

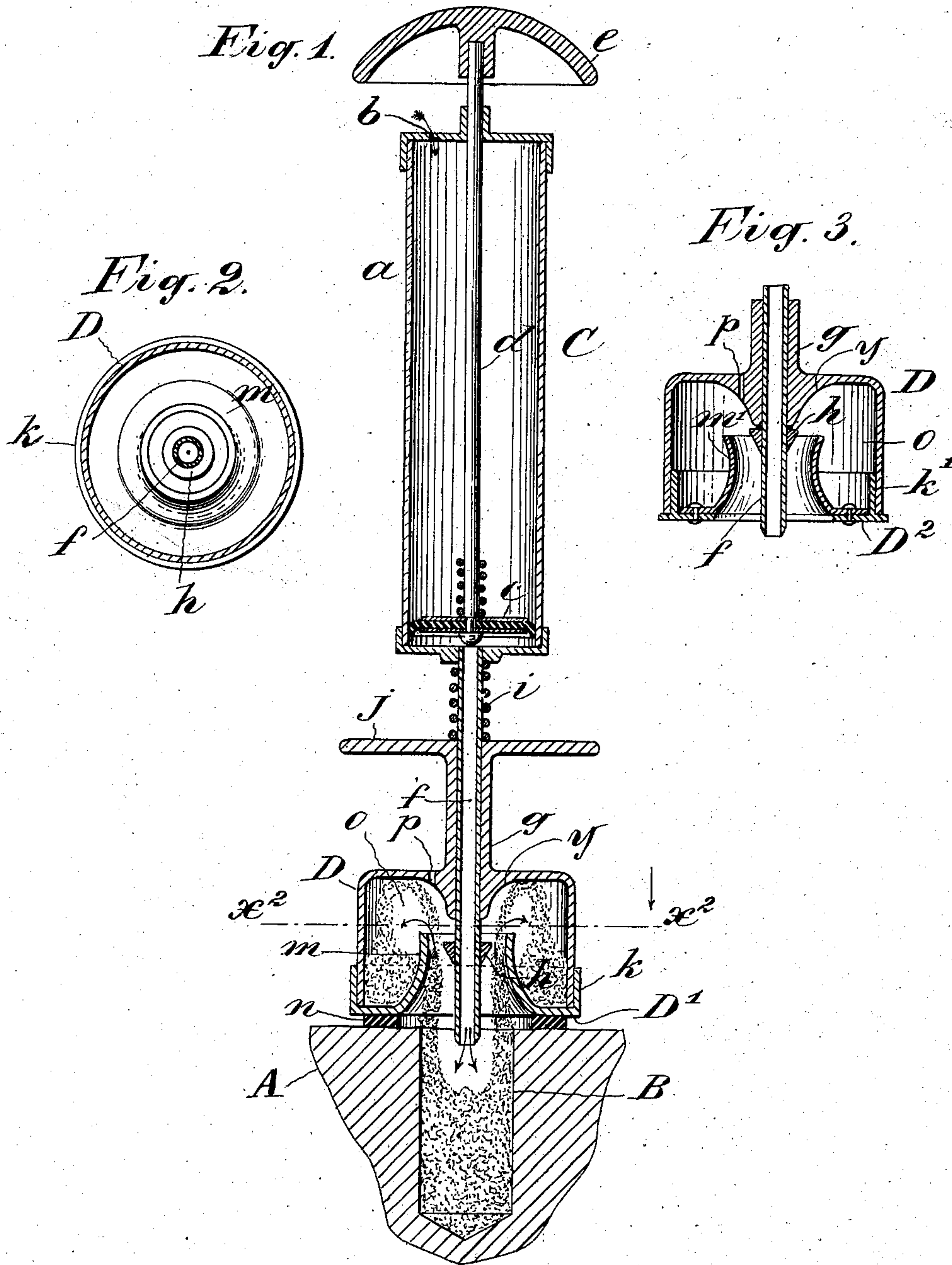
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F. W. BRADY.
TOOL FOR CLEANING DRILLED HOLES

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NO MODEL.



WITNESSES:

J. H. Blinn
H. G. Bennett

INVENTOR:

Francis W. Brady
BY
Henry Bennett
ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANCIS W. BRADY, OF ENGLEWOOD, NEW JERSEY.

TOOL FOR CLEANING DRILLED HOLES.

SPECIFICATION forming part of Letters Patent No. 751,253, dated February 2, 1904.

Application filed July 29, 1903. Serial No. 167,488. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS W. BRADY, a citizen of the United States, residing at Englewood, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Tools for Cleaning Drilled Holes, of which the following is a specification.

