

No. 897,992.

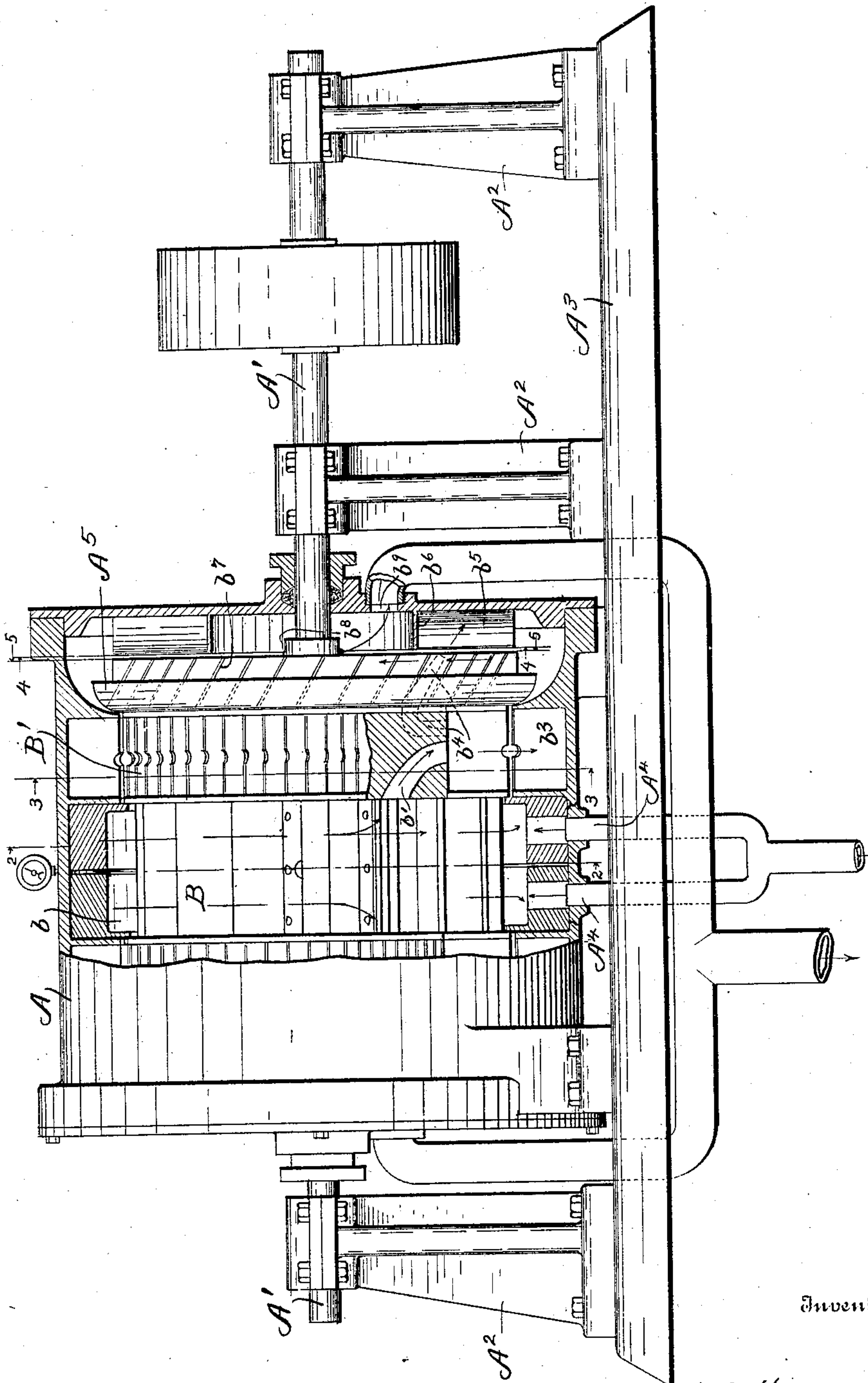
PATENTED SEPT. 8, 1908.

