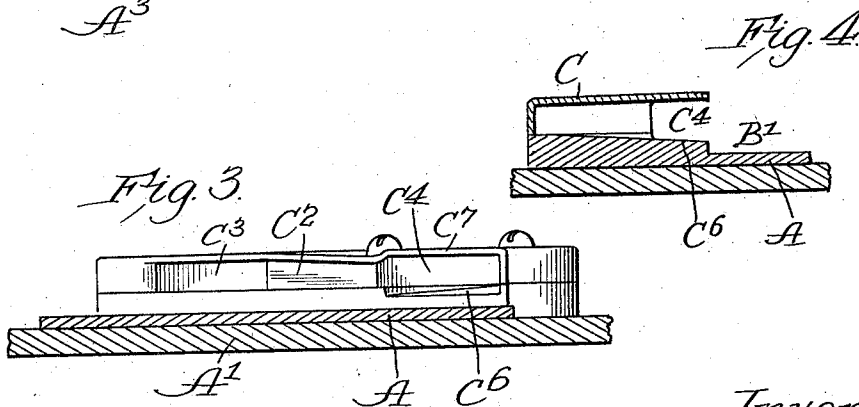
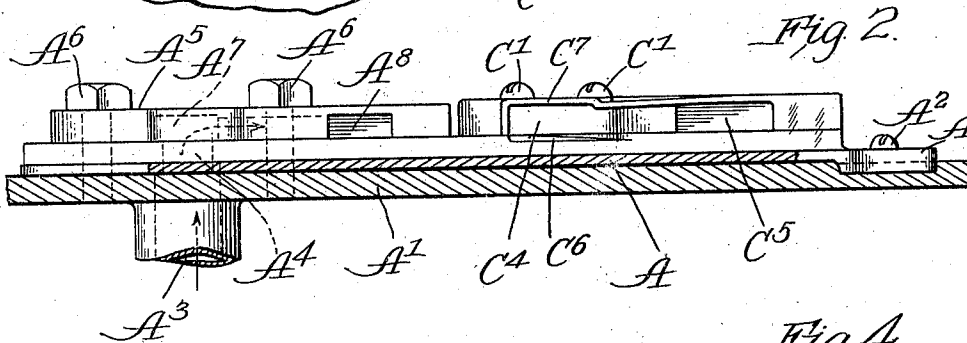
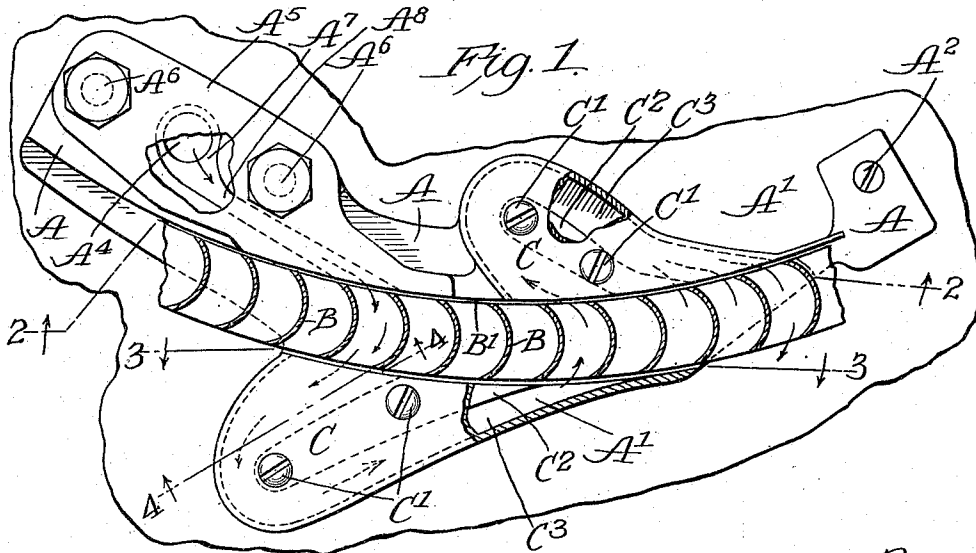


C. W. DAKE.
STEAM TURBINE.
APPLICATION FILED OCT. 11, 1911.

1,038,534.