This invention relates to that class of devices wherein a current of air is employed for blowing out the accumulation of chips or borings from a hole drilled or bored in metal or other material, but which does not extend through the piece; and the object of the invention is in the main to provide a simple portable tool whereby the forced jet of air is made to lift the chips or particles into a receptacle or receiver forming a removable part of the tool, thereby collecting them, so that they may be conveniently disposed of and not left to be blown about over the work.

In the drawings, which illustrate an embodiment of the invention, Figure 1 is a longitudinal axial section of the tool represented in operative position on the work, and Fig. 2 is a cross-section at x^2 in Fig. 1. Fig. 3 illustrates a slight modification of the tool.

In Fig. 1, A designates, for example, a metal casting having in it a drilled hole B. After the withdrawal of the drill this hole will contain particles of metal left by the drill and which it is desirable or even necessary to remove.

The tool which forms the object of this invention comprises a pump C, which may be somewhat like the ordinary bicycle-pump. It has a body a , with an air-inlet b at the top, a piston c on a rod d , provided with an operating-knob e , and an elongated air-discharge nozzle f in the form of a tube. The nozzle f of the pump extends down through and plays in a guide-sleeve g on a box D, the nozzle having on it a stop-collar h within the box, and a spring i disposed between the pump-body a , and a platform or flange j on the top of the sleeve g . The spring i tends to draw the nozzle up until the stop-collar engages the lower end of the guide-sleeve within the box D. The box is in the form of an inverted cup and fits into a base D'. This base, as

herein shown, has an upright marginal retaining-flange K and an aperture in its bottom, about which rises a tube m , which extends up into the box. This tube m may form, and as seen in Figs. 1 and 2 does form, an upwardly-curved continuation of the bottom plate, as clearly shown. Preferably it will be circular in horizontal section; but this is not essential, nor is it essential that the flange k on the bottom shall embrace the lower edge of the box. Fig. 3 shows a construction where the tube or trunk m' is made separate from the bottom plate D', and the box fits about and exterior to the marginal flange k' on the plate.

The operation is as follows: After the drill is withdrawn from the hole or bore the tool is set over the latter, preferably on an interposed packing-ring n . The piston of the pump C having been previously withdrawn, the operator now presses down the pump-body until the nozzle f extends down to the desired depth in the hole B and then forces down the piston quickly. The air from the jet produced forces upward the particles of metal, and they are deflected outward into the annular space o within the box D about the tube or trunk m . The operation may be repeated, if necessary. After the work is done the base D' is removed and the collected particles emptied out. In order to deflect the particles outward into the space o as they rise in the tube m , the upper margin of the latter may be flared outward, as shown, and the inner surface of the box be provided at y with a concave curvature. The base of the tube m is flared also, and the collar h may be tapered downward, all of which serves to facilitate the free upward flow of the particles into the box. The upright tube or trunk m forms an inner annular wall within the box D, and the upright sides of said box form an outer annular wall, between which is the space o , which receives the particles blown out by the jet. Practically there will be enough leakage about the tube f to permit the air to escape from the box when the piston is pushed down; but if this be deemed too uncertain or not sufficient the box may have in it at any suitable point a small hole p , as seen in Fig. 1.

Having thus described my invention, I claim—

1. In a tool for the purpose specified, a box with a removable base, an aperture in its bottom, an annular chamber to catch and retain the borings and particles blown out, and an upright guide-sleeve, in combination with an air-pump having its nozzle extending down through said guide-sleeve.
2. In a tool for the purpose specified, a box with a removable base, an aperture in its bottom, an annular chamber to catch the borings and particles blown out, and an upright guide-sleeve, in combination with an air-pump having its nozzle slidably mounted in said sleeve and provided with a stop to prevent it from being drawn out therefrom, and a spring about said nozzle and between the pump-body and said sleeve.
3. A tool for the purpose specified, com-

prising a box in the form of an inverted cup and provided with a guide-sleeve *g*, and the base having a retaining-flange to receive the lower margin of said inverted cup, said base having an opening in its bottom plate on which is an upright tube with curved walls, said tube forming, with the wall of the inverted cup an annular chamber to catch the particles, and an air-pump, the nozzle of which extends down through said guide-sleeve and the aperture in the bottom of the box, substantially as set forth.

In witness whereof I have hereunto signed my name, this 28th day of July, 1903, in the presence of two subscribing witnesses.

FRANCIS W. BRADY.

Witnesses:

H. ALAN CONNETT,
WILLIAM J. FIRTH.