N. McKEE.
TURBINE.

APPLICATION FILED MAR. 5, 1908.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2

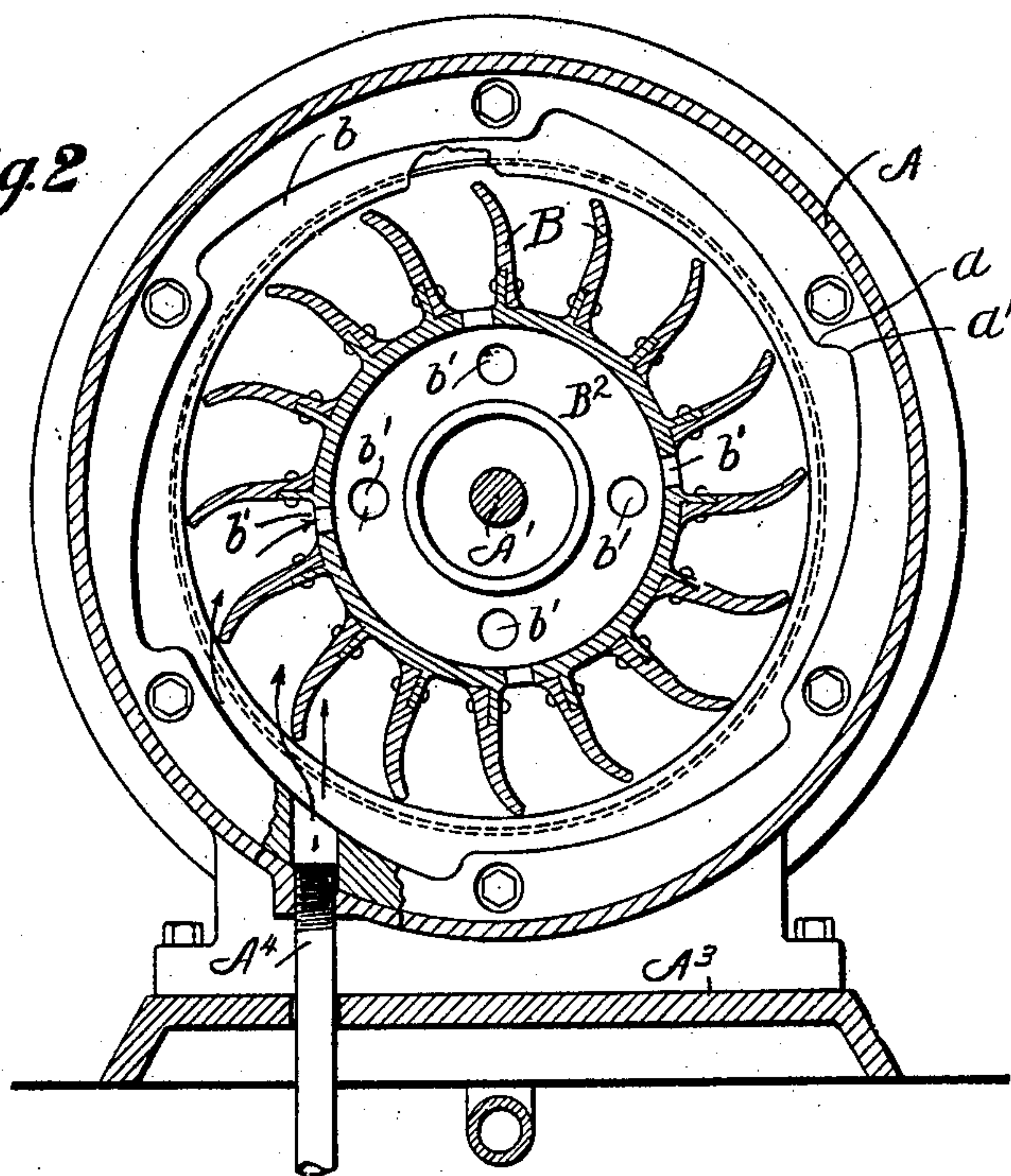
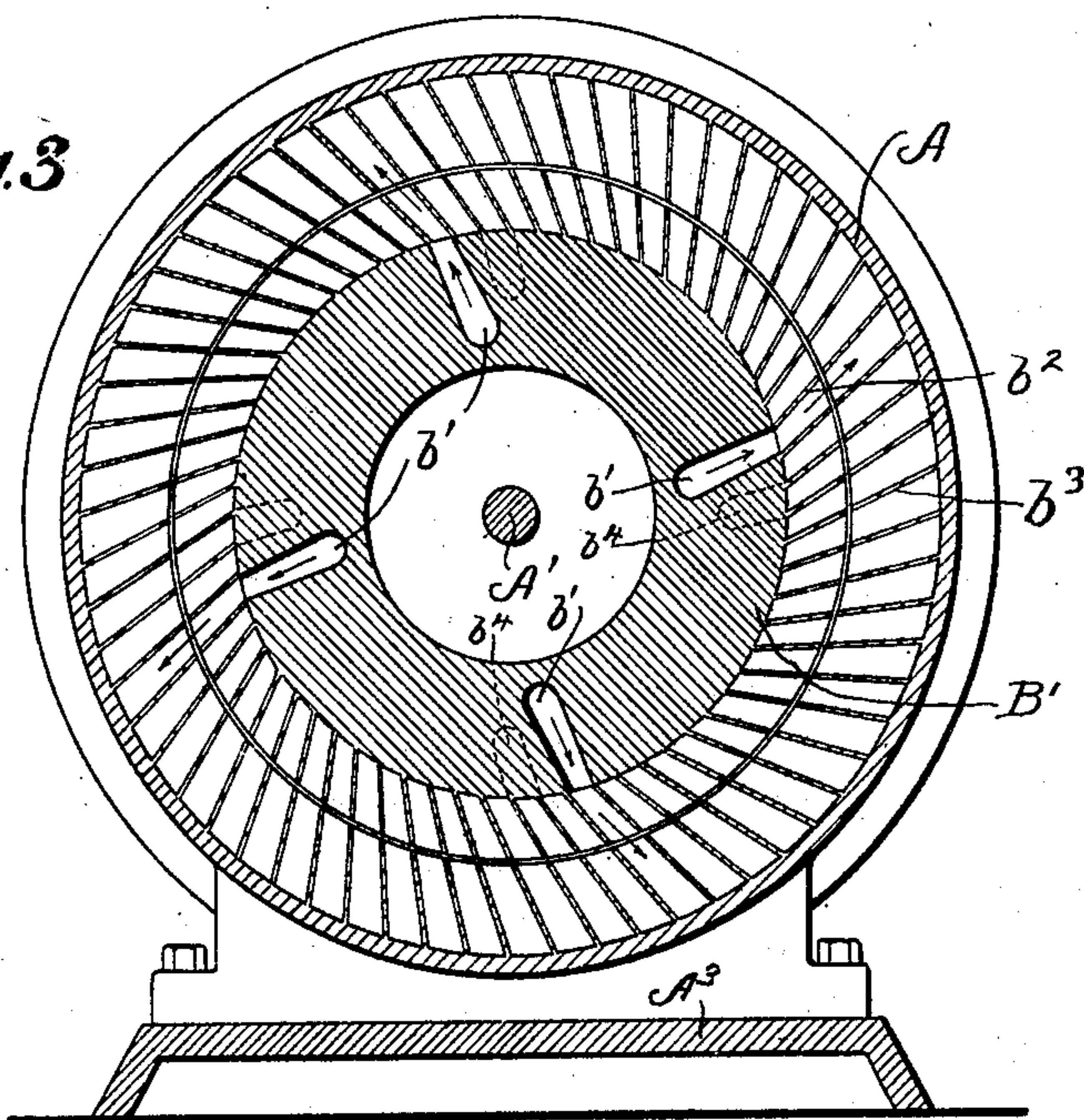


