

No. 896,628.

PATENTED AUG. 18, 1908.

I. L. DAVENPORT.

SPINNING TOP.

APPLICATION FILED MAY 27, 1908.

Fig. 1.

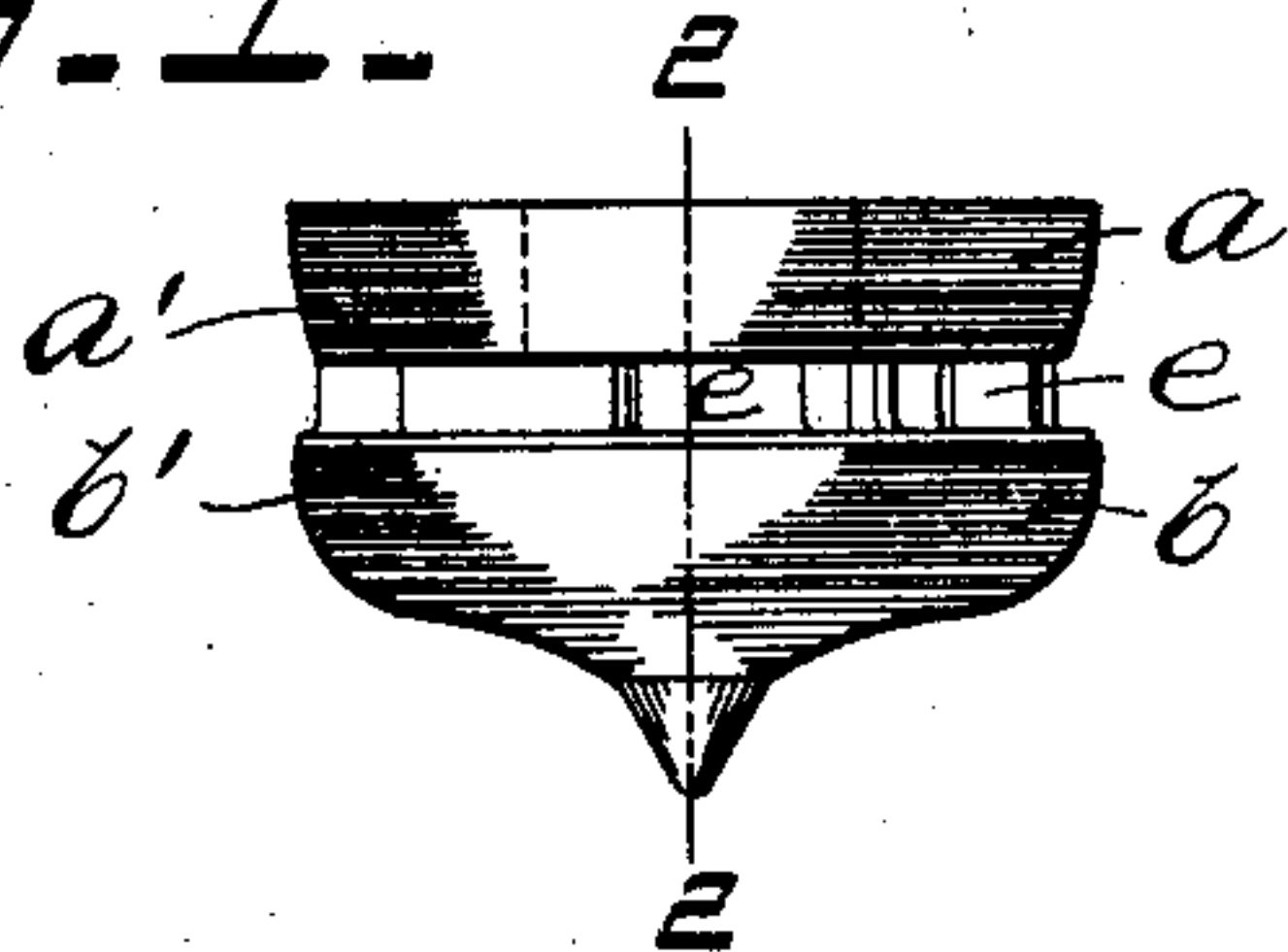


Fig. 2.

