

(No Model.)

T. W. GREEN.
IMPELLER FOR ROTARY BLOWERS.

No. 565,347.

Patented Aug. 4, 1896.

Fig. 1.

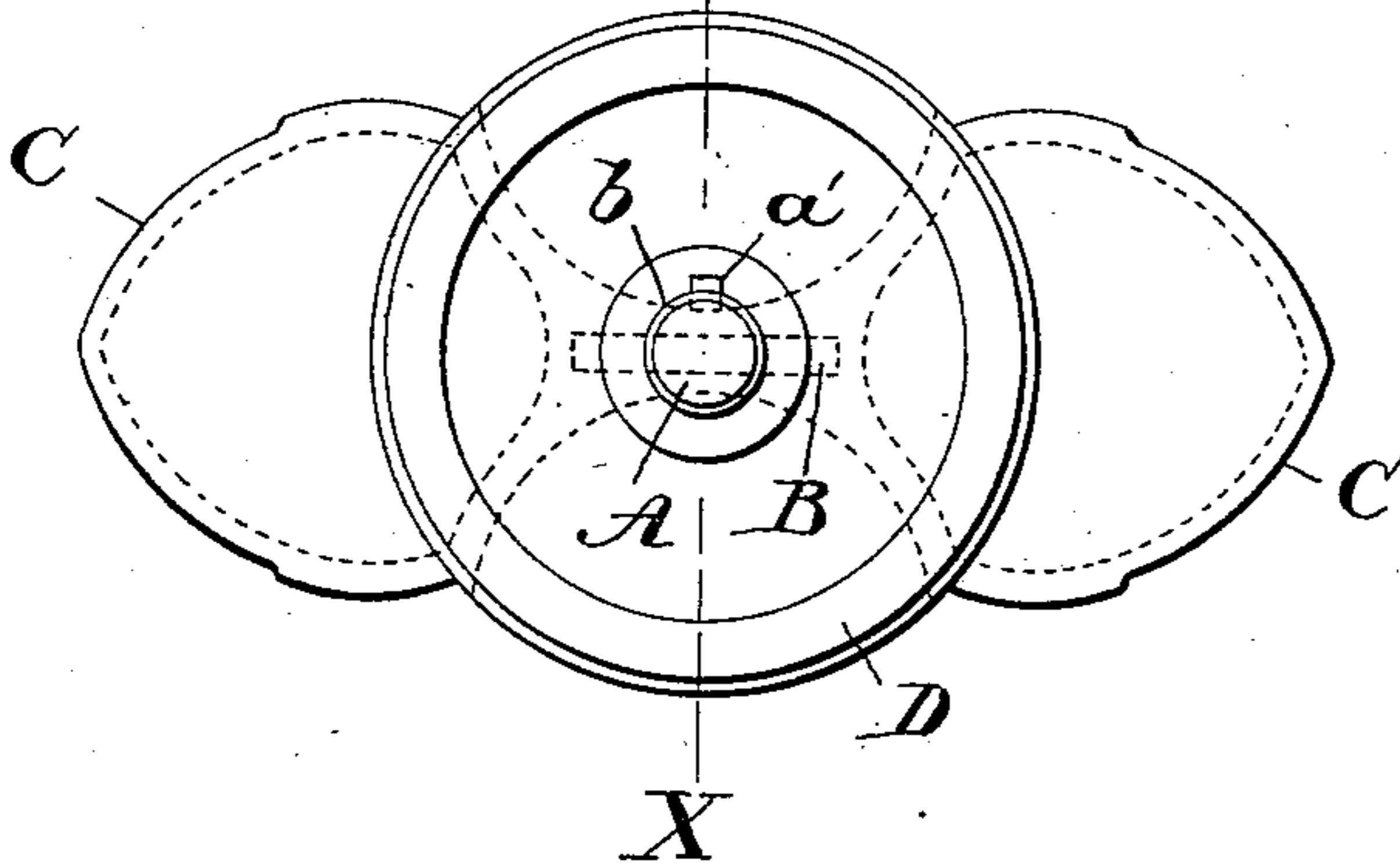


Fig. 2.

