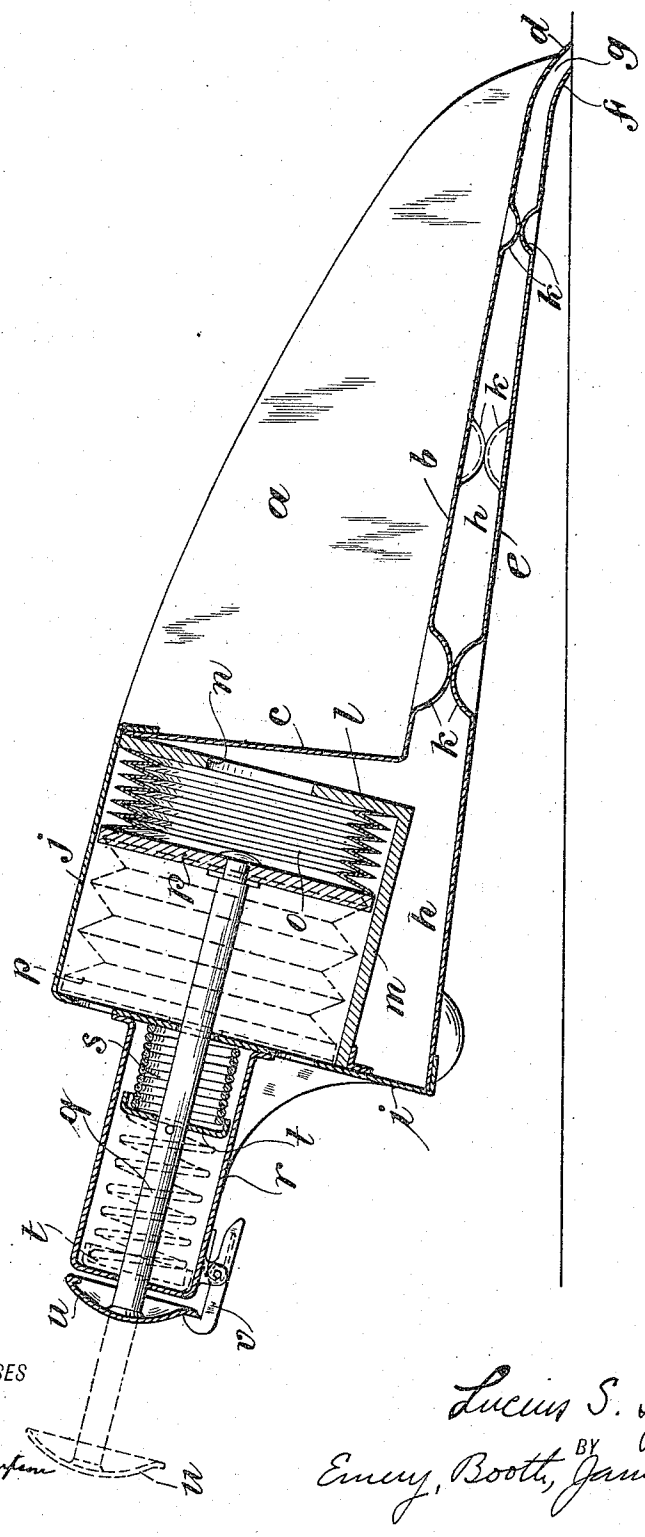
L. S. TYLER.

DUST PAN.

APPLICATION FILED OCT. 28, 1914.

1,161,087.

Patented Nov. 23, 1915.



WITNESSES

Geo. H. Graves

John W. Thompson

INVENTOR

Lucius S. Tyler

BY

Emery, Booth, Janney & Varney

ATTORNEYS

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LUCIUS S. TYLER, OF BOSTON, MASSACHUSETTS.

DUST-PAN.

1,161,087. Specification of Letters Patent. Patented Nov. 23, 1915.

Application filed October 28, 1914. Serial No. 868,961.

To all whom it may concern:

Be it known that I, LUCIUS S. TYLER, a citizen of the United States, residing in the city of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Dust-Pans, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to an improved form of dust-pan and has to do particularly with the provision of means, in combination with the usual dust-pan, by which the last particles of sweepings may be quickly and conveniently collected into the pan.

The single figure of the drawings illustrates, in longitudinal cross section, one embodiment of my invention; it being obvious that other mechanical means than those shown may be employed to accomplish the desired results.

When sweepings are being gathered into a dust-pan, it is invariably the rule that a small portion of the dirt cannot be collected, but forms a ridge at the front edge of the pan. This happens no matter how carefully the edge of the pan is made, for if it be thin, steady use will cause it to become bent so that it will not lie flat along the floor, and if it be reinforced to prevent damage to the edge, the resultant thickness defeats the object in view and causes a line of dirt to be left in front of the dust-pan as before.

To overcome the disadvantages outlined, the present invention has been made, the object thereof being to provide means to remove from the floor the last particles of dirt which are so difficult to remove with the ordinary dust-pan. This is accomplished by providing a narrow slot just below the normal front edge of the dust-pan and by connecting such a slot with a chamber having means to exhaust the air therefrom, thus enabling the last particles of dirt to be drawn through the slot.