Patented Sept. 17, 1912.



Witnesses:

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STEAM-TURBINE.

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To all whom it may concern:

Be it known that I, CHARLES W. DAKE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Steam-Turbines, of which the following is a specification.

My invention relates to improvements in steam turbines and has for one object to provide a new and improved form of nozzle, guide passages and supports therefor and is illustrated diagrammatically in one form in the accompanying drawing, wherein—

Figure 1 is a plan view with the parts in section; Fig. 2, a section along the line 2—2 of Fig. 1; Fig. 3, a section along the line 3—3 of Fig. 1; Fig. 4, a section along the line 4—4 Fig. 1.

Like parts are indicated by like letters throughout the several figures.

The nozzle and guide passage support A is rigidly attached at one end to the turbine housing A¹ diagrammatically shown by the cap screw A². The steam supply pipe A³ is carried in the housing A¹ and registers with the passage A⁴ in the guide A. The nozzle plate A⁵ is rigidly fastened to the support A by the cap screws A⁶ which engage the housing A¹ to hold the whole in position. The chamber A⁷ in the nozzle plate and open at the bottom thereof, registers with the passage A⁴ and communicates with the steam nozzle A⁸. The nozzle A⁸ discharges angularly against the curved buckets B which are mounted on the turbine wheel not shown, and travel in the curved slot or depression B¹ in the face of the support.

The guide passages and kindred parts now to be described, while slightly differing in size and shape are identical in operation and therefore, the description of one will answer for both.

The guide passage housing C is rigidly attached to a support A on one side of the depression B¹ by means of the screws C¹ which hold it and the guide block C² therein firmly in position upon the support forming the guide passage C³ having the large intake opening C⁴ and the small discharge opening C⁵. The passage C³ decreases gradually in cross sectional area from the intake opening C⁴ to the discharge opening C⁵ and this decrease in cross sectional area

is obtained both by decreasing the distance between the wall of the housing and the guide block C² and by beveling off the surface of the support as indicated at C⁶ in Figs. 2, 3 and 4, and also by bending down the roof and by bending up the roof of the housing as indicated at C⁷ to provide a constantly contracting cross sectional area from the intake to the discharge end of the guide passage.

I claim:

1. A nozzle and guide passage support for steam turbines comprising a plate and a curved groove therein of rectangular cross section and a plurality of grooves extending therefrom and of lesser depth than and decreasing in depth from said groove.

2. A nozzle and guide passage support for steam turbines comprising a plate and a curved groove therein of rectangular cross section and a plurality of grooves inclined thereto of lesser depth than and increasing in depth from said groove.

3. A nozzle and guide passage support for steam turbines comprising a plate and a curved groove therein of rectangular cross section and a plurality of grooves extending therefrom and of lesser depth than and decreasing in depth from said groove said grooves being of rectangular cross section.

4. A nozzle and guide passage support for steam turbines comprising a plate and a curved groove therein of rectangular cross section and a plurality of grooves inclined thereto of lesser depth than and increasing in depth from said groove said grooves being of rectangular cross section.

5. A nozzle and guide passage support for steam turbines comprising a plate and a curved groove therein and a plurality of grooves extending therefrom and of lesser depth than and decreasing in depth from said groove.

6. A nozzle and guide passage support for steam turbines comprising a plate and a curved groove therein and a plurality of grooves inclined thereto of lesser depth than and increasing in depth from said groove.

7. A nozzle and guide passage support for steam turbines comprising a plate and a curved groove therein of rectangular cross section and a plurality of grooves extending therefrom and of lesser depth than and

decreasing in depth from said groove and a removable guide passage mounted on said support and registering with said grooves.

8. A nozzle and guide passage support
5 for steam turbines comprising a plate and a curved groove therein of rectangular cross section and a plurality of grooves inclined thereto of lesser depth than and increasing in depth from said groove and a removable
10 guide passage mounted on said support and registering with said grooves.

9. In a steam turbine a plate and a guide

passage housing removably mounted thereon a guide block within said housing and mounted on said plate so as to form a 15 curved passage of constantly decreasing cross sectional area said plate having a groove beneath said housing of constantly decreasing depth.

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