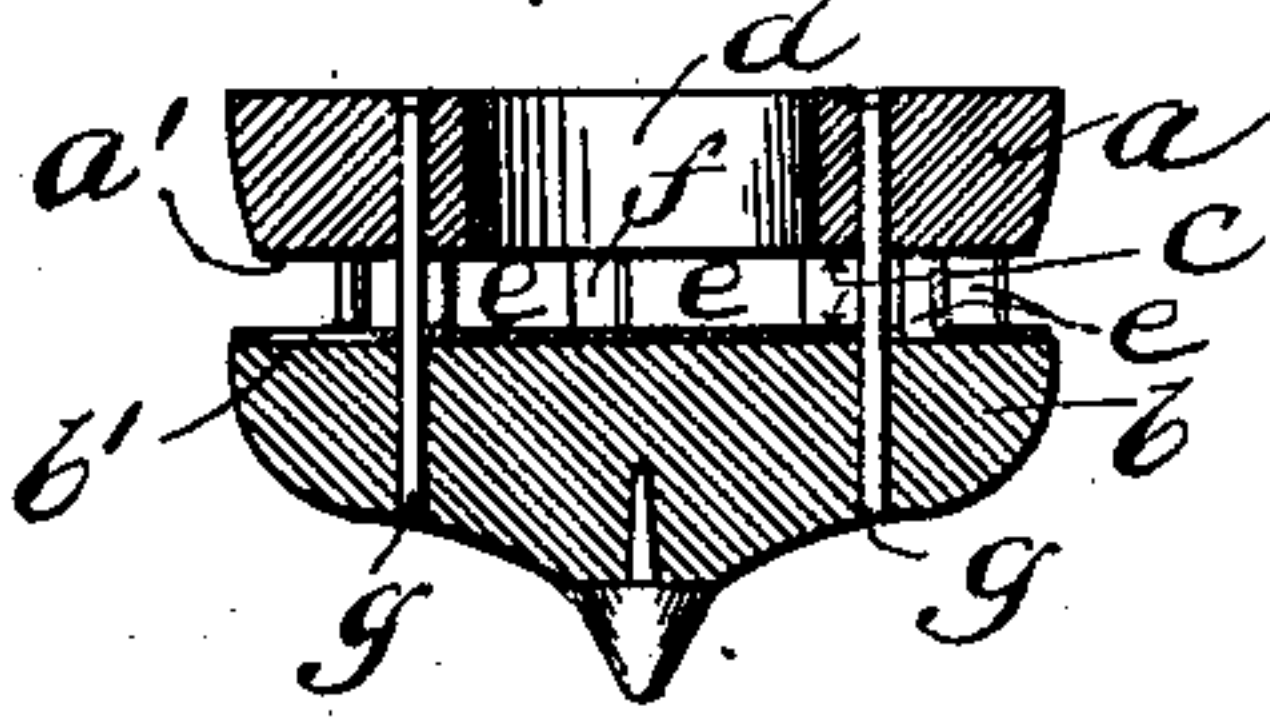


Fig. 3.

