APPARATUS, 
INCLUDING A LARGE VENTURI PASSAGE CARRIED 
BY AN AERIAL DEVICE FOR IMPULSING MOISTURE 
LADEN ATMOSPHERE AT HIGH VELOCITY, THERE 
TO PRODUCE A LARGE VOLUME SEEDING AREA 
FOR INDUCING ATMOSPHERIC PRECIPITATION. 
 SUPPORTING CONTACTS FOR THE ARTIFICIAL 
COOLING OF THE IMPELLER ATMOSPHERE AND FOR 
THE INJECTION THEREIN OF CATACTIZATION 
INDUCING PARTICLES IS PROVIDED.

This invention comprises a device and process for 
producing rain.

In the present invention a large venturi passage 
carried 
by an aerial device such as a dirigible, 
conventional 
airplane, or lighter than air balloon has moisture-laden 
atmosphere impelled at high velocity through its length.

Condensation is precipitated in the passing air by 
temporary reduction in pressure and temperature 
occuring at and after the constriction of the passage. 
Further, 
proximate to the constriction of the venturi, artificial 
cooling means of relatively high intensity injected into 
the large volumes of passing atmosphere creates a 
substantial temperature reduction below ambient. 
Additionally, a plurality of catalytic condensation inducing 
particles, such as Dry Ice, silver iodide crystals, 
electrically charged sand particles and the like, are injected into the 
passing atmosphere. The atmosphere, excited as described, 
and discharged from the venturi, accumulates or 
aggregates in a large volume seeding area which is capable 
of inducing precipitation in surrounding untreated 
atmosphere more efficiently and effectively than heretofore 
known.

The object of this invention is to emulate nature in 
producing rainfall by reducing atmospheric pressure 
and temperature below ambient and thus to detract from the 
affinity of said atmosphere for its contained moisture.

A further object is to utilize a device and process 
which induces precipitation in clouds of low moisture 
content which herefore have been unaffected by 
rain-making machines.

An advantage of this invention is that the condensation 
inducing phenomena of a venturi acting on large volumes 
of passing air can be used in combination with venturi 
passage 15 defining opening 17 at one extremity, 
medially located constriction 18 and exhaust 26 at the other extremity. 
Venturi passage A is shown concentric and circular in converging area 22 
and diverging area 23. Fluid coolant 25 is entered proximate 
to constriction 18. Coolant 25 is stored in a liquefied 
state in container 27 and expanded through valve 28 in the interior of venturi A. Between constriction 18 and 
injector 30, catalyst 32, capable of inducing a plurality of condensation-inducing catalytic particles 32 
in passage A, is located. The catalytic particles used may 
include Dry Ice, electrically charged sand particles, silver 
iodide crystals and the like.

In operation, venturi passage A is rapidly moved 
through moisture-laden atmosphere in the direction of 
movement arrow 37. The atmosphere is confined by 
opening 17 and moved in the interior of the venturi 
in the direction of flow arrows 40, 41 and 42. The atmosphere 
is accelerated relative to the passage by converging 
area 22 and reaches a maximum velocity in the confines 
of constriction 18 as indicated by elongate flow arrow 41. 
The atmosphere then traverses the remainder of 
venturi-shaped passage A, decelerating in diverging area 
23. The rapid flow of the atmosphere in the area of 
constriction 18, temporarily reduces the atmospheric pressure 
in accordance with Bernoulli's principle. This pressure 
reduction and its corresponding reduction in temperature 
reduces the affinity of the atmosphere for its contained 
moisture and droplets of water or ice form.

In addition to the aforementioned pressure and 
temperature reduction, coolant 25 further cools precipitation 
in the confined atmosphere. Coolant 25 originally in 
its liquefied form in container 27 is introduced proximate 
to constriction 18 by valve 28. After passage 28, 
coolant 25 rapidly expands, drops in temperature 
and intermixes with the passing atmosphere in 
diverging area 23. This intermixure lowers the temperature of the 
elevated atmosphere, further decreasing the affinity of 
the atmosphere for its contained moisture.

Condensation-inducing catalytic particles 32 
are further 
the affinity of the atmosphere for its 
containing moisture when added in diverging area 23. 
Catalytic 
particles 32 are placed in the passing atmosphere 
by catalyst 
injector 30 and commence their action upon the 
atmosphere still in venturi passage A. This greatly 
multiplies the catalytic effect of the particles and induces 
precipitation in larger amounts.

As can readily be observed from the foregoing 
description, the atmosphere need only be treated to the 
extent necessary to induce rain. If the balance of moisture 
suspended in the air is so delicate that the mere 
flow of atmospheric flow through venturi passage A is 
all that is 
required to induce precipitation, no liquid gases or silver 
iodide 
are needed. However, in the atmosphere, where large 
volume passages through the atmosphere, venturi 

can be used in combination with catalytic 
particles 32 for increased efficiency.

In the preferred embodiment, the invention 
comprises a venturi having a large 
volume seeding area and a large volume 
seeding area. The venturi is shown in Fig. 1.

FIG. 1 is a schematic diagram of the principal embodi 
ment of the invention. The venturi is shown together 
with the airlock 15 defining opening 17 at one extremity, 
medially located constriction 18 and exhaust 26 at the other extremity. 
Venturi passage A is shown in section at a magnification of four times the 
diameter of cylindrical airlock 15. Although not shown in detail, 
the venturi may be made in the above described 
dimensions without departing from the spirit and