

UNITED STATES PATENT OFFICE.

TRUMAN DURNBAUGH, OF WABASH, INDIANA.

DUST-CATCHER FOR GAS-PIPES.

987,559.

Specification of Letters Patent.

Patented Mar. 21, 1911.

Application filed January 7, 1910. Serial No. 536,937.

To all whom it may concern:

Be it known that I, TRUMAN DURNBAUGH, a citizen of the United States, residing at Wabash, in the county of Wabash and State of Indiana, have invented certain new and useful Improvements in Dust-Catchers for Gas-Pipes; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to devices for trapping and holding sedimentary or other matter that may be present in pipes through which fluid or liquid may be conducted, the invention having reference more particularly to a device for catching and retaining rust, scale or dust in gas-pipes.

The object of the invention is to provide a neat appearing and cheaply constructed trap or dust catcher of the above-mentioned character that will be effective in preventing dust or similar matter, especially in gas-pipes, from entering connecting valves or feed tubes or burners of lamps connected with the pipes; a further object being to provide an improved dust catcher by the use of which trouble and expense, resulting from the dust or rust falling from the walls of the pipes into the valves, may be avoided in an economical manner and which permits ready removal of the dust that may accumulate, and thereby eliminates expenses for repairs for disconnecting the pipes to clear them.

With the above-mentioned and other objects in view, the invention consists in an improved gravity trap comprising a separating box having a reservoir and provided with a deflector for deflecting the dust or other foreign matter into the reservoir, and provided also with a barrier to arrest particles of the matter that may be drawn by the flowing gas partially into its channels, the gas channel in the separating box being circuitous.

The invention consists further in the parts and combinations and arrangements of parts as hereinafter particularly described and then defined in the appended claims.

Referring to the drawings Figure 1 is an elevation of the improved dust catcher in connection with a drop pipe and the dual gas lamp, the latter being indicated by broken lines as illustrative of one of the applications of the invention for practical pur-

poses; Fig. 2, a vertical section of the dust catcher on the line A A in Fig. 1; Fig. 3, a horizontal section approximately on the line B B in Fig. 2; Fig. 4, a fragmentary vertical section on the plane of the line C C in Fig. 2; and Fig. 5, a side elevation of the improved dust catcher.

Similar reference characters in the several figures of the drawings indicate like parts or features of construction herein referred to.

The improved dust catcher is illustrated and usually used in connection with substantially vertical pipes, but it is apparent that it may be used in other than vertical position, and it comprises a separating box preferably consisting of two flat vertical sides *a* and *a'* and curved ends *b* and *c*, the end *b* being substantially straight vertically and the end *c* mainly straight vertically and having a curved upper portion *c'* extending over toward the end *d*, so as to form a top for the box from which a flange extends upward and joins the end *b* to constitute a neck *d* suitably adapted to be connected to a pipe *e* through which gas may be conducted into the upper portion of the separating box. The separating box has a bottom part *f* at the middle portion of the lower ends of the sides *a* or *a'* and a nipple *g* extending downward from the bottom, being formed partially thereon and partially as an extension of the end *b* to provide an outlet for the gas from the separating box, the nipple being adapted to have a valve-body *h* suitably connected thereto as by means of a pipe coupling *i*, it being desirable to arrange the valve for controlling the flow of the gas near to the separating box, the valve-body *h* having a rotary valve plug *j* therein provided with an operating handle-bar *k* to which operating chains *l* and *l'* are connected as is customary, the plug having a passageway *m* therein through which the gas may flow, a pipe *n* being connected to the valve-body *h* to receive and conduct the gas. The pipe *n* may be a part of a gas lamp and have horizontal feed-pipes *o* and *o'* connected thereto that have upright branches *p* and *p'* respectively on which are mounted lamp burners *q* and *q'*, respectively.

The upper portion of the separating box is provided with a deflector *r* that extends from the end *b* along the inner side of the sides *a* and *a'* below the neck *b* and toward the end *c*, the deflector having an inclined upper side *r'* that slopes downward toward

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ROBERT T. EVANS, OF CHICAGO, ILLINOIS.

RESILIENT WHEEL FOR VEHICLES.

987,561.

Specification of Letters Patent.

Patented Mar. 21, 1911.

Application filed December 27, 1909. Serial No. 535,013.

To all whom it may concern:

Be it known that I, ROBERT T. EVANS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Resilient Wheels for Vehicles, of which the following is a specification.

This invention relates to resilient wheels intended more particularly for use on automobiles and similar vehicles in which the load carried on each wheel is relatively large, and in which it is necessary to transmit power from the axle or central portion of the wheel to the pavement through the wheel. It is found that in order to obtain sufficient resiliency in solid wheels which depend for their resiliency only upon the use of a rubber or pneumatic tire the tire must be of large diameter and therefore of considerable weight in order to sustain the forces coming upon it; and it is further found that the use of rubber tires of large diameter greatly increases the skidding tendency of the wheel, by reason of the fact that it flattens out when it comes in contact with the pavement and retains a thin film of slippery material or moisture under it.

