

No. 655,152.

Patented July 31, 1900.

T. W. GREEN.

IMPELLER FOR ROTARY BLOWERS.

(Application filed Feb. 14, 1900.)

(No Model.)

Fig. 1.

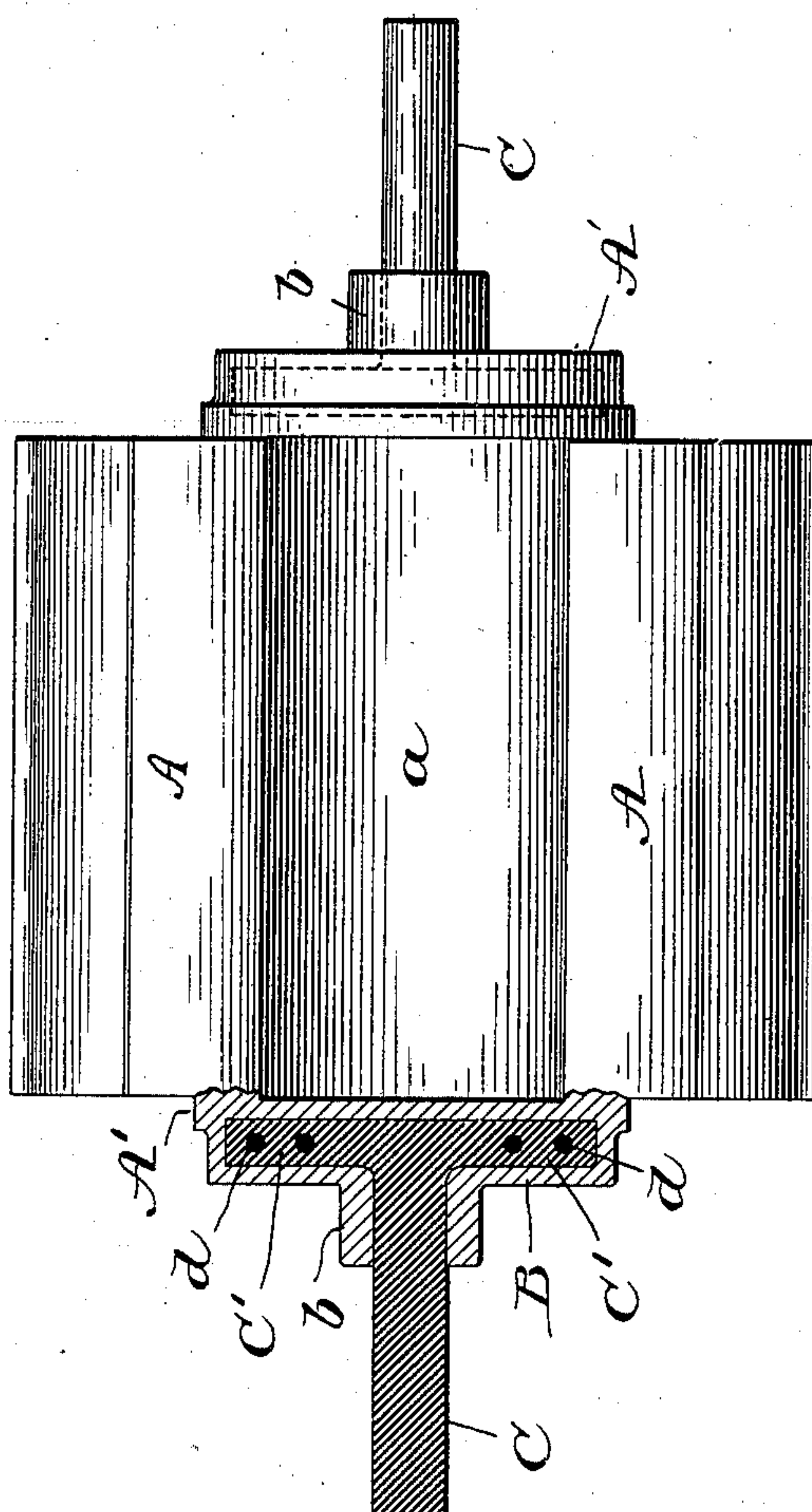
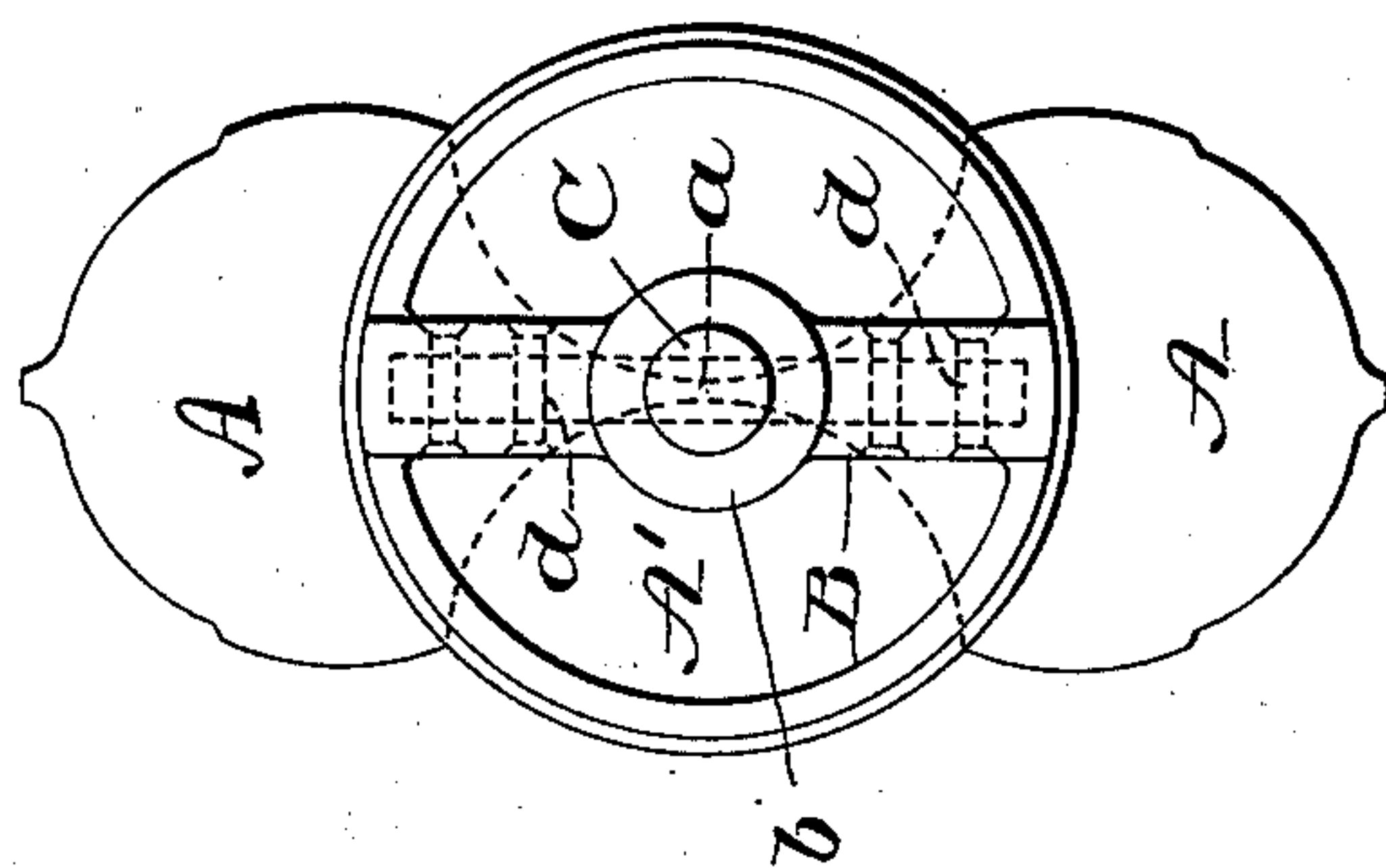


