

W. LINDSAY.
ENAMELING POWDER SIFTER.
APPLICATION FILED DEC. 3, 1908.

951,478.

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Fig. 1

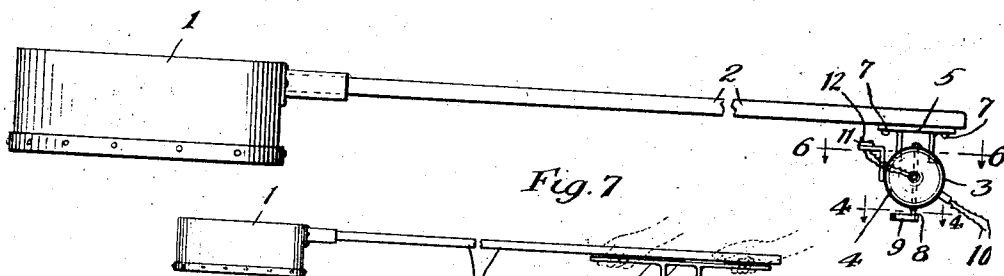


Fig. 7

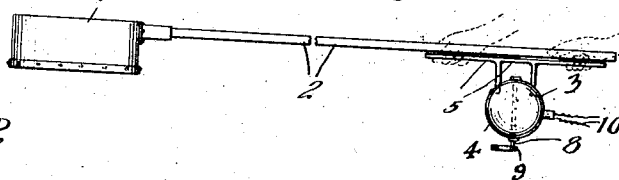


Fig. 2

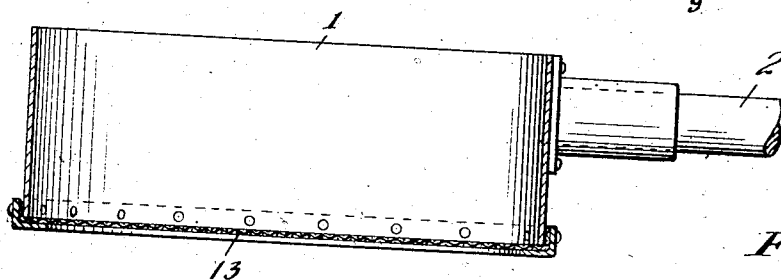


Fig. 4

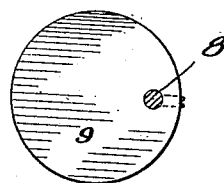


Fig. 3

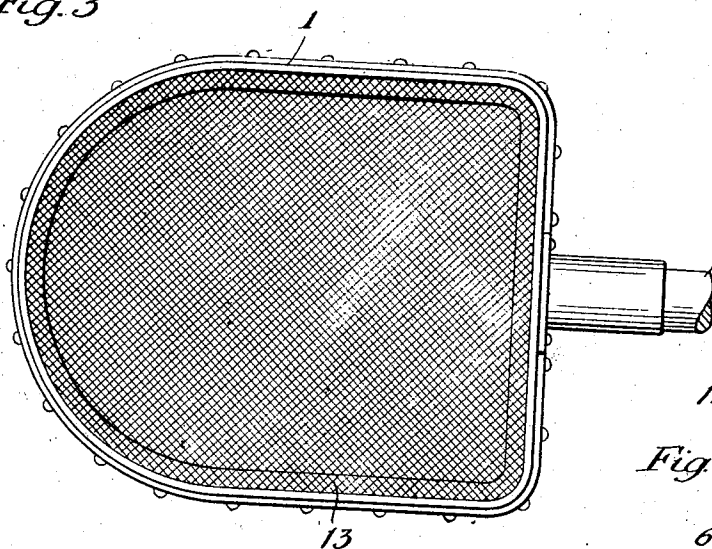


Fig. 5

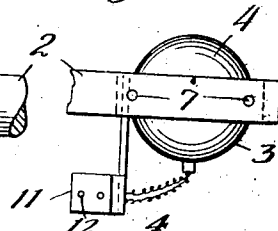
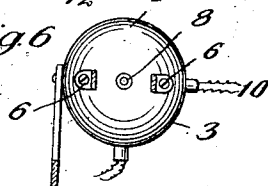


Fig. 6



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UNITED STATES PATENT OFFICE.

