

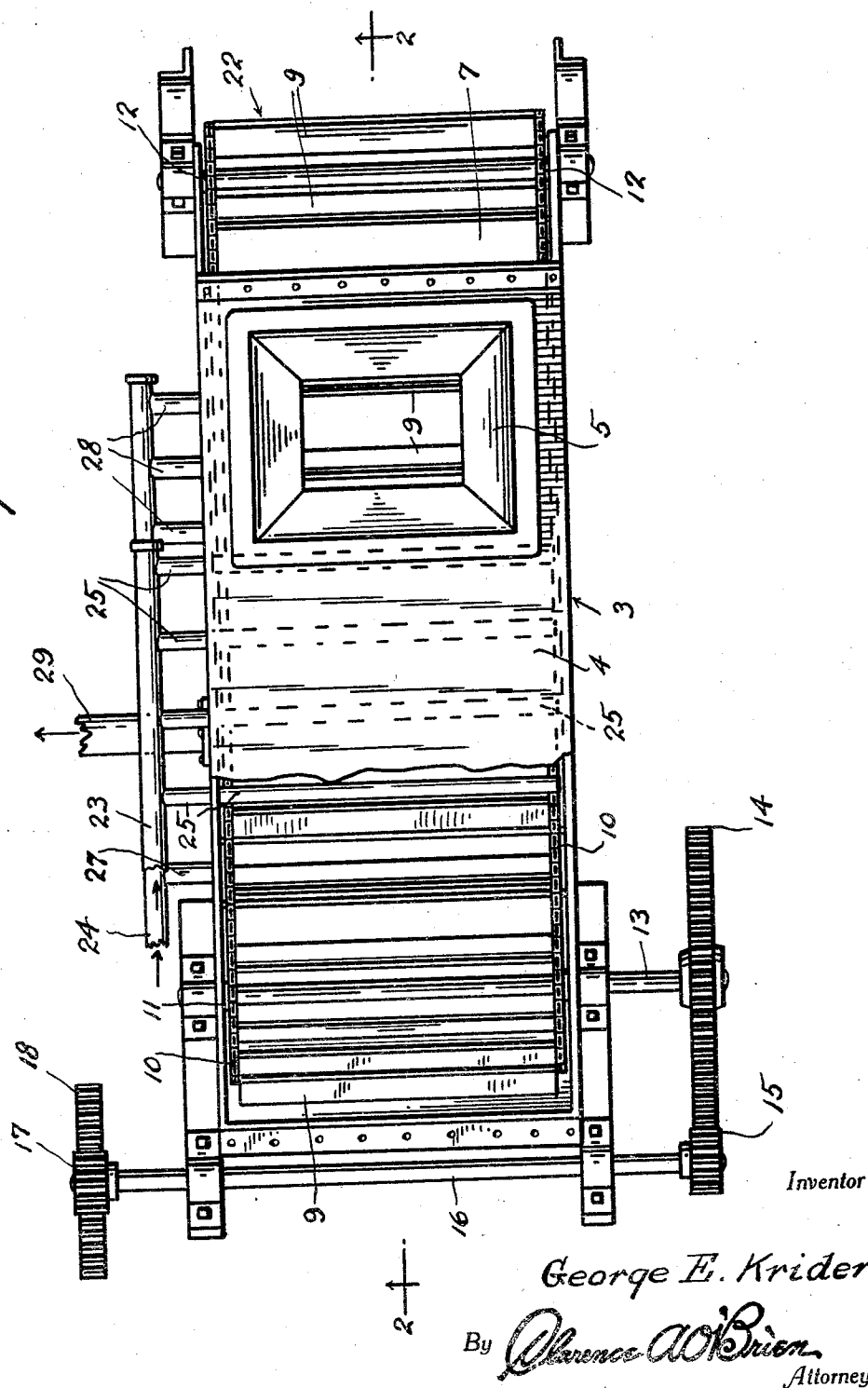
Oct. 18, 1932.

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MATERIAL WASHING MACHINE
Filed March 11, 1932

1,883,800

2 Sheets-Sheet 1

Fig. 1.