An object of this invention is to provide a resilient wheel which will obviate the necessity of using a pneumatic or similar cushion tire of large diameter, but in no way impairing the smooth riding qualities ordinarily obtained by the use of pneumatic or similar tires.

A further object of the invention is to provide a wheel which will require no lubrication or attention of any sort, and one which may be used as the driving wheel of the vehicle, whether it be chain or shaft driven.

Another object is to provide a wheel which when used as a driver will absorb all shock due to change of speed of the motor or engine of the vehicle, or to the application of the brakes of the vehicle, also to provide a wheel which may be used on the standard form of axle, ordinarily used in vehicles of this type.

My improved wheel is provided with springs so positioned within it that the various shocks and strains coming upon the wheel, whether from encountering obstacles

in the pavement or due to changes in the speed of the driving mechanism, or due to application of the brakes, will be absorbed by the springs, on account of the peculiar manner in which they are arranged in the wheel, and attached to the solid portions of it.

Further objects will appear from a detailed description of the invention, which consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a portion of my improved wheel, showing the side plate cut away at one point to expose one of the springs beneath it; Fig. 2, a sectional elevation of the wheel; Fig. 3, a detail of one of the blocks for attaching the springs solidly to the rim and hub of the wheel, showing the spring attached to it; Fig. 4, a plan view of one of these attaching blocks; and Fig. 5, a detail of one of the blocks, the block being inverted from the position shown in Fig. 3 and rotated through an angle of 180°.

The wheel has an outer rim 6, preferably formed of wood, and having a metal band 7 shrunk on its periphery, the band being provided with a recess for receiving a solid rubber tire 8, preferably of small diameter. The rim 6 is attached to an inner rim 9, also preferably of wood, by means of spokes 10 having on their ends pegs 11 for holding them securely to the rims 6 and 9. It is seen that the inner and outer rims, with the spokes, metal band, and tire, constitute one member of the wheel, which is rigid and practically unyielding in itself.

A solid metal hub 12 can be attached to a shaft or journaled on the end of a shaft, depending upon whether the wheel is to be shaft driven or driven in any other suitable manner. A flange 13, integrally formed with the hub 12, constitutes a shoulder against which abut filler blocks 14 and 15 of wood or any other suitable material. A circular metal band 16 encircles the filler blocks, and is of such width that it comes flush with the outer edges of the filler blocks. The band 16 is attached to the outer portion of the wheel by means of helical springs 17 solidly attached to the band at one end and to the inner rim at the other end. The method of solid attachment to the band and

grinding the fecula with potable water, expressing the liquid of the paste, which results, and completing the drying under the temperature of about 90-95 degrees centigrade, and again grinding the material.

2. The process of making flour of maize, consisting in partially boiling the maize in calcium hydrate, heated to about 60 degrees centigrade, removing the hull, thereafter grinding two parts of said fecula with one part of potable water to a paste, expressing the liquid by pressure from said paste,

and introducing said paste preliminarily dried into a heating chamber in which is maintained a temperature of 90-95 degrees centigrade, and finally grinding the completely dried product to a flour.

In testimony whereof we have affixed our signatures in presence of two witnesses.

ARMIN EROSA.

ADRIANO EROSA.

Witnesses:

PEDRO PENICHE LÓPEZ,

TOMÁS PENICHE LÓPEZ.

plates 18 and 19 enables the springs to be protected from dirt and dust and at the same time serves to guide the upper rim portion of the wheel in its vibrations back and forth with respect to the hub portion.

Also, in case of extreme movements, any possible deflection of the springs might be resisted by their coming in contact with the side plates.

Although I am familiar with resilient wheels in which use is made of springs for accomplishing resiliency, still I am not familiar with any form of wheel in which the springs are so attached to the rim and to the band that they will be given the strength which it is evident my springs will possess, by reason of the peculiar manner in which I attach them. The necessity for their being properly attached in their end portions will be readily appreciated by any one familiar with the stresses coming upon wheels used in automobile or similar services, in which not only the jarring and jolting occasioned by passing over obstacles is encountered, but also in which the torsional forces occa-

sioned by application of power and the setting of brakes are encountered.

I claim:

In a resilient wheel for vehicles, an inner hub portion comprising a hub for engaging the axle of the vehicle, a flange formed on the hub, a filler block on each side of the flange, a band surrounding the filler blocks and the flange, and circular side plates attached to the filler blocks and the flange and projecting beyond the band, and an outer rim portion comprising an inner ring and an outer ring firmly attached together, the inner ring movably contained between the circular side plates, and the inner ring connected with the band which surrounds the filler blocks and the flange, by means of radial springs, the end portions of the springs being immovably attached to the ring and to the band, substantially as described.

ROBERT T. EVANS.

Witnesses:

DENVER E. EVANS,

SAMUEL W. BANNING.