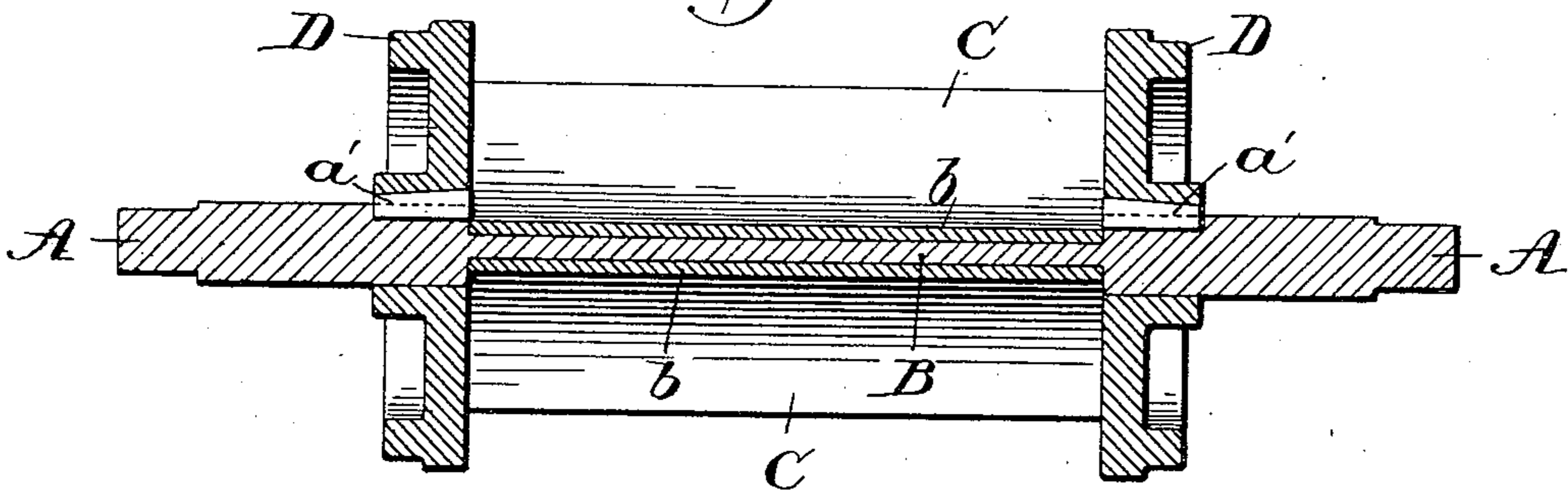


Fig. 3.

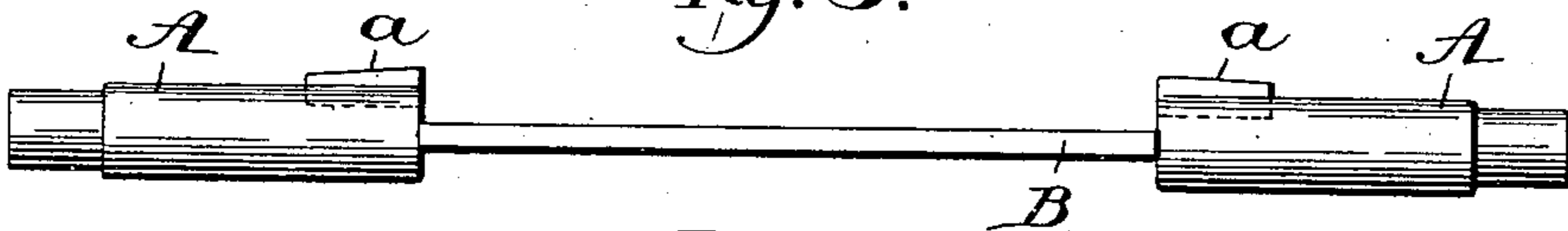
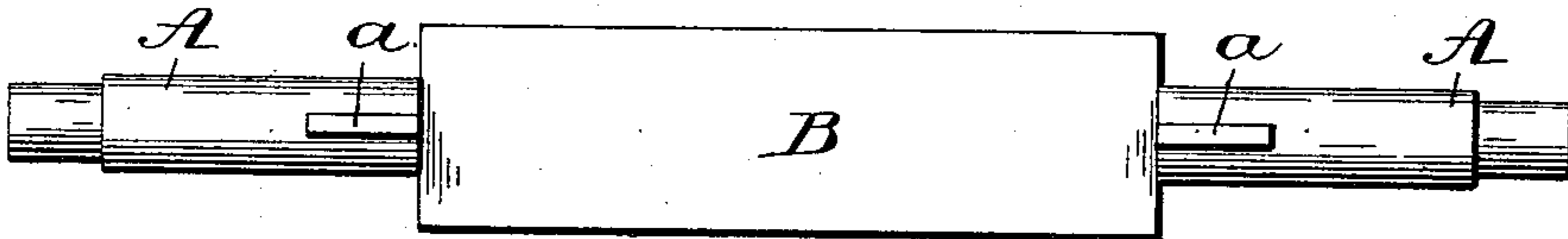