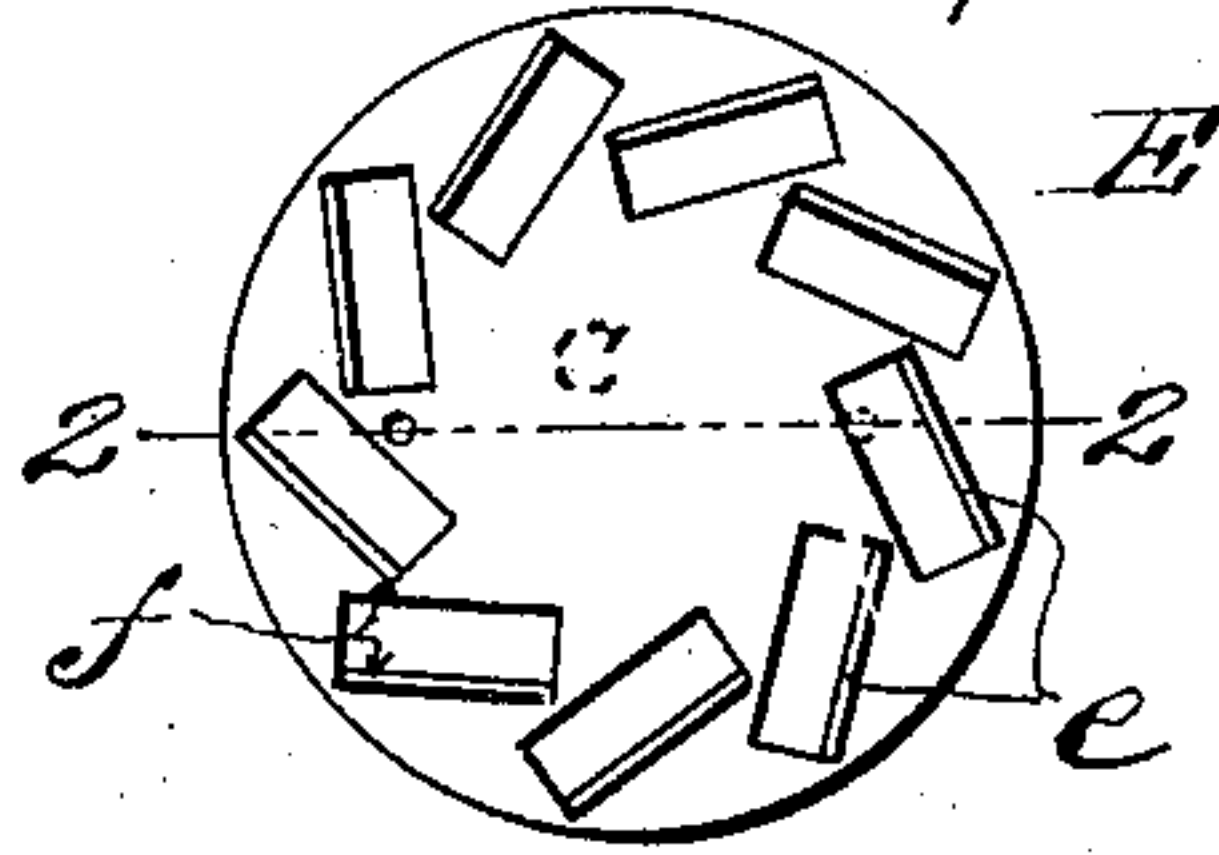


Fig. 4.

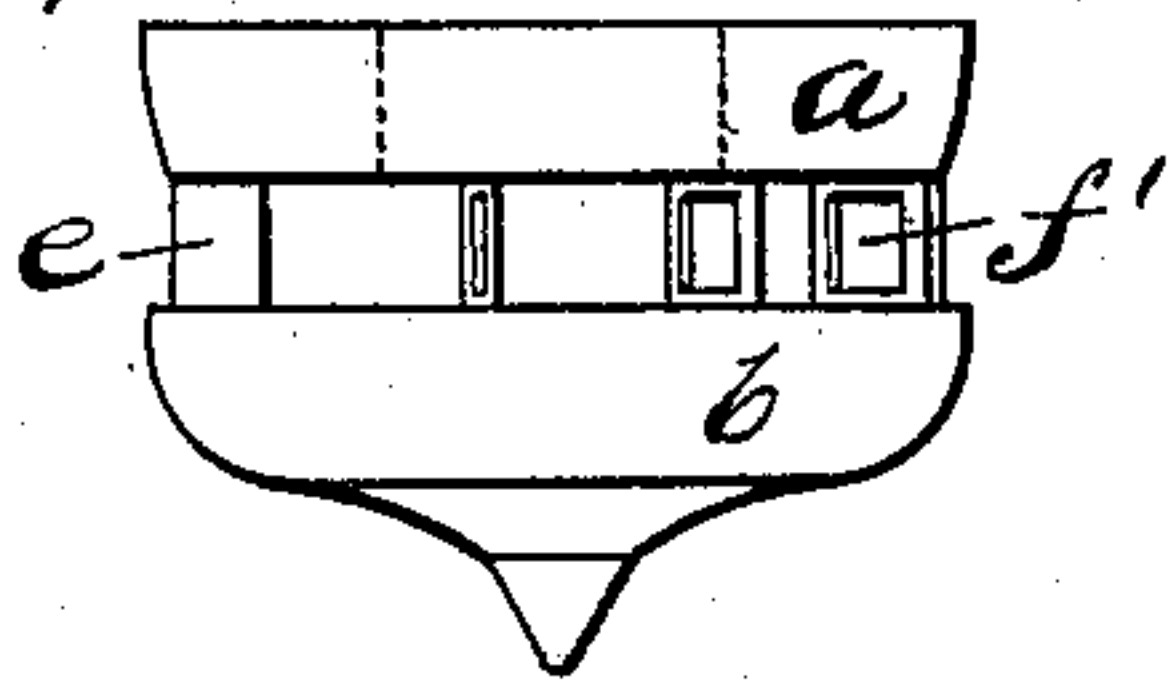


Fig. 5.

