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2. Name and address of receiving party(ies)Name: Yancy Strecker

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Street Address: 221 S.E. 4thCity: NewtonState: KSCountry: USA Zip: 67114Additional name(s) & address(es) attached? ☒ Yes ☐ No**4. Application or patent number(s):**☐ This document is being filed together with a new application.

A. Patent Application No.(s)

US 6,823,552 B1

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No**5. Name and address to whom correspondence concerning document should be mailed:**Name: Yancy Strecker

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OP \$40.00 6823552

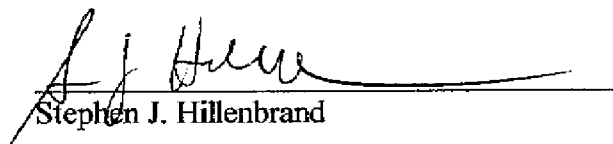
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Name: ALFRED J. CHAVEZ / Alfred J. ChavezInternal Address: 107 N. PINENEWTON, KS, 67114Street Address: 107 N. PINECity: NEWTONState: KANSASCountry: USA Zip: 67114

Stephen J. Hillenbrand
937 Autumn Oak Circle
Concord, CA 94521

February 23, 2009

I, Stephen J. Hillenbrand, owner of US Patent #6,823,552 B1 do as of February 20, 2009
relinquish all my rights as to the ownership of this patent and transfer ownership and all
rights associated with this patent to Yancy Strecker, 221 S. E. 4th, Newton, KS 67114.


Stephen J. Hillenbrand

2/20/09
Date

The United States of America



The Director of the United States Patent and Trademark Office

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

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(12) **United States Patent**
Hillenbrand

(10) **Patent No.:** **US 6,823,552 B1**
(45) **Date of Patent:** **Nov. 30, 2004**

(54) **COMBINATION CLOTHES DRIER AND
DUCT CLEANING BRUSH**

(76) **Inventor:** **Stephen J Hillenbrand, P.O. Box 1491,
San Ramon, CA (US) 94583**

(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** **10/713,826**

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(51) **Int. Cl.⁷** **A46B 3/18; B08B 9/02**

(52) **U.S. Cl.** **15/104.2; 15/106; 15/206**

(58) **Field of Search** **15/104.16, 104.2,
15/106, 206**

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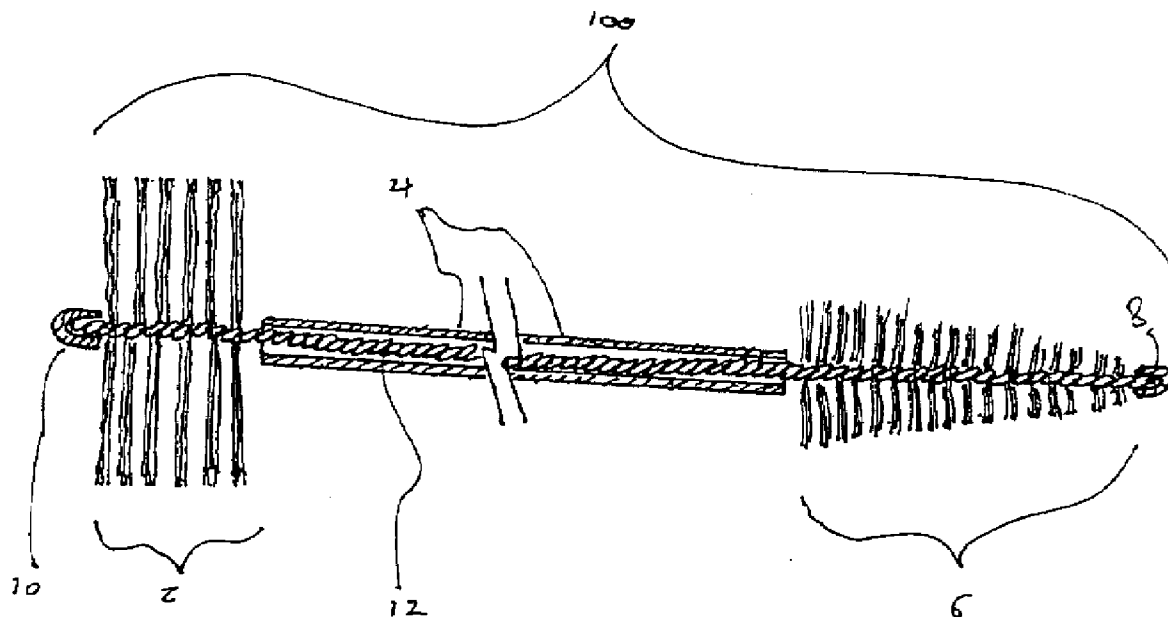
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Primary Examiner—Mark Spisich

(57) **ABSTRACT**

Combination clothes dryer and duct cleaning brush with a length of twisted strand metal wire approximately fifty inches long, a plurality of first bristles radially emanating from one end of each end of the wire length, a plurality of second bristles radially emanating from the opposite end of the wire length, a first and second protective cap fixedly attached to each end tip of the wire length, and a flexible plastic tube that encloses the central portion of the wire length and extends from the inside edge of the first set of bristles to the inside of the second set of bristles. The first set of bristles are eleven and one half inches long and conical in shape and the second set of bristles are cylindrical in shape and are four inches in diameter and two inches long.