Fig. 2.



Witnesses.

M. Loe
J. Boyd Coates

Inventor.

Thomas W. Green
by *Thomas S. Mowles*
Attorney.

UNITED STATES PATENT OFFICE.

THOMAS W. GREEN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
WILBRAHAM BAKER BLOWER COMPANY, OF SAME PLACE.

IMPELLER FOR ROTARY BLOWERS.

SPECIFICATION forming part of Letters Patent No. 655,152, dated July 31, 1900.

Application filed February 14, 1900. Serial No. 5,123. (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 Impellers for 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 construction of the impellers of rotary blowers; and the object of my improvement is to so construct the impeller and the supporting-journals thereof that the greatest inward reach may be obtained. In consequence of these impellers being so heavy and running at such a high rate of speed when constructed in the ordinary way it is very desirable and, in fact, for safety almost necessary that they should be cast with a wrought-steel shaft extending clear through from one side to the other, the middle or central portion that connects the wings of said impeller being cast around the steel shaft. When constructed in this way, the middle or web portion that connects the two wings of the impeller and through which the driving-shaft extends must be at least four or five inches in thickness when the steel shaft is flattened in the part extending through the body of the impeller, and if the middle portion of the steel shaft is not so flattened then this portion of the impeller is correspondingly thickened. As this thickness in the middle or central portion of the impeller is unnecessary except for the purpose of holding the steel driving-shaft in position and as it is very desirable to have the wings of one impeller reach as far as possible into the middle of the opposite impeller, and thus increase the capacity of the blower, I have constructed the wrought-steel shaft in two pieces or journals that can be cast into and securely fastened to the two ends of the impeller and not extend through the middle or central portion thereof. When constructed in this way, the wings of each impeller may

be joined together by only a thin web portion that will prevent the passage of the air. To accomplish the desired result, I make two short wrought-steel journals, one for each end of each impeller. On the end of each of these journals, at right angles thereto, I securely weld or forge another strip of steel forming two arm-like projections of sufficient length to extend nearly the whole distance across the head or solid end portions of the impellers.

The particular style and shape of the impellers of rotary blowers and the manner of their construction and operation being fully described in a patent granted to me May 5, 1896, and numbered 559,703, I have in this application shown only a single impeller detached from the other parts of the blower.

In the accompanying drawings, Figure 1 is a view of an impeller of a rotary blower, showing in one end thereof the finished-steel supporting-journals, the opposite end of said impeller being shown in section as on a line drawn through the center of the journals. Fig. 2 is an end view of the impeller having my improvement therein.

A A are the two wings of the impeller.

a is the thin web or middle portion joining the two heads together.

A' A' are the solid circular head portions of the impeller, extending from one wing to the other and practically forming the several parts of the impeller into one piece.

B is a flange extending across the middle portions of the heads A' in the manner shown in Fig. 2.

b is a circular extension or boss cast onto the flange B.

C is the horizontal portion of the steel supporting-journals.

C' C' are two flat extensions or arms forged upon the inner ends of the steel journals C at right angles to the main portion in the position shown in Fig. 1.

d d are rivets passing through the flanged portion B and extensions or arms C' of the steel supporting-journals for the purpose of more securely fastening these parts together into one piece.

Before casting the impeller the steel journals are placed in the mold in such position that the melted iron will flow around them

and the journals and impeller be cast into one piece in the manner shown. After the impeller is cast the rivets $\bar{d} \bar{d}$ are inserted in holes made through the flat arms C' of the journals and the flange extension B. These rivets serve to more securely fasten the parts together and make it impossible for any separation to take place.

I have shown the wrought-steel journals with but two extending arms, but, if desired, three or more of these arms may be used.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an impeller for rotary blowers, the combination with the separate and independent journals; of a solid head cast around a portion of each journal, a connecting-web between the solid heads, and oppositely-disposed wings connected to said web and solid heads, as set forth.

2. In an impeller for rotary blowers, the

combination of separate and independent journals having oppositely-disposed arms, of a solid head cast around the arms and a portion of the journal, a connecting-web between the solid heads, and oppositely-disposed wings connected to said web and solid heads, as set forth.

3. In an impeller for rotary blowers, the combination of separate and independent journals, arms secured thereon and at about right angles thereto, of solid heads cast over said arms and a portion of the journals, a connected web between the solid heads and oppositely-disposed wings connected to said web and solid heads, the whole forming a complete and integral impeller, as set forth.

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

THOMAS W. GREEN.

Witnesses:

SAML. H. KIRKPATRICK,
THOS. D. MOWLDS.