Fig. 3



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3 SHEETS—SHEET 3.

Fig. 4.

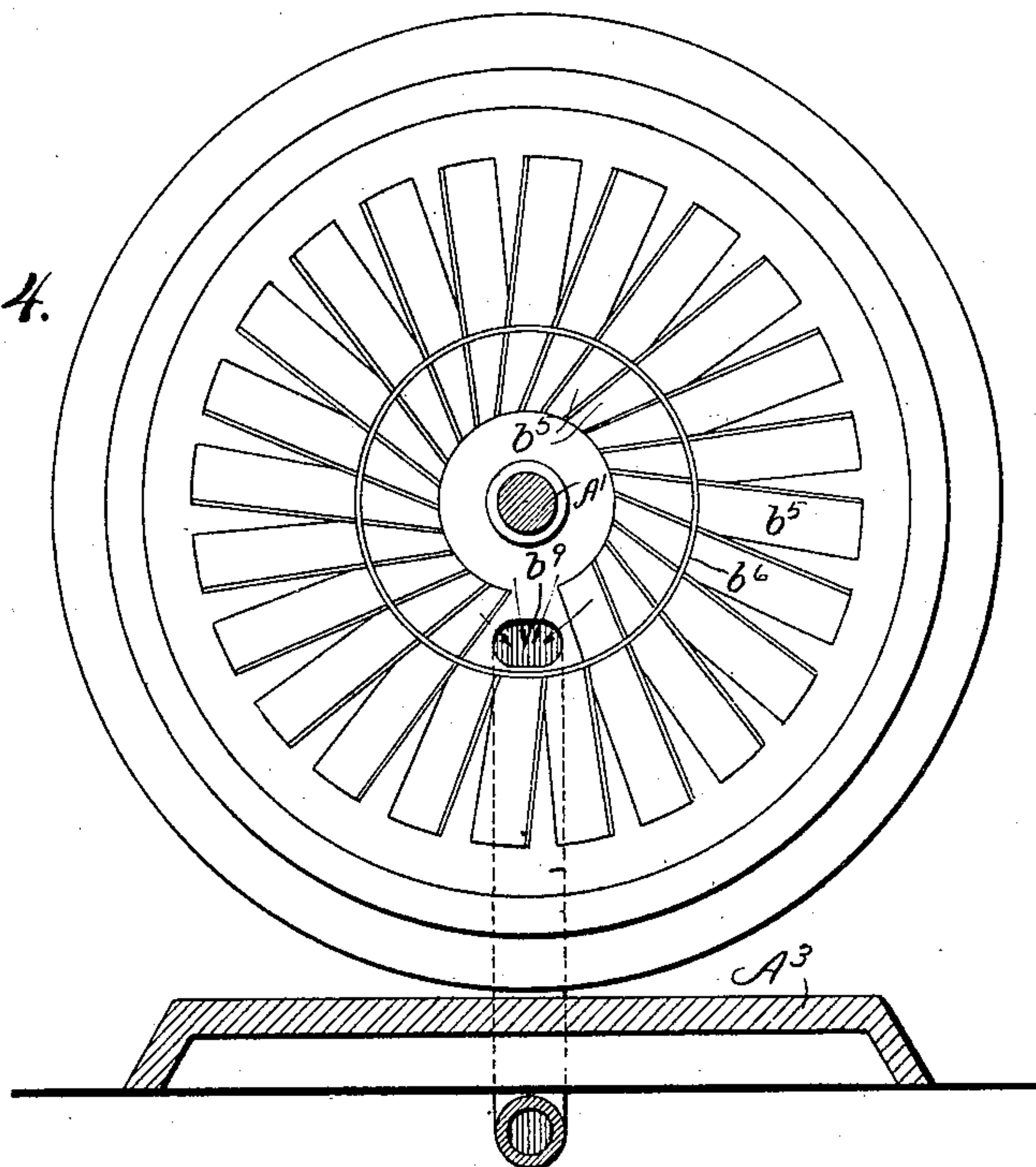
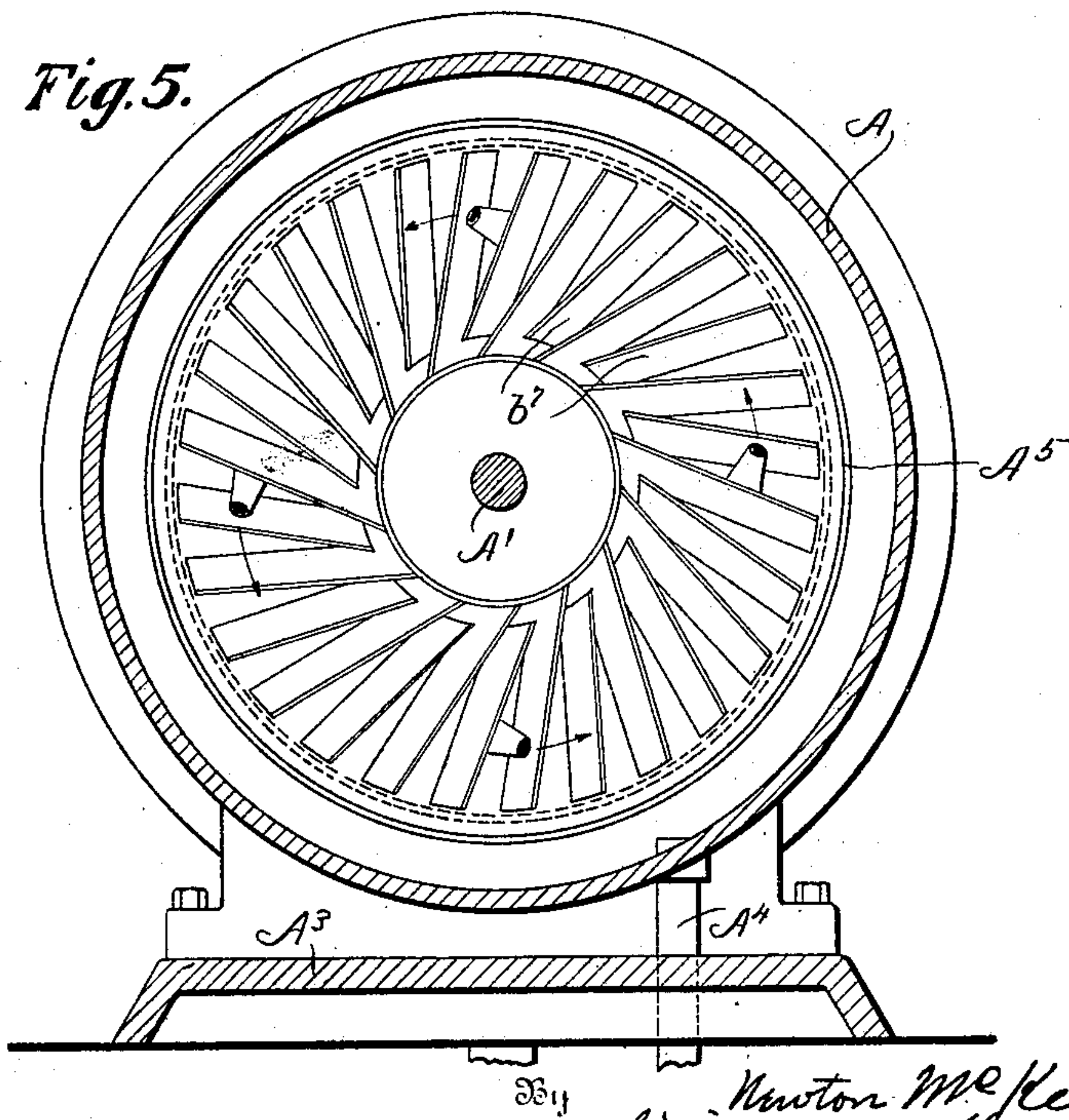