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ENAMELING-POWDER SIFTER.

951,478.

Specification of Letters Patent.

Patented Mar. 8, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM LINDSAY, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Enameling-Powder Sifters, of which the following is a specification.

My invention relates to sifters or dredgers for sifting and distributing powdered enameling material over the surface of bath tubs and other vessels in the manufacture of enameled iron bath tubs, wash bowls and other vessels.

The object of my invention is to provide an enamel powder sifter or dredger of a simple, efficient and durable construction which will be light in weight so that it can be easily held in the hand and moved about over the heated bath tub or other vessel to be enameled, and which will operate to evenly and uniformly sift and distribute the enameling powder or material as the workman holds it in his hands and moves it about over different portions of the tub or vessel.

I have discovered and herein my invention consists, that by simply rigidly securing to the handle of the ordinary hand dredger which the workman holds in his hand (and has been accustomed to tap or otherwise agitate to cause the powder to sift through the screen bottom of the dredger,) a small, light electric motor, the shaft of which is adapted to be rotated at a speed of approximately two thousand revolutions per minute, and the shaft of which is furnished with an eccentric weight, the powder in the dredger or sieve will be caused to evenly sift through the same and be uniformly and equally distributed; the mechanism of my invention being a practical embodiment and utilization of the physical law or principle that where two bodies, free in space, are mounted, the one to rotate upon the other and about a center which is eccentric to the center of gravity of the rotating body, it tends to produce a like circulatory movement of the center of gravity of the two bodies; thus causing each and every point of the sieve or dredger screen to

rapidly describe a series of minute circular movements of extremely small diameter; which I find to be sufficient to cause the powdered enameling material to sift at an absolutely uniform rate through the screen.

In the accompanying drawing forming a part of this specification, Figure 1 is a side elevation of an enameling powder sifter embodying my invention. Fig. 2 is an enlarged sectional view of the sieve or dredger. Fig. 3 is a plan view of the sieve or dredger. Fig. 4 is a section on line 4—4 of Fig. 1. Fig. 5 is a detail plan view and Fig. 6 is a section on line 6—6 of Fig. 1. Fig. 7 shows a modification.

In the drawing, 1 represents a sieve or dredger such as is commonly used for sifting powdered enameling material over heated bath tubs and other like articles while the same are at a high heat.

2 is the handle of the sieve or dredger, the same being preferably about four and one half feet in length and made of wood or metal, hollow or solid as may be preferred. The sieve 1 and handle 2 are or may be of the same identical construction as are ordinarily employed in hand dredging.

3 is a light electric motor of any suitable kind or construction. It preferably has an aluminum case or shell 4 which may be of any shape, but preferably globular. By making the metal case of the electric motor of aluminum it will be materially lighter than if made of other metal and thus add somewhat to the convenience of manually holding it when attached to the handle of the sieve. The case 4 of the electric motor may be attached or secured to the dredger handle 2 in any suitable way, but preferably by a bracket 5 connected by screws 6 with the electric motor shell and by screws or rivets 7 with the handle of the dredger. The armature shaft 8 of the electric motor is provided with a small eccentric weight or disk 9 rigidly secured thereto and adapted to be rotated by the electric motor.

To clearly indicate that the center of gravity of the weight is eccentric to the motor shaft, I have represented the weight as

being a circular disk and as being secured to the motor shaft near the edge of the disk. For ordinary use, an aluminum cased electric motor of about two pounds weight and of three or four inches in diameter is amply large and powerful enough for ordinary use as I have fully demonstrated by practical use of my invention. And with this size of electric motor, the armature shaft may be readily rotated at a speed of two thousand revolutions per minute and the eccentric weight employed is preferably about three or four ounces.

