

T. E. MITCHELL.
DUST RECEPTACLE.
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1,038,413.

Patented Sept. 10, 1912.

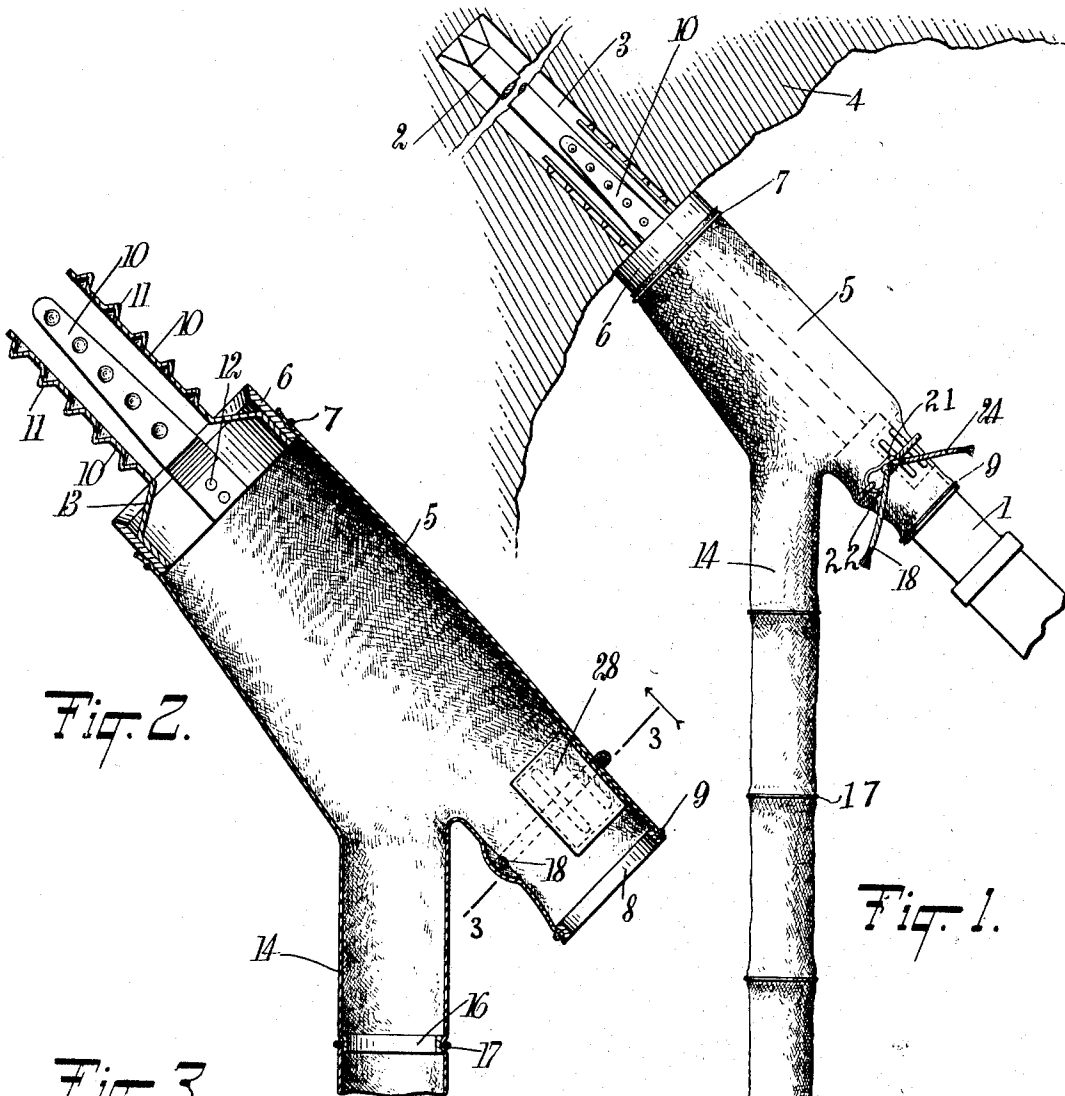
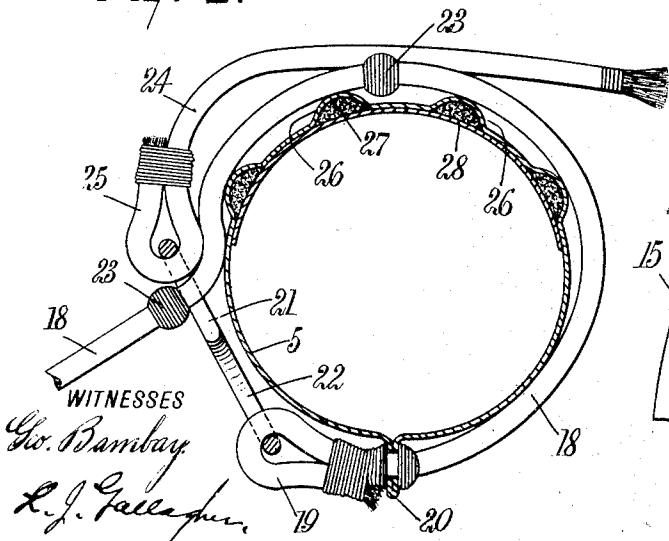


