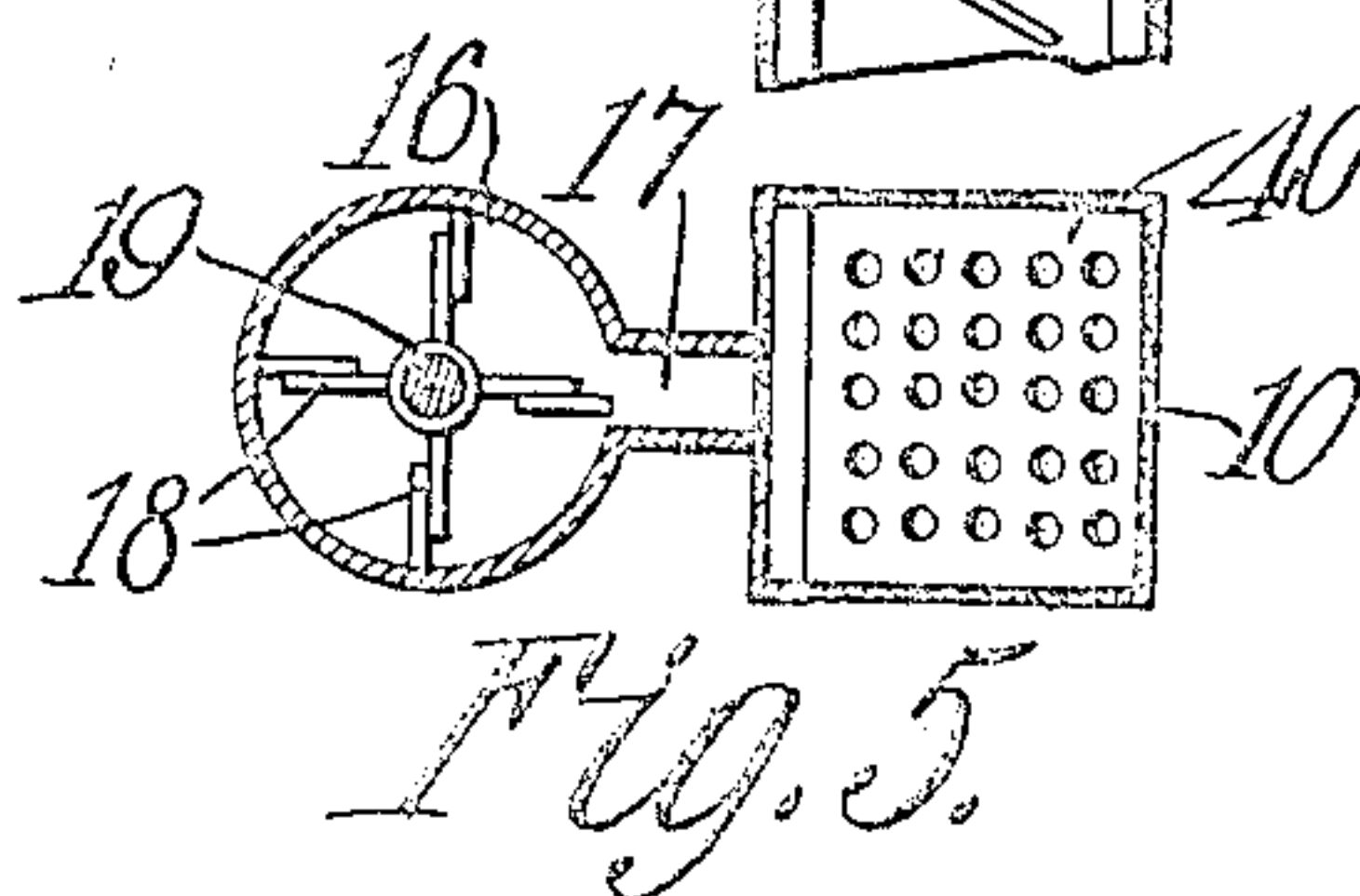
