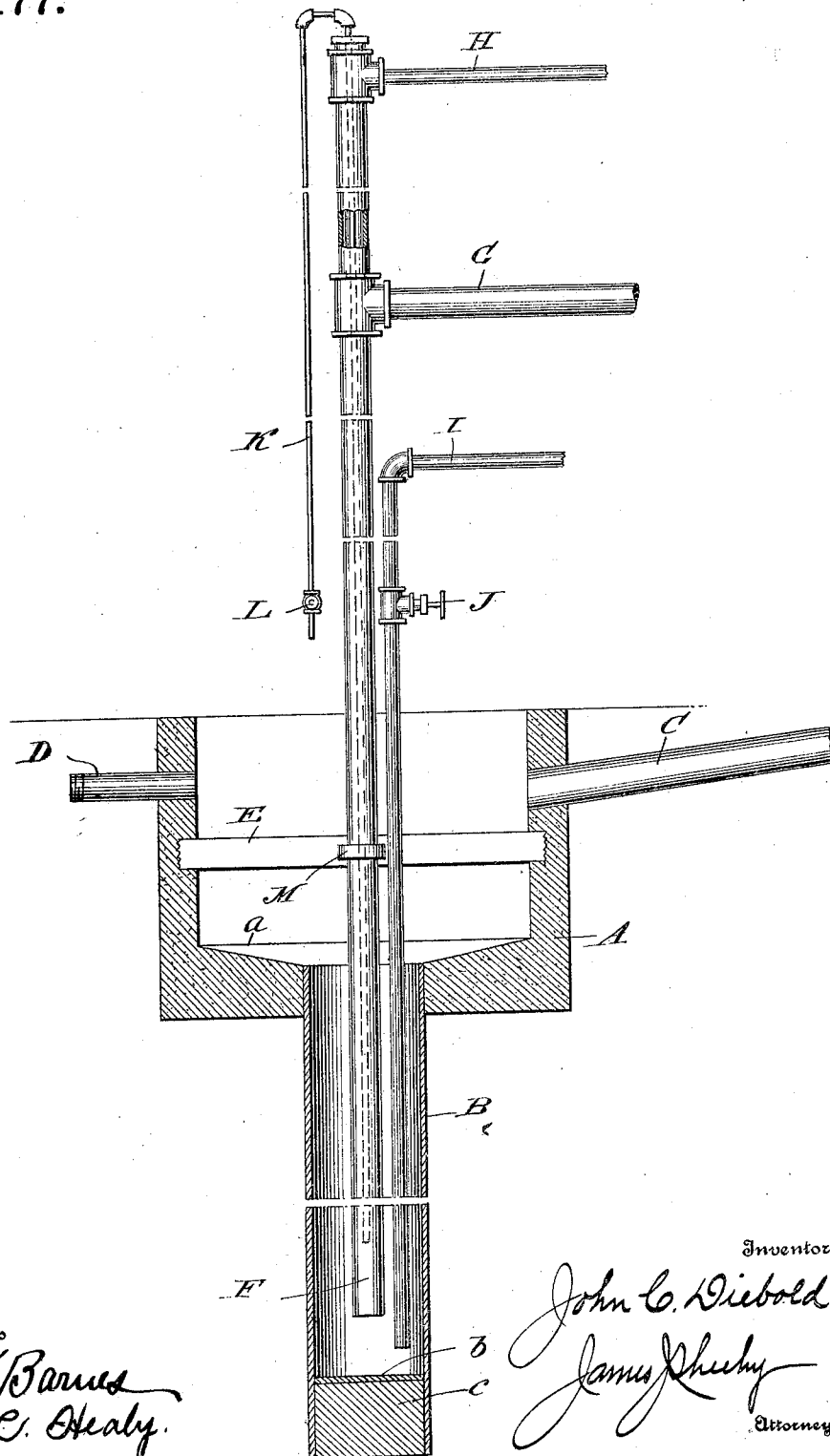


J. C. DIEBOLD.
 SLUSH FEEDING APPARATUS.
 APPLICATION FILED MAY 4, 1909.

988,177.

Patented Mar. 28, 1911.



Witnesses

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JOHN C. DIEBOLD, OF LOUISVILLE, KENTUCKY.

SLUSH-FEEDING APPARATUS.

988,177.

Specification of Letters Patent.

Patented Mar. 28, 1911.

Application filed May 4, 1909. Serial No. 493,847.

To all whom it may concern:

Be it known that I, JOHN C. DIEBOLD, citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented new and useful Improvements in Slush-Feeding Apparatus, of which the following is a specification.

My invention has to do with the sawing of stone; and it contemplates the provision of a simple and easily controlled apparatus for maintaining the supply of an adequate quantity of abrasive slush—*i. e.*, sharp sand and water in about the proportions of thirty per cent. of the former to seventy per cent. of the latter, to a stone saw or gang of stone saws, and this in such manner that the sand or other abrasive agent is carried in a cycle and used over and over again.

The invention also contemplates the provision of an apparatus for the purpose stated adapted to expeditiously start the supply of slush to a stone saw or a gang of stone saws after the saw or saws and the slush supply apparatus have been idle for a considerable period.