Fig. 1.

Fig. 3.



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THOMAS E. MITCHELL, OF MEADERVILLE, MONTANA.

DUST-RECEPTACLE.

1,038,413.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, THOMAS E. MITCHELL, a citizen of the United States, and a resident of Meaderville, in the county of Silverbow and State of Montana, have invented a new and Improved Dust-Receptacle, of which the following is a full, clear, and exact description.

My invention relates generally to dust receptacles and more particularly it is directed to a device especially intended for use with pneumatic hammer drills.

The principal object of my invention is to provide a new and improved receptacle of simple construction and few parts adapted to be positioned adjacent a hole which is being drilled whereby the dust and other material set free by the drill will be collected, thereby preventing it from circulating in the atmosphere.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a side view of the device in operative position; Fig. 2 is a partial vertical sectional view thereof; Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

The receptacle is shown applied to any suitable machine 1 having a drill 2 extending therefrom, the drill entering a hole 3 in a wall or mass of rock 4, the machine being operated in any suitable manner. The receptacle itself comprises a flexible container 5 having open ends, there being a metallic ring 6 adjacent one end on which the flexible material 5 is fastened, preferably by means of a cord or wire 7. The shank of the drill extends through the interior of the flexible receptacle, the other end of the receptacle being preferably provided with a metallic ring 8 to which the end of the material is secured in any desired manner, as by a cord or wire 9. Secured to the ring 6 and preferably on the inner side thereof are a plurality of spring members or fingers 10 each of which is provided with a plurality of projecting portions 11, these portions being preferably integral with the spring members and conical in formation. The inner ends of the fingers are secured to the ring in any desired manner, the preferred formation being by means of rivets 12. It is to be noted that the diameter of the ring 6 is substantially greater than the

distance between diametrically opposite fingers 10, this result being obtained by offsetting or bending the ends 13 of the fingers adjacent the ring. Referring particularly to Fig. 1, it will be noted that such construction permits the ring 6 to be brought closely adjacent the material 4 which is being drilled, the hole 3 being formed being of less diameter than the ring whereby the dust and particles resulting from drilling are caught in the receptacle 5. By making the fingers 10 springy they may be engaged in openings 3 of different sizes, the projections 11 engaging the inner wall of the opening whereby the receptacle is securely held in position. Whatever the size of the receptacle or the diameter of the ring, or the distances between the fingers 10, these fingers are so positioned that they afford ample space for the drill 2 in working.

