をする計量機械

米國ペンシルバニア州イリー市なるイリー鋼材製作會社より販賣するアグレ・メーター(混礙材計量機)は一個の機械にて混礙土の基調たる砂礫(碎石)の重量と容量を計量する事が出来る新式の機械である。本機は同社の製作に係る總ての混合機は勿論、他の何れの會社にて製作したる混合機に對しても、取付の出来る便利なるものである。本機は組立たる儘搬送する事が出来るのであるから、工事場に於て組立を爲すが如き手数を要せない。容量兩の大きさは砂の方は9立方呎より19立方呎迄。礫及び碎石の方

は 10.2 立方呎より 29 立方呎迄である。重量計器は普通として、5,000 剎度を計量するものであるが更に大形の物にても、注文に応じて提供するとの事である。

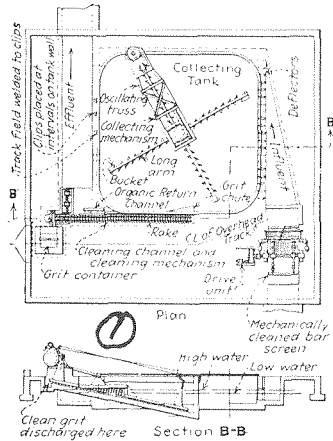
本機の操縦は唯だ 1 人の従業者にて出来るのみならず、眼前に機械各部の作用を注視する事も出来るのである。砂や礫を函に詰込むには商棒

(45頁へつゞく)

① New Developments

Self-Cleaning Grit Chamber for Sewage Plant

An automatic, self-cleaning grit chamber to be known as the Dorr Detritor, has been introduced by the Dorr Company, New York City, for general use in place of the conventional grit-settling troughs at sewage plants. The name has been taken from the word "detritus," which is usually used to refer to the inorganics in sewage. The machine is said to perform all the functions of the grit-settling channels and in addition



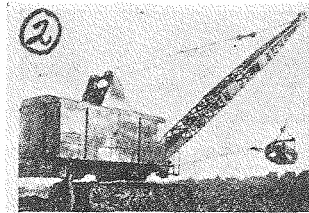
automatically collects and washes the grit, delivering it finally in a clean, dewatered condition to a suitable receptacle. From the accompanying illustration it will be noted that the detritor is located directly after the bar screen and consists essentially of four chief parts—a grit-collecting tank, a collecting mechanism, a grit-cleaning channel and a cleaning mechanism.

The purpose of the square and shallow collecting tank is to reduce the velocity of the incoming sewage to such an extent that practically all of the particles of grit of a predetermined size may settle out within the bounds of the tank. The collecting mechanism is a modification of the Dorr traction clarifier. The plow blades move the grit outward toward the tank sides, where it is picked up by the buckets on the ends of the radial arms and deposited in the grit chute, which discharges the grit

into the narrow, rectangular inclined cleaning channel. The cleaning mechanism has a reciprocating motion, the rakes just clearing the inclined bottom and not only advancing the grit toward the point of discharge but also imparting to it a turning over action which releases entrained organic matter. This released organic matter, which is kept in suspension by the gentle selective agitation of the cleaning mechanism, flows back into the collecting tank through an organic return channel in the dividing wall. The washed grit is discharged from the inclined cleaning channel in a dewatered, odorless condition into a grit container.

② New Diesel Excavator in 3½-Cu.Yd. Size

A new excavator of 3½-cu.yd. capacity has been added to the line of machines manufactured by the Harnischfeger



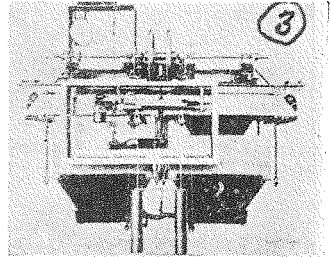
Sales Corporation, Milwaukee, Wis. It is powered by a 175-hp. six-cylinder diesel engine, although it is available with gasoline or electric drive. It is also convertible from shovel to dragline and to crawler crane. It is known as Model 900 and its design closely resembles that of the four smaller cast-steel machines built by this manufacturer. The revolving frame, car body and crawler frames are single piece annealed steel castings, fully machined at the bearing points. The revolving frame weighs 17,000 lb. and its over-all length is 19½ ft.

Roller bearings are used throughout the main machinery of the upper structure, and the four double sets of swiveled, conical steel swing rollers, which carry the weight of the revolving structure, are also provided with anti-friction roller bearings. A box girder shovel boom with outside dipper sticks is used. All gears of the traction mechanism are completely inclosed in heavy cast-steel gear cases and run in a bath of oil. Bearings in the lower structure are provided with renewable bronze bushings. Steering brakes are provided, and the crawlers are gear driven. The over-all width of the machine is 14½ ft. and the over-all length 25 ft.

③ Proportioning Aggregates by Weight or Volume

Measuring aggregates for concrete on the basis of either weight or volume is possible with the new combination volume-weighting "AggreMeter" of the Erie Steel Construction Company, Erie, Pa. This can be attached not only to

all types of bins made by the company but also to bins of other manufacture. It is shipped complete, no assembly being necessary in the field. Capacities of the boxes by volume are: Sand, 9 to 19½ cu.ft.; stone, 10.2 to 29 cu.ft. The usual scale capacity is 5,000 lb., but



larger scales can be supplied when required.

Only one operator is necessary for the plant, and he is so placed that all operating members are directly visible. The rack-and-pinion gates for filling the boxes may be operated separately or together. Automatic draw-off doors are connected in a similar manner, and close automatically when the material is dumped.

④ New Variable-Speed Engine for Power Shovel

The new accelerator-controlled power plant used on the 1929 crawler excavator equipment of the Northwest Engineering Company, Chicago, is a distinct departure from the more usual fixed-speed engines. The difficulty in securing proper carburetion and gas distribution for all speeds and all loads in a machine such as a power excavator is claimed to have previously made it impracticable to use variable-speed engines for its type of work. On this new power plant special manifolding and carbureting devices have been installed which give the engine an effective pull at any speed from 450 to 1,200 r.p.m.; in addition it is claimed that the power plant has the ability to respond to any sudden change of speed.

Full manual control of the engine is obtained by movement of a lever which is a hinged portion of one of the regular control levers so that the operator need not remove his hand from the control in order to vary the engine speed. It is claimed that on tests a shovel using this new power plant has shown a 15 to 20 per cent increase in yardage output when working as a variable-speed unit over that when operating at a fixed speed. One of the principal advantages of the variable-speed engine is that it may be opened up to top speed on swinging or hoisting operations, thus simulating steam machinery. Another important advantage comes from the ability to slow down the engine when extremely sensitive handling is necessary, such as setting steel pipe, or on clamshell work where slow speed is desired to place the bucket accurately or to close it easily.