6 Claims, 2 Drawing Sheets



PATENT

REEL: 022368 FRAME: 0558

US 6,823,552 B1

1

COMBINATION CLOTHES DRIER AND
DUCT CLEANING BRUSHCROSS REFERENCE TO RELATED
APPLICATIONS

Not Applicable

STATEMENT REGARDING FEDERALLY
SPONSORED RESEARCH OR DEVELOPMENT

Not Applicable

DESCRIPTION OF ATTACHED APPENDIX

Not Applicable

BACKGROUND OF THE INVENTION

This invention relates generally to the field of cleaning brushes and more specifically to a combination clothes drier and duct cleaning brush. Cleaning brushes of many kinds are well known. One type of brush construction involves twisting a pair of metal wires and, while the wire is being twisted, inserting a plurality of bristles radially at a ninety degree angle. The final construction allows for a somewhat flexible brush where the brush head can be inserted into non linear orifices. Although brushes of this type exist, there does not exist a single brush tool that can clean both the duct portion of a standard clothes drier as well as the lint storage portion of a standard clothes drier.

Additionally, there does not exist a cleaning brush that incorporates bristles of polyester on one end of the cleaning brush and bristles of nylon on the opposite end of the cleaning brush.

BRIEF SUMMARY OF THE INVENTION

The primary object of the invention is to provide a combination clothes drier and duct cleaning brush.

Another object of the invention is to provide a combination brush where one end is designed to clean the lint trap of a standard clothes drier and the opposite side is designed to clean a standard clothes drier duct or air register or the like.

Another object of the invention is to provide a combination brush where the bristles do not loose stiffness when wet.

A further object of the invention is to provide a combination brush where the tips of the brush are protected to that internal surfaces of a clothes drier or duct are not damaged.

Other objects and advantages of the present invention will become apparent from the following descriptions, taken in connection with the accompanying drawings, wherein, by way of illustration and example, an embodiment of the present invention is disclosed.

In accordance with a preferred embodiment of the invention, there is disclosed a combination clothes dryer and duct cleaning brush comprising: a length of twisted strand of metal wire approximately fifty inches long, a plurality of first bristles radially emanating from one end of each end of said wire length, a plurality of second bristles radially emanating from the opposite end of said wire length, a first and second protective cap fixedly attached to each end tip of said wire length, and a flexible plastic tube that encloses the central portion of said wire length and extends from the inside edge of said first set of bristles to the inside of said second set of bristles.

BRIEF DESCRIPTION OF THE DRAWINGS

The drawings constitute a part of this specification and include exemplary embodiments to the invention, which

2

may be embodied in various forms. It is to be understood that, in some instances various aspects of the invention may be shown exaggerated or enlarged to facilitate an understanding of the invention.

FIG. 1 is a perspective view of the invention.

FIG. 2 is a side section view of the invention.

DETAILED DESCRIPTION OF THE
PREFERRED EMBODIMENTS

Detailed descriptions of the preferred embodiment are provided herein. It is to be understood, however, that the present invention may be embodied in various forms. Therefore, specific details disclosed herein are not to be interpreted as limiting, but rather as a basis for the claims and as a representative basis for teaching one skilled in the art to employ the present invention in virtually any appropriately detailed system, structure or manner.

Referring now to FIG. 1 we see a perspective view of the invention 100. The cleaning brush of this invention has a cleaning head on each end. The first cleaning head 6 is conical in shape and is constructed of low burgomaster polyester S strand material and are rather densely packed when intertwined with a pair of metal wires during a standard brush construction procedure. The conical brush shape 6 is approximately eleven and one half inches long, one and one quarter of an inch at the widest diameter and three quarters of an inch in diameter at the smallest diameter. The S strand polyester bristles are an ideal choice for cleaning lint from a standard clothes dryer in that they will not damage the interior surfaces of the drier and maintain stiffness even when wet. The taper of the brush 6 allows the brush head 6 to more easily enter and traverse the interior of standard lint traps found in standard clothes driers. The relatively soft bristles made as described above tend to draw in and removably retain lint and hairs that standard lint traps miss so that the lint can be safely removed from internal areas of a standard clothes drier. The opposite side of the cleaning brush 100 includes a second brush head 2 that is designed for cleaning standard flexible ducts that are used to provide an exit for moist air that is a result of drying activity in a standard clothes drier. These ducts tend to be four inches in diameter. Therefore the duct cleaning head 2 is comprised of a plurality of bristles that form a brush head approximately four inches in diameter and approximately two inches long. The length of the entire invention 100 is approximately fifty inches. This length was chosen so that the user can effectively clean far into standard drier ducts. FIG. 2 shows a side section view of the present invention 100. This view shows the twisted wire pair 12 that is comprised of two strands of metal wire, each approximately one tenth of an inch in diameter. The combination of this wire diameter and the surrounding plastic tube 4 leads to the ideal flexibility to traverse non linear duct interiors, yet be stiff enough not to fold or kink during use. Each end of wire pair 12 is capped with a plastic enclosure 8, 10. The caps are made of a soft burgomaster plastic such as EVA and prevent the tips of the brush from damaging the interior of clothes driers or other items being cleaned by the brush 100. The duct cleaning head 2 is also ideal for cleaning the interior of heating registers and the like.

While the invention has been described in connection with a preferred embodiment, it is not intended to limit the scope of the invention to the particular form set forth, but on the contrary, it is intended to cover such alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

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