Extending laterally of the flexible receptacle 5 is an outlet tube or chute 14 extending for any suitable distance and preferably into communication with a container, such as a bag or barrel 15, this chute being preferably reinforced and held in expanded condition by means of metallic or other suitable rings 16 to which the flexible material of the tube is secured by means of bands of string or wire 17. In positioning the different rings 6, 8, and 16, in engagement with the flexible material of the device, it may be desirable to provide the outside of each of the rings with a recess or channel so that, when the wires or cords 7, 9, 17, are engaged with the rings, they will be securely held in position because of the material being forced into the channels.

The end of the drilling machine or hammer to which the drill 2 is attached is in close engagement with the end portion of the flexible container 5, such firm and close engagement being brought about particularly by the construction shown especially in Fig. 3. Extending around the side of the container is a piece of rope or similar flexible material 18 having a ring 19 formed at one end thereof, the rope passing through a suitable opening in the material 5, the opening being formed in portions of the material folded adjacent each other, as at 20, the engagement preventing loss of the rope and secure engagement thereof; secured to the ring 19 at the end of the rope or similar device is a metallic fastener having openings 21, 22 therein of different diameters, the

opening 21 being substantially of the same diameter as the rope 18, the diameter of the opening 22 which communicates with the opening 21 being of greater diameter than the rope or similar device and substantially equal in diameter to the knots or similar enlarged portions 23 provided on the rope 18. Secured to the end of the metallic fastener is a short rope or equivalent device 24 having a ring 25 at its end engaging this fastening device, the purpose of the short rope being to provide a convenient handle or grip when placing the receptacle in position on the drill holder. Extending longitudinally of the end of the flexible container 5 and for a suitable distance are a number of corrugations or raised portions 26, each of which is formed by placing a quantity of suitable material 27 adjacent the inside of the flexible container 5 and securing a second flexible piece 28 thereto, the purpose of these corrugated or raised portions being to provide a plurality or number of engaging portions with the grooves in the drill or bit cylinder in order to prevent the dust coming through.

After the hole has been started in the material to be drilled, the ends of the flexible fingers 10 may be entered therein, the fingers being inserted for their full length after the hole has been sufficiently drilled, the outer end of this flexible container being secured on the drill holder 1 by taking hold of the end of the rope 18 and the end of the short rope 24 and pulling on the parts in opposite directions, the knotted or enlarged portions 23 of the rope 18 passing through the enlarged opening 22 in the fastening device, the rope being then passed into engagement with the fastener in the smaller opening 21, the knot 23 engaging the outside of the fastener adjacent this smaller opening and preventing loosening of the rope so that the parts are held firmly in engagement, as shown particularly in Fig. 1.

As the drilling proceeds, the dust and other particles resulting therefrom fall into the flexible container 5 and thence down-

wardly through the outlet or chute 14 and finally collect in the bag or barrel 15. Such a construction affords a device especially useful in underground drilling operations. It is advantageous to keep the air as clear as possible, it being obvious that all dust resulting from the drilling will be collected in the barrel or bag 15. The use of the spring or resilient fingers 10 permits the device to be readily inserted in position for use, the conical projections on the fingers affording a firm engagement for the fingers with the inner wall of the opening so that the outfit when once set up is firmly held in position.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent:—

A device of the class described comprising a flexible container having open ends, rings secured to the flexible material adjacent the ends, one ring being provided with a plurality of resilient fingers extending therefrom, each of the fingers being provided with a plurality of projections, the fingers being adapted to enter a hole with the projections thereon in engagement with the side wall of the hole whereby the container is held in position, a rope carried adjacent the other open end of the container, a number of corrugations on the flexible material with which the rope is adapted to engage whereby the end portion of the container may be held in close engagement with the drill carrying device, an outlet chute carried by the container, the said outlet chute being adapted to communicate with a receptacle whereby dust or other substances entering the container from the said hole may be collected in the receptacle.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS E. MITCHELL.

Witnesses:

WILLIAM CARPENTER,
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