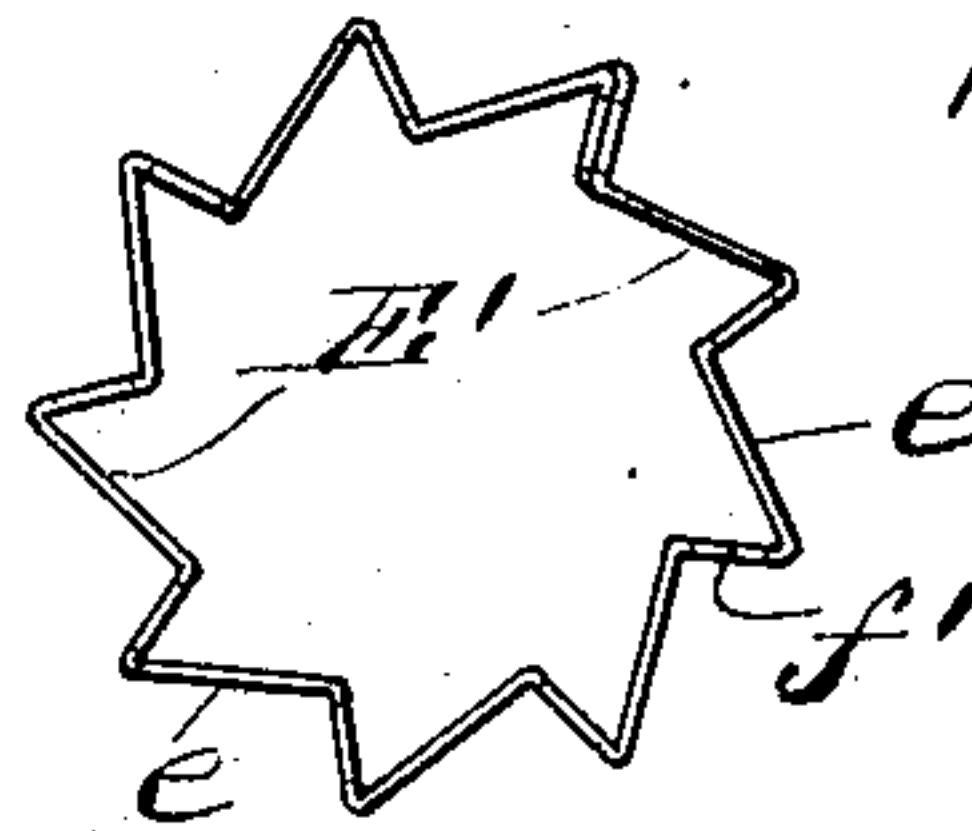


Fig. 6.

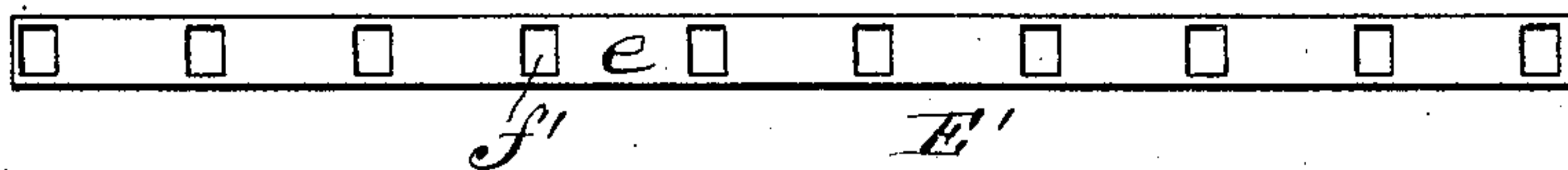
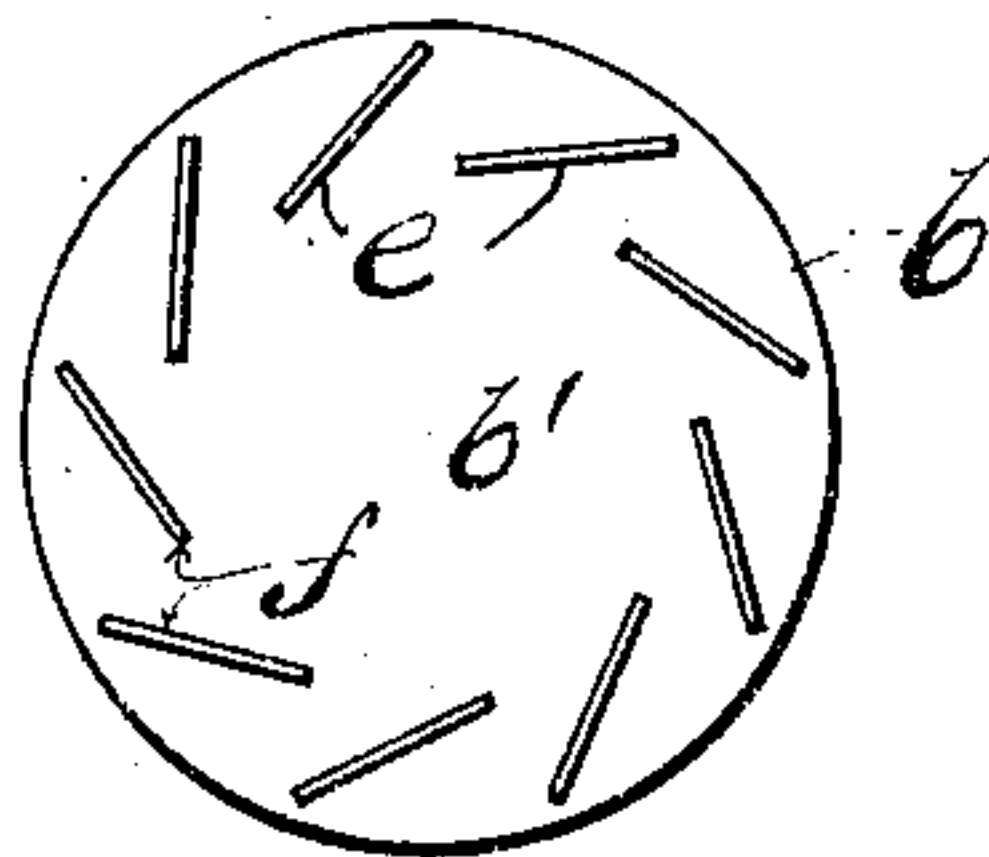


Fig. 7.



Isaac L. Davenport,

Inventor

Witnesses

L. H. Hymann  
D. M. Stewart

By

J. H. Hymann

Attorney

# UNITED STATES PATENT OFFICE.

ISAAC L. DAVENPORT, OF CAMDEN, NEW JERSEY.

## SPINNING-TOP.

No. 896,628.

Specification of Letters Patent.

Patented Aug. 18, 1908.

Application filed May 27, 1908. Serial No. 435,217.

*To all whom it may concern:*

Be it known that I, ISAAC L. DAVENPORT, a citizen of the United States, and a resident of the city and county of Camden and State  
5 of New Jersey, have invented certain new and useful Improvements in Spinning-Tops, of which the following is a specification.

My invention relates to spinning tops of the turbine class, and more particularly to  
10 that type shown and described in Patent No. 791,080, issued to me May 30th, 1905; and my object is to provide an improved and simplified construction as hereafter fully described in connection with the accompanying  
15 drawings, the novel features of which are specifically pointed out in the claims.

Figure 1 is an elevation of a top embodying my invention. Fig. 2 is a vertical section of the same on the line 2—2 of Fig. 1.  
20 Fig. 3 is a separate plan view of the interposed connectedly formed vanes constructed as indicated in Figs. 1 and 2. Fig. 4 is a similar view to Fig. 1 showing interposed connectedly-formed vanes of modified construction; Figs. 5 and 6 being separate views  
25 of the latter before and after bending to required shape. Fig. 7 is a plan view of the lower section of the top indicating another modification.

30 As shown in the drawings the top comprises separately formed upper and lower sections marked *a* and *b* respectively, with interposed vertical vanes *e* spacing apart said sections and forming an intermediate air  
35 space or chamber *c*, which space communicates with a central inlet opening or aperture *d* in the upper section *a*, and with discharge openings *f* between the obliquely arranged vanes *e*; the construction shown being  
40 similar in the main to that of my prior patent referred to, and the operation the same,—the latter requiring merely that a blast of air or the like be delivered through the central aperture *d* in any convenient  
45 manner so as to operate upon the vanes *e* before discharging through the openings *f*, as will be readily understood.

My present invention consists in the improved and simplified construction of the  
50 vanes and manner of rigidly uniting the several parts of the top structure. To this end I provide for interposing the vanes *e* wholly between the opposed horizontal faces *a'* *b'* of the upper and lower sections and securely  
55 and rigidly connecting them to the latter without requiring any peripheral engage-

ment between the parts; and further for a more economical and advantageous vane construction. As shown in Figs. 1, 2 and 3, the circular series of obliquely arranged vanes *e*  
60 are connectedly formed on a circular disk *E* of the same outside diameter as the sections *a* and *b*, by cutting and upturning vertically suitable portions thereof to form said vanes,  
65 as indicated. In assembling the parts this vaned disk is simply placed between the sections *a* and *b*, spacing apart the latter the height of the vanes *e*; and the latter are then rigidly secured in said position, as shown, by  
70 clamping together the sections, preferably by means of sprigs or screws *g g* driven through one section, and the intervening space *c* between the sections, into the other section, so as to tightly draw together the  
75 two sections upon the interposed vanes and unite them all in a rigid structure.

It will be readily understood that the specific construction shown and described may be modified within the spirit and scope of my invention. For instance the interposed  
80 vanes *e* instead of being connectedly formed on a disk *E* as stated, may be formed from a strip of sheet metal such as is indicated in Fig. 5; said strip being readily bent to form a connected circular series of oblique vanes *e*  
85 with discharge openings *f'* between them (Fig. 6), and clamped between the sections *a* and *b* in similar manner to that already described (Fig. 4). Or each of the vanes may  
90 be formed separately, instead of connectedly as in the preferred construction, and suitably set in a circular series upon one of the sections *a* or *b* as indicated in Fig. 7, so as to be readily secured thereto by means of the superposed section.  
95

What I claim is:—

1. In a turbine-top the combination with the centrally apertured upper section and separately formed lower section, of an interposed vaned disk rigidly connected to said  
100 sections.

2. In a turbine-top the combination with the centrally apertured upper section and separately formed lower section, of an interposed sheet-metal disk having upturned  
105 portions forming vanes and rigidly connected to said sections.

3. In a turbine-top the combination with the centrally apertured upper section and separately formed lower section, of a vaned  
110 disk clamped between said sections.

4. In a turbine-top the combination with



the centrally apertured upper section and separately formed lower section, of an interposed vaned disk, and clamping means extending through the space between said sections to unite the parts.

5      5. In a turbine-top the combination with the centrally apertured upper section and separately formed lower section, of a circular series of vertical vanes located between said  
10 sections free of peripheral engagement therewith and rigidly connected thereto.

6. In a turbine-top the combination with the centrally apertured upper section and separately formed lower section, of a circular  
15 series of connectedly formed vertical vanes located between said sections free of peripheral engagement therewith and rigidly connected thereto.

7. In a turbine-top the combination with  
20 the centrally apertured upper section and separately formed lower section, of a circular series of vertical vanes located between said sections free of peripheral engagement therewith and clamping means extending  
25 through the space between said sections to unite the parts.

8. In a turbine-top the combination with the centrally apertured upper section and separately formed lower section, of a circular series of connectedly formed vertical vanes  
30 located between said sections free of peripheral engagement therewith, and clamping means extending through the space between said sections to unite the parts.

9. In a turbine-top the combination with  
35 the centrally apertured upper section and separately formed lower section, of a circular series of vertical vanes clamped between said sections and free of peripheral engagement therewith.

10. In a turbine-top the combination with the centrally apertured upper section and separately formed lower section, of a circular series of connectedly formed vertical  
40 vanes clamped between said sections and free  
45 of peripheral engagement therewith.

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

ISAAC L. DAVENPORT.

Witnesses:

M. J. HOPKE,

WM. RANDALL.