Current is supplied to the electric motor through flexible conductor wires inclosed in the flexible insulating cord 10 leading from the electric supply wire to the motor; so that the dredger may be manually held and manually moved about as required in distributing the enameling material being sifted therefrom over different parts of the bath tub or other vessel to be enameled. The electric motor is of course provided with the customary switch 11 for shutting on or off the current. This switch 11 may preferably have an arm or thumb piece 12 adjacent to the handle 2 so that it may be operated by the thumb or finger of the hand which grasps the handle of the dredger.

The electric motor is preferably so attached to the handle 2 that the motor shaft 8 extends at right angles to the handle and so that the eccentric weight revolves in a plane parallel to the screen 13 of the sieve. In practical operation, I find it desirable to employ a screen of considerably finer mesh than that ordinarily heretofore employed in sieves for sifting or dredging enameling material on bath tubs, the mesh heretofore generally employed being ordinarily about forty mesh, while that which I employ in my invention is preferably about fifty mesh. The finer mesh is desirable in my invention, as with a coarser mesh the enameling powder would sift too rapidly through the screen, owing to the rapidity with which each point of the screen rotates or moves in a circle of extremely small diameter under the influence of the rapidly revolving eccentric weight driven by the motor.

While the single rigid body, consisting of the sieve, the handle attached thereto and the motor attached to the handle, is a body which is held and supported in the hands of the workman, and consequently in one sense is not a body entirely free in space to circulate about the common center of gravity of said body and of the revolving eccentric weight, still, owing to the great rapidity of the revolution of the eccentric weight and of the extremely small diameter of the circle which each point of the other body (sieve, handle and motor) tends to describe under the physical law or principle hereinbefore

mentioned, the energy of the workman whose hands grasp the handle is practically a negligible factor or quantity in actual operation so far as tending to prevent or neutralize the rapid circulatory movement in circles of very minute diameter of each point of the sieve and the resultant efficient sifting action.

For convenience in manually holding and supporting the sifter as a whole, I prefer to attach the electric motor near the outer end of the handle, as it thus in a measure tends to counterbalance the weight of the sieve and its contents and renders the device more easily held, supported and moved by hand. The motor frame or case, however, may be attached to any part of the handle or any part of the sieve if desired.

In practice, as I have demonstrated by actual use, the electric motor with its eccentric revolving weight, does not have any disagreeable, inconvenient or detrimental effect upon the hands or muscles of the workman who holds the device in his hands during the sifting operation; and in this respect also, as well as in respect to much more regular and efficient operation, my device possesses advantages over those heretofore in use.

For convenience in handling and manipulation, I prefer to rigidly attach the electric motor by a connecting bracket or member to the handle of the sieve; but if the screws 7 by which the bracket or member 5 is attached to the handle, are, for example, omitted and the handle member or bracket 5 extended somewhat in length so that both it and the sieve handle 2 may be conveniently grasped and held by the hands, as shown in Fig. 7, the device will operate the same; although the sieve handle and motor are entirely separate and disconnected instrumentalities. I, however, prefer, as before stated, to practice my invention in the form first described or wherein the manually held sieve and the manually held electric motor are rigidly connected together, there thus being but the one instrumentality to be grasped by the workman in his hands or otherwise handled or supported and moved about.

I claim:—

1. In a hand dredger for sifting and distributing enameling powder, the combination of a sieve, a handle rigid therewith whereby the device may be manually held and moved from place to place, a small and light electric motor mounted on the handle and fixed thereto and having a shaft arranged transverse to the handle, and a weight mounted eccentrically on the said shaft, substantially as set forth.

2. In a hand dredger for sifting and distributing enameling powder, the combination of a sieve, a handle rigid therewith

whereby the device may be manually held and moved from place to place, a small and light electric motor mounted on the handle and fixed thereto and having a shaft arranged transverse to the handle, and a weight mounted eccentrically on the said shaft, the weight being arranged and revo-

luble in a plane parallel with the sieve, substantially as set forth.

WILLIAM LINDSAY.

Witnesses:

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