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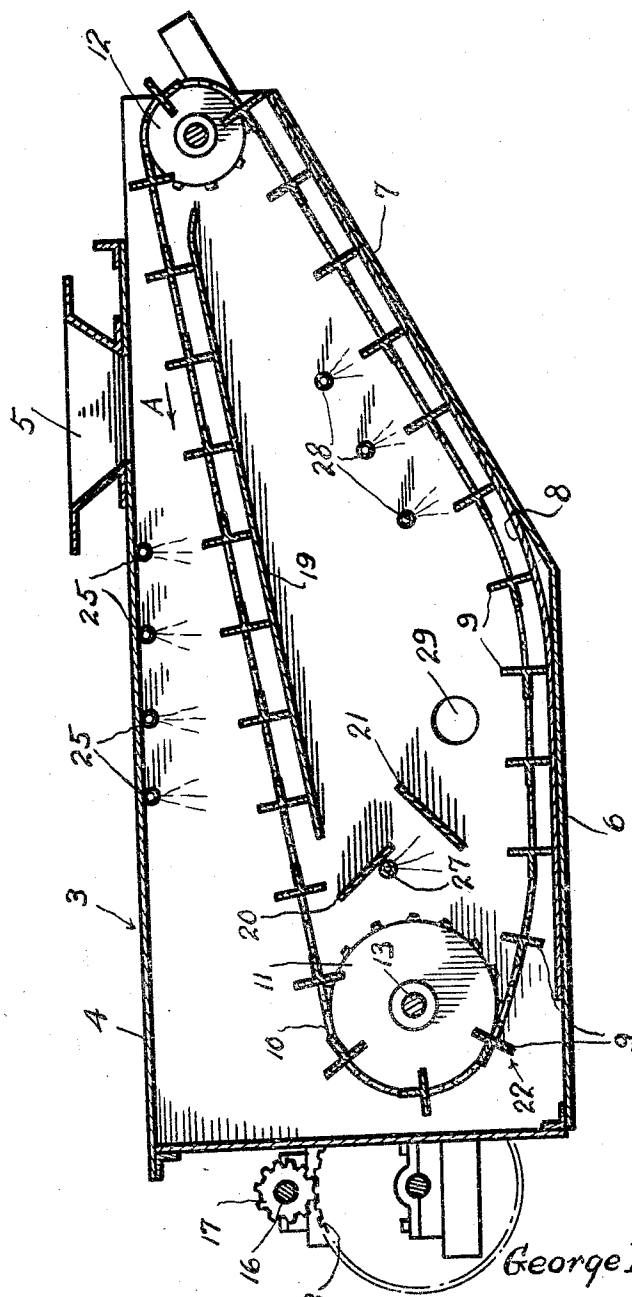
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2 Sheets-Sheet 2

Fig. 2.



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MATERIAL WASHING MACHINE

Application filed March 11, 1932. Serial No. 598,284.

This invention relates to a novel machine or apparatus especially constructed for handling building and construction materials such as stone and gravel, the apparatus being constructed for conveniently handling and cleansing such materials for commercial usage.

Although the machine is of such construction as to fulfill the requirements of general utility in building and construction work it is particularly useful for washing and cleansing stone used in the construction and building of roads and highways.

In reducing the inventive conception to actual practice, I have selected a combination and mechanical organization of parts which handles the stone effectively, subjecting it to a double washing action, the initial washing taking place just after the stone is introduced into the machine and the final washing being in the nature of a spray to which the outgoing or discharging material is subjected to render it ready for commercial transportation.

In the accompanying illustrative drawings wherein like numerals are employed to designate like parts throughout the same:

Figure 1 is a plan view partly broken away.

Figure 2 is a longitudinal sectional view taken approximately on the plane of the line 2-2 of Figure 1.

As shown in the drawings, the numeral 3 designates the box-like housing which includes a removable cover plate 4 provided at an appropriate point of entry with a suitable hopper 5 through which the stone and gravel is fed into the interior of the casing.

The casing includes spaced parallel side walls and has its bottom wall formed with a horizontal portion 6 and an upwardly inclined portion 7 which forms a discharging chute. Incidentally, the numeral 8 designates an elongated wear plate with which the T-shaped conveyor cleats or drag links 9 have sliding contact. These drag links are mounted between a pair of spaced parallel endless sprocket chains 10 trained over sprocket wheels 11 and 12.

The sprocket wheels 11 are carried by the power driven shaft 13 which as seen in Fig-

ure 1 is provided on its extended end portion with a power receptive gear 14. The gear is driven from a pinion 15 on the drive shaft 16, said drive shaft being mounted in appropriate bearings and having a pinion 17 at its opposite end co-operating with the main power supply gear 18. The gear 18 may be operated from a motor or any suitable prime mover.

The sprocket wheels 12 are relatively small and disposed in a plane above that of the wheels 11 so that the upper and lower flights of the conveyor assume the relationship represented in Figure 2. In fact, the upper flight of the conveyor which is inclined downwardly and moves in the direction of the arrow A is so positioned as to permit the drag links 9 to ride downwardly on the inclined partitioning plate 19.