Fig. 5.



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UNITED STATES PATENT OFFICE.

NEWTON McKEE, OF MILWAUKEE, WISCONSIN.

TURBINE.

No. 897,992.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed March 5, 1908. Serial No. 419,297.

To all whom it may concern:

Be it known that I, NEWTON McKEE, a citizen of the United States, and a member of the National Home for Disabled Volunteer Soldiers at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Turbines, of which the following is a specification.

10 My invention relates to turbines in general and more particularly to the class of turbines adapted to be driven by steam pressure.

The principal object of my invention is to provide in a turbine means for utilizing and reutilizing the power to be had from the velocity and expansiveness of steam to the greatest advantage.

Referring to the drawings: Figure 1 is a plan view with parts broken away; Fig. 2 is a cross sectional view on lines 2—2 of Fig. 1; Fig. 3 is a cross sectional view on lines 3—3 of Fig. 1; Fig. 4 is a cross sectional view on lines 4—4 of Fig. 1 showing the inside of the cylinder end and Fig. 5 is a cross sectional view on lines 5—5 of Fig. 1.

Referring by letters to the figures: A has reference to a stationary cylinder casing provided with a main shaft A^1 , extending through its center axially, which shaft has bearings at different points in a suitable frame A^2 which in turn rests on a base A^3 .

Leading from the steam supply I provide inlet ports A^4 adapted to supply means of power to the turbine. Said inlet ports are arranged to project steam against blades B on a tangent and to give power to the turbine through the velocity of the steam. Blades B have as a supporting frame work a distance piece hub B^2 the combination of the two forming an initial running wheel which is adapted to be firmly keyed to shaft A^1 . Steam projected on a tangent against blades B moves centrifugally against a lap ring b and is permitted to expand in recesses a^1 and by exerting a pressure against lugs a will exert an expansive force against blades B. The steam from recesses a^1 reacts until it reaches the peripheral trailing buckets or main portion steam chambers formed in the space between said blades B which contain the steam ports b^1 of the initial running wheel through which the steam passes into steam ports b^1 of the twin bucketed or auxiliary wheels B^1 and escapes centrifugally through peripheral trailing buckets b^2 arranged on the periphery of said wheels B^1