Referring to the drawings, it will be seen that the main receptacle for sweepings is formed by sides *a*, a false bottom *b*, and a rear partition *c;* the whole being made of suitable sheet metal. This false bottom *b* terminates in a lip *d* which is adapted to lie flat along the floor, forming what would be the normal lip of the dust-pan. A bottom *e* is located slightly below the false bottom *b* and terminates in a lip *f* which is parallel and adjacent to the lip *d* so that the two lips form a narrow longitudinal slot *g* extending across the front of the dust-pan. An inclosed chamber *h* is formed by the two bottoms, the partition *c*, a rear wall *i*, and a top *j*. Various mechanical means may be employed for connecting the plate *b* to the bottom *e* and to brace the pan and make it rigid, if necessary; such means being shown herein as projections *k* which may be spot welded where they contact with each other, or fastened in any other suitable manner.

Within the chamber *h*, or operatively connected therewith, is located a suitable device for exhausting the air suddenly therefrom. Such means are herein shown as a spring operated bellows inclosed by a front wall *l* and a bottom plate *m* and communicating with the chamber *h* through a hole *n* in the wall *l* at a considerable height from the bottom *e* of the pan. Telescoping sides *o* of the bellows are attached to the wall *l* and to a plunger *p* in order that the bellows may be compressed and extended by the movement of this plunger. The plunger *p* is operated by a rod *q* which is fast thereto and extends to the rear into and through a hollow handle *r* which is affixed to the rear wall *i* of the dust-pan. Within the handle is located a spiral spring *s* bearing against the wall *i* of the dust-pan and a collar *t* affixed to the rod *q*. This spring is adapted to keep the bellows normally extended. The plunger rod *q* terminates in a cap *u*, which is adapted to be engaged by a spring latch *v* upon the handle *r* of the dust-pan in such a way that the spring and bellows may be retained in a compressed position. This latch *v* may be of any construction found most adaptable to the particular use to which it is put. Upon the release of the latch *v*, the spring *s* will suddenly expand the bellows, thereby causing a partial vacuum to be produced within the chamber *h* which in turn will cause air to be drawn through the slot *g*.

It will, of course, be obvious that many other suction devices may be used in place of the bellows herein described, for instance, a piston and cylinder may be substituted and

the same effect produced. The bellows or piston may or may not extend entirely across the rear of the dust-pan, its size depending upon the amount of suction desired to be created along the slot *g*.

The operation of a device constructed in accordance with the present invention is exceedingly simple and efficient and is as follows: The spring *s* operating the bellows should first be compressed and held in that position by means of the spring latch *v*. When the sweepings have been gathered into a pile, the dust-pan may be used in the customary manner and the sweepings collected into the main receptacle. While this is being done, the dust-pan is preferably held at an angle to the floor such as is shown in the drawings, the horizontal line representing the surface of the floor, or in any position which will bring the front lip *d* in contact with the floor. When the sweepings have been gathered into the dust-pan, it will be found that, as above pointed out, a ridge of dirt will still remain before the front edge of the dust-pan. This may now be collected into the chamber *h* through the slot *g*. The rear end of the dust-pan is lowered, thus raising the front lip *d* and keeping the under lip *f* in contact with the floor. The slot *g* is now open toward the front of the dust-pan. Thereupon, the latch *v* may be pressed to release the spring *s* and cause the bellows to expand. The expansion of the bellows will exhaust air from the chamber *h* and as the only communication with the atmosphere is through the slot *g* a strong suction will be produced at that point and the last particles of dirt forming the ridge in front of the pan will be drawn into the inclosed chamber *h*. The dirt taken up in this way will collect in the lower part of the chamber *h* and may be emptied through the slot *g* or an opening may be formed for this purpose in the rear of the chamber. Emptying will only be required at infrequent intervals on account of the small amount of dirt taken up in this manner. The bellows may now be compressed again and the operation repeated with other piles of sweepings.

I claim as my invention:

1. A dust-pan having the usual receptacle for sweepings which is provided with a straight forward edge, means to form with said edge a relatively narrow suction slit, and means to draw air into said slit for the purpose described.

2. A dust-pan having the usual receptacle for sweepings which is provided with a straight forward edge, means to form with said edge a relatively narrow suction slit, an inclosed space with which the slit communicates as an entrance, and means to exhaust the air suddenly in the inclosed space.

3. A dust-pan having the usual receptacle for sweepings which is provided with a straight forward edge, means to form with said edge a relatively narrow suction slit, an inclosed space with which the slit communicates as an entrance, means to exhaust the air suddenly in the inclosed space, a handle for the pan, and means on the handle for controlling the exhausting means.

4. A dust-pan having a slit at its forward edge and a supplemental dust collecting chamber beneath the main receptacle for sweepings, in combination with a suction device for said chamber and a spring actuated plunger connected with said device.

5. A dust-pan having a sheet-metal plate or the like arranged slightly above its bottom, said plate constituting the main receptacle for the sweepings and forming with the bottom an inclosed shallow chamber with a relatively long and narrow opening at its forward end, and means to exhaust the air in said chamber.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses, this twenty-third day of October, 1914.

LUCIUS S. TYLER.

Witnesses:
LAURENCE A. JANNEY,
AGNES A. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."