

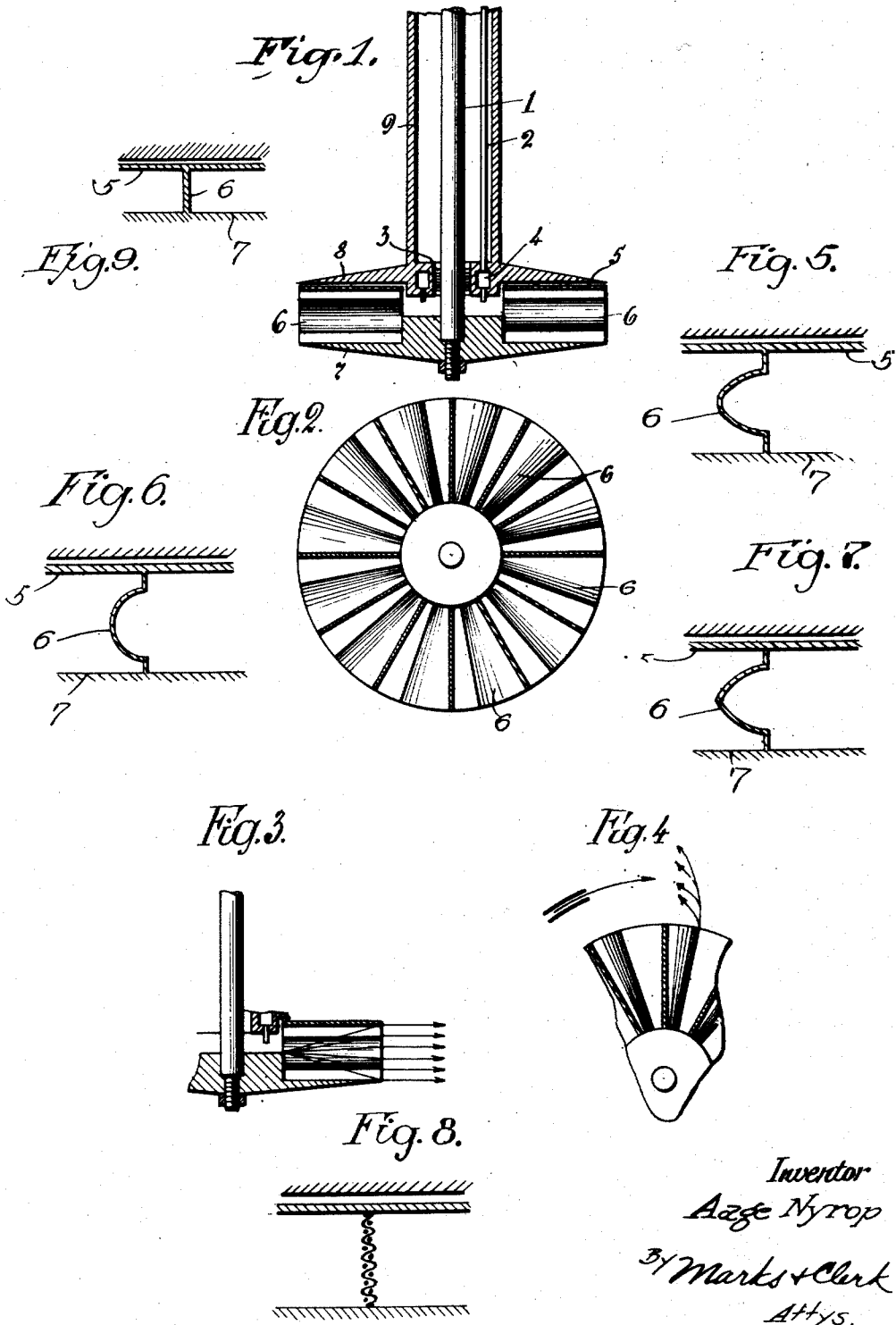
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ATOMIZER

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UNITED STATES PATENT OFFICE.