into deflector cups b^3 arranged on the inside of casing A and encircling each of said auxiliary or twin bucketed wheels. From deflector cups b^3 the steam finds means of escape in a centripetal direction through steam ports b^4 of wheels B^1 , and again projects itself into reaction buckets formed in the space between deflectors b^5 arranged on the inside of the end walls of casing A and outwardly from ring b^6 . From said cups the steam again reacts into buckets formed in the space between ribs b^7 arranged on the outside wall of the twin bucketed wheels B^1 , from which buckets the steam again reacts against a plurality of stationary sections b^8 located on the inside of the end wall of casing A and inwardly from ring b^6 , from which point it is permitted to freely escape to exhaust port b^9 . Secured to auxiliary wheels B^1 I provide guide rings A^5 which serve to retard the escape of steam from the peripheral trailing buckets of wheels B^1 . At both ends of cylinder casing A I have provided stuffing boxes a^2 adapted to secure steam tight joints.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A turbine comprising twin bucketed wheels separated upon a shaft by a distance piece hub, blades for said hub forming main portion steam chambers and means arranged whereby the steam is passed centrifugally from said steam chambers to the buckets of said wheels.

2. A turbine comprising twin bucketed wheels separated upon a shaft by a distance piece hub carrying blades, a lap ring encircling said blades, lugs and recesses arranged on the inner face of said ring and steam ports adapted to pass steam centrifugally from the steam chambers formed between said blades to the buckets of said wheels.

3. A turbine comprising a bucketed wheel, a distance piece hub secured to said wheel upon a shaft, blades for said hub, the distance between which forming main portion steam chambers and means provided for the escape of steam centrifugally from said steam chambers to the buckets of said wheel.

4. A turbine comprising twin bucketed wheels, a distance piece hub separating said wheels upon a shaft, blades for said hub forming main portion steam chambers, steam ports in the steam sides of said wheels adapted to conduct steam centrifugally therein and steam ports on the outside of said wheels

adapted to conduct steam centripetally therein.

5 5. A turbine comprising twin bucketed wheels, a distance piece hub separating said wheels upon a shaft, blades for said hub forming main portion steam chambers, steam ports in the steam sides of said wheels, a casing for said turbine, deflector cups arranged in said casing, steam ports on the outside of said wheels adapted to conduct steam centripetally therein, and deflectors arranged on the inside of the end of said casing.

10 6. A turbine comprising twin bucketed wheels, a distance piece hub separating said wheels upon a shaft, blades for said hub forming main portion steam chambers, means for conducting steam centrifugally through said wheels, a casing for said turbines, deflector cups arranged in said casing, means for conducting steam centripetally through said wheels, deflectors arranged on the inside of the end of said casing and a guide ring adapted to retard the escape of steam from said buckets.

25 7. A turbine comprising twin bucketed wheels, a distance piece hub separating said wheels upon a shaft, blades extending on a tangent from the periphery of said hub the distance between which forming main portion steam chambers, steam ports provided in the steam sides of said wheel adapted to convey steam centrifugally therein, a casing for said turbine, deflector cups adapted to receive steam from said wheels and deflect it back again, steam ports on the outside of said wheels adapted to conduct steam centripetally in said wheels, deflectors and stationary sections arranged on the inside of the end of said casing, ribs on the outside of said wheels and an exhaust port therefor.

40 8. A turbine comprising an initial running

wheel and twin bucketed wheels each provided with trailing peripheral buckets, and each twin bucketed wheel having steam ports arranged for outward delivery through the buckets, a stationary member provided with a set of deflector cups encircling each of the twin bucketed wheels, said initial running wheel being provided with steam ports leading to the steam ports of the twin bucketed wheels, the end walls of said casing being provided with reaction buckets and the twin bucketed wheels being provided with inwardly and laterally extending steam ports arranged to discharge into said end wall buckets.

9. A turbine comprising an initial running wheel and twin bucketed wheels each provided with trailing peripheral buckets and each twin bucketed wheel having steam ports arranged for outward delivery through the buckets, a stationary member provided with a set of deflector cups encircling each of the twin bucketed wheels, said initial running wheel being provided with steam ports leading to the ports of the twin bucketed wheels, the opposing end walls of said casing and walls of the twin bucketed wheels being provided with buckets and said twin bucketed wheels having outlet steam ports leading radially inward from the peripheral buckets and laterally outward between the side buckets, together with exhaust ports leading through the end wall of the casing.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NEWTON McKEE.

Witnesses:

L. A. THOMPSON,
LOUIS MENGERT.