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

THOMAS W. GREEN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
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IMPELLER FOR ROTARY BLOWERS.

SPECIFICATION forming part of Letters Patent No. 565,347, dated August 4, 1896.

Application filed February 11, 1896. Serial No. 578,836. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. GREEN, a citizen of the United States, residing in Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Constructing the Revolvers or Impellers of Rotary Blowers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to the revolvers or impellers used in rotary blowers or exhausters; and the object of my improvement is to fit said revolvers with steel driving-shafts that extend from end to end thereof and yet allow the two wings of the revolver to be connected by a thin neck or web of metal. Heretofore the revolvers or impellers of rotary blowers have been cast and bored out so that a cylindrical driving-shaft could be fitted therein.

With the form of blower described in the application for a patent filed by me on March 4, 1895, and numbered serially 540,430, it is very desirable to have the portion of the revolver that connects the two wings together made as thin as possible. Consequently a cylindrical shaft of the required size could not be fitted therein. To overcome this difficulty and obtain the necessary strength, I construct a steel shaft with cylindrical ends and a flattened middle portion and afterward cast the revolver around the shaft and securely fasten it thereto in the manner hereinafter described.

The general construction of this class of blowers is particularly described in the patents granted to me on February 20, 1894, No. 515,212, and January 29, 1895, No. 533,292.

In the accompanying drawings, Figure 1 represents an end view of a revolver having my improvement therein and ready to be fitted into the outer casing of the blower. Fig. 2 is a sectional view through the middle of

the revolver on line *xx* of Fig. 1. Fig. 3 is an edge view of the driving-shaft. Fig. 4 is a view of the driving-shaft, showing the flattened middle portion.

A A represent the cylindrical ends of the driving-shaft.

B is the flattened middle portion of the driving-shaft.

a a are temporary keys fitting into corresponding key-seats cut into the cylindrical portions of the driving-shaft.

C C are the two wings of the revolver.

D D are solid heads cast integral with the wings.

b is a thin neck or web cast around the flat portion of the driving-shaft and joining together the wings C C of the revolvers.

a' a' are the permanent keys fitting into the driving-shaft and the revolver.

The driving-shaft being formed, as shown in Figs. 3 and 4, with the necessary key-seats made therein, the temporary keys *a a* are accurately fitted to the key-seats, and after being covered with foundry-black carefully secured therein. The shaft is then placed in a proper mold and the revolver cast around it in the position shown in Figs. 1 and 2. After the revolver has been removed from the mold the temporary keys *a a* are removed and the permanent keys *a' a'* driven into their places. As the temporary keys *a a* are covered with foundry-black, the melted iron will not adhere thereto during the process of casting the revolver, and after the casting has been made these temporary keys can be easily removed and an accurate and smoothly-finished key-seat is thus formed in the revolver.

From the shape of the revolver and the position of the driving-shaft it would be very expensive and almost impossible to cut accurately-fitting key-seats in the driving-shaft and the revolvers after they had been cast together in the manner herein described.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a revolver for rotary blowers, the combination of a driving-shaft having the cylindrical ends A, A, and flattened middle por-

tion B, with the wings C, C, connected together by the thin web *b*, and cast around the flattened portion of the driving-shaft, substantially as shown and described.

- 5 2. A revolver for rotary blowers consisting of a shaft having its middle portion flattened, the wings or blades of said revolver, the web *b* cast over and around said flattened portion,

and the solid heads D, D, cast integral with the wings, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS W. GREEN.

Witnesses:

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SAML. H. KIRKPATRICK.