With the foregoing in mind the invention will be fully understood from the following description and claim when the same are read in connection with the drawing, accompanying and forming part of this specification, in which the figure is a view, partly in elevation and partly in vertical section, of the apparatus constituting the best practical embodiment of my invention that I have as yet devised.

In carrying my invention into effect I provide in a floor a receptacle A, preferably of concrete, which has its bottom *a* pitched toward its center where the receptacle communicates with a well B of a length suitable to its purpose. The said well B is preferably formed by a metallic tube and means closing the lower end thereof, said means being, by preference, a metallic plate *b* superposed on a plug-like body *c* of concrete or the like.

At C the receptacle A is provided with a drain which has for its office to conduct the slush from the saw or saws back to the receptacle, and at D the receptacle is provided with a conduit designed to lead excess water to a suitable point of discharge. It will also be noticed that at an intermediate point of its height, the receptacle is provided with a

cross bar E designed to serve a purpose hereinafter made clear.

Extending from a point adjacent the lower, closed end of the well B to a suitable point above the receptacle A is a comparatively large upright pipe F which is open at its lower end, is entirely unobstructed throughout its length except by the small pipe K, hereinafter described, and is designed to receive slush from the lower portion of the well B. At a point considerably above the receptacle A, the pipe F is provided with an arm or branch pipe G designed to conduct the slush to the saw or saws in operation, and at its upper end said pipe F is equipped with a comparatively small air eduction pipe or vent H which is designed to serve the purpose of discharging the air and in that way contribute to the continuous and proper feed of the slush through the pipe G.

I is a pipe designed to conduct a suitable head of water from a main, elevated tank or other available and appropriate source of supply directly into the lower portion of the well B. The said pipe I is valved at J and is designed to supply the quantity of water necessary to form in combination with the sand a proper slush. I would also have it understood that precedent to the starting of my novel apparatus the pipe I is used to direct a head of water downwardly in the slush which packs in the well B and lower portion of the pipe F, this with a view of agitating and loosening the sand so as to render the same mobile. Then when the supply of slush through the pipes F and G is established, the valve J of pipe I is closed, and excess water passes off through conduit D.

K is a comparatively small pipe adapted to lead from an air compressor or other means for supplying air under pressure. The said pipe K is valved at L, and is connected with the upper end of the slush pipe F, and from said point of connection the pipe K extends straight down inside the pipe F to a point adjacent the lower end of the latter. Thus it will be seen that after the sand is loosened by the head of water in the manner before described, the compressed air is enabled to start and maintain the supply of slush through the pipes F and G to the saw or saws in operation. I show

the pipe F as connected to the bar E through the medium of a clamp M, but it is obvious that the pipe F may be maintained in an upright position in any other suitable manner without affecting my invention.

In the practical operation of the apparatus, sufficient slush is used to assure the well B and the receptacle A being always filled up to the overflow conduit D leading from the latter, and the supply of air under pressure, which supply is regulated at L, serves to force the slush up the pipe F to the pipe G through which latter the slush passes to the saw or saws. The point of connection of pipe G to the pipe F is in a horizontal plane above the saw or saws to afford fall for the slush from said point, and the air under pressure escapes from the pipe F, at a point above the pipe G, and in that way assures a continuous and steady flow of slush to the saw or saws. From the saw or saws, the slush passes by gravity through conduit C back into the receptacle A and from thence gravitates to the lower portion of the well B precedent to being again forced up pipe F.

In starting the apparatus after a considerable period of idleness, the head of water is supplied through pipe I to the sediment, that is packed in the lower portions of well B and pipe F, for two or three minutes before the valve L is opened to let air under pressure into the slush.

As hereinbefore stated, it is essential to have the pipe F entirely unobstructed, except by the small pipe K, this for the reason that when the sand slush settles over night and is subsequently loosened and put in motion, it must be moved upward through the pipe F before the apparatus can be started.

Having described my invention, what I claim and desire to secure by Letters-Patent is:

An apparatus for the purpose described, comprising an upright imperforate tube closed at its bottom and open at its upper end, a receptacle communicating with and constructed to discharge into the said open end of the tube, means for leading slush to the said receptacle, a small upright pipe extending down into the tube and adapted to be connected with a source of compressed air supply, a valve connected with said pipe, a conduit smaller than the said tube and larger than and surrounding the upright portion of the said pipe and extending down into the tube to a point adjacent the lower end thereof and below the lower end of the air-supply pipe and open at its lower end and closed at its upper end and entirely unobstructed throughout its length except by the said small pipe, a conduit communicating with and extending laterally from the first-named conduit at an intermediate point in the height thereof, a comparatively small vent pipe leading from the first-named conduit at a point above said lateral conduit and adapted to discharge air and contribute to the continuous feed of slush through the conduits, and a valved pipe extending downwardly through the receptacle and in the tube and alongside the first-named conduit to a point below the lower open end thereof and adapted to direct a head of water downward in slush collected below the lower open end of the tube, all substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN C. DIEBOLD.

Witnesses:

HENRY RUEFF,
G. A. BERNDSEN.