The plate 19 has its left-hand end terminating above a pair of companion transverse baffles 20 and 21. The material slides off of the discharge end of the plate 19 against the baffle 20 where it is shunted against the baffle 21. The baffle 20 may be described as forwardly inclined, and the baffle 21 as rearwardly inclined, said baffles assuming this alternating angular position so that the primary washed material is cast from the baffle 21 down into the chamber 22 which is partly filled with water through which said material is dragged so that it is subjected to a bath.

In addition to subjecting the gravel to this submerged bath, it is further subjected to successive shower baths produced by the piping arrangement and water circulating system provided. This system utilizes upper and lower delivery mains 23 and 24. The main 23 is provided with a plurality of horizontal branch pipes 25 which extend into the casing beneath the cover and which overlie the plate 19. The main 24 carries an individual secondary spray pipe 27 located underneath the baffles 20 and a series of additional distributing spray pipes 28 which overlie the lower upwardly travelling flight of the conveyor.

The numeral 29 designates the drain pipe connected to one side wall and located at a

suitable elevation to control the water level in the lower portion or chamber 22.

It is evident from this construction and arrangement that after the gravel is dumped into the hopper it falls on the plate 19 and is dragged along the plate under the action of the sprocket chains and drag bars 9. When it reaches the lower left hand end of the plate 19 it is deflected against the forwardly inclined baffle plate 20 and then shunted from the underlying rearwardly inclined baffle plate 21 into the submerged water bath in the compartment 22 of the casing.

As the stone or gravel moves along the plate 19 it is given a shower bath from the distributing overhead pipes 25, is subjected to a second shower by the intermediate or secondary pipe 27, is then submerged in the water in the lower portion 22 of the casing, and is dragged upwardly along the wear plate 8 and finally subjected to a third shower from the jets of water spraying from the pipes 28. The mud and dirt flow off from the chamber 22 to the drain 29.

It is thought that the description taken in connection with the drawings will enable a clear understanding of the invention to be had. Therefore a more lengthy description is thought unnecessary.

While the preferred embodiment of the invention has been shown and described, it is to be understood that minor changes coming within the field of invention claimed may be resorted to in actual practice if desired.

I claim:

1. In a structure of the class described, in combination, a housing, upper and lower driven shafts mounted for rotation in opposite end portions of said housing, sprocket wheels carried by said shaft, an endless drag equipped conveyor trained over the sprocket, a material feeding hopper attached to the top of the housing adjacent one end thereof, a downwardly and rearwardly inclined partitioning plate between the side walls of the housing underlying the hopper and a portion of the upper flight of the conveyor, the bottom of the housing having its rear end portion substantially level and its forward end portion inclined upwardly toward the material discharge end of the housing, means for introducing water into said housing, an elevated side drain carried by one wall of the housing to regulate the water level and to carry off portions of the dirt washed from the material treated.

2. In a structure of the class described, in combination, a housing, upper and lower driven shafts mounted for rotation in opposite end portions of said housing, sprocket wheels carried by said shaft, an endless drag equipped conveyor trained over the sprocket, a material feeding hopper attached to the top of the housing adjacent one end thereof, a downwardly and rearwardly inclined par-

tioning plate between the side walls of the housing underlying the hopper and a portion of the upper flight of the conveyor, the bottom of the housing having its rear end portion substantially level and its forward end portion inclined upwardly toward the material discharge end of the housing, means for introducing water into said housing, an elevated side drain carried by one wall of the housing to regulate the water level and to carry off portions of the dirt washed from the material treated, said partitioning plate terminating in spaced relation to the rear end wall of the housing, and co-operating baffles located in the housing adjacent the discharge end of said plate for shunting the material from said plate into the water-filled rear end portion of the housing.

3. In a structure of the class described, a box-like enclosure having a material feed hopper in its top adjacent one end, having the rear end portion of its bottom substantially horizontal and level and the remaining forward end portion inclined upwardly toward the hopper equipped end, an inclined partitioning plate in the upper portion of the enclosure underlying the hopper, sprocket wheels mounted for rotation in opposite end portions of the enclosure, an endless conveyor trained over said sprocket wheels and provided with drag members co-operating with said plate, a pair of superposed baffles mounted in the enclosure adjacent the discharge end of the plate, an elevated water drain at one side of the enclosure, water jet pipes overlying said plate, a second set of jet pipes overlying the discharge flight of the conveyor.

In testimony whereof I affix my signature.

GEORGE E. KRIDER.