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ATOMIZER.

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For all reactions between gases and liquids a large contact surface between the gas and the liquid is necessary. Such large surface is frequently produced by atomization.

5 The present invention refers to an atomizer which, without any essential consumption of power, will atomize liquids, emulsions, dis-
persions, solutions and the like, and this so
10 finely that the surface becomes enormously great so that the physical or chemical re-
actions or both aimed at, such as the genera-
tion of steam, evaporation, moistening of air,
condensation, drying, emulsification and the
like will proceed with great rapidity.

15 The invention is based on the fact that a liquid will spread on a rapidly revolving sur-
face and such liquid will leave in the form of
a film or several films which thereupon will
be diffused by the air surrounding the rev-
20 olving surface, while this air is either sta-
tionary or travelling at a velocity which is
different from that of the said surface.

In the accompanying drawing a construc-
25 tional form of an atomizer according to the
present invention is shown by way of ex-
ample.

Fig. 1 is a vertical longitudinal section
through an atomizer.

30 Fig. 2 is a horizontal section through the
atomizer.

Fig. 3 is a vertical longitudinal section
showing a vane in detail and the spreading
of the material over the same.

35 Fig. 4 is a top view of a section of the sur-
face of the vane with arrows indicating the
fanlike spreading of the material.

Figs. 5, 6, 7, 8 and 9 represent sectional
views of various forms of vanes taken on the
line A—B of Fig. 1.

40 An atomizer may, for example, be con-
structed in the following manner, see Fig. 1.
On the top of a rapidly revolving disc 7—
which is suspended on the thin shaft 1 guided
in the bearing 3—are fitted either perforated
45 vanes 6' of wire netting (Fig. 8) or imper-
forate vanes 6 which may take the form shown
in Figs. 5, 6, 7 or 9. The upper edges of these
are covered with a plate 5 and a stationary
plate 8 which prevents the revolving vanes
50 from sucking air, which otherwise would con-
siderably increase the consumption of power.
The liquid is supplied to the vanes through

the pipe 2 and the distributing case 4.

The tubular support 9 is arranged about
the shaft 1 and pipe 2 and carries and sup- 55
ports the stationary plate 8 in addition to
serving to protect the shaft 1 and pipe 2.

In connection with the plate 8 it should
be observed that the same prevents a current
of air from being sucked into the chamber be- 60
low the nozzles leading from the distribut-
ing case 4 and thereby prevents powdered
material emanating from the vanes 6 from
clogging between the tube 9 and the plate 5
as it would be when entrained by the said 65
current of air.

A specially characteristic feature of the
atomizer is the shape of the vanes which can
be made convex, plane or concave towards
the one side which is overspread with the 70
liquid (Figs. 3 and 4), that is to say the front
side of the vanes with reference to their di-
rection of rotation, as it is intended that the
liquid should spread out thinly over the whole
vane while it travels along over it. 75

In Fig. 3 a certain way of the spreading
over a vane is shown, and in Fig. 4 is shown
the fanlike form in which the material will
leave the vanes.

Having now described my invention, what 80
I claim as new and desire to secure by Let-
ters Patent is:—

1. An atomizer consisting of a rapidly rev-
olving disc having the outer portion of the
upper surface cut away to leave an annular 85
supporting surface, a plurality of vanes car-
ried on the annular supporting surface and
arranged radially thereof and in spaced rela-
tion with each other, an annular plate con-
nected with the upper edges of the vanes, a 90
stationary disc arranged in spaced relation
to the revolving disc and in close relation to
the plate on the vanes for preventing the air
surrounding the vanes from being drawn
along by the revolution thereof, and means 95
mounted in the stationary disc for supplying
material to be atomized to the space between
the discs, substantially as and for the pur-
poses set forth.

2. An atomizer as claimed in claim 1, 100
wherein the vanes are perforated, substan-
tially as and for the purposes set forth.

In testimony whereof I affix my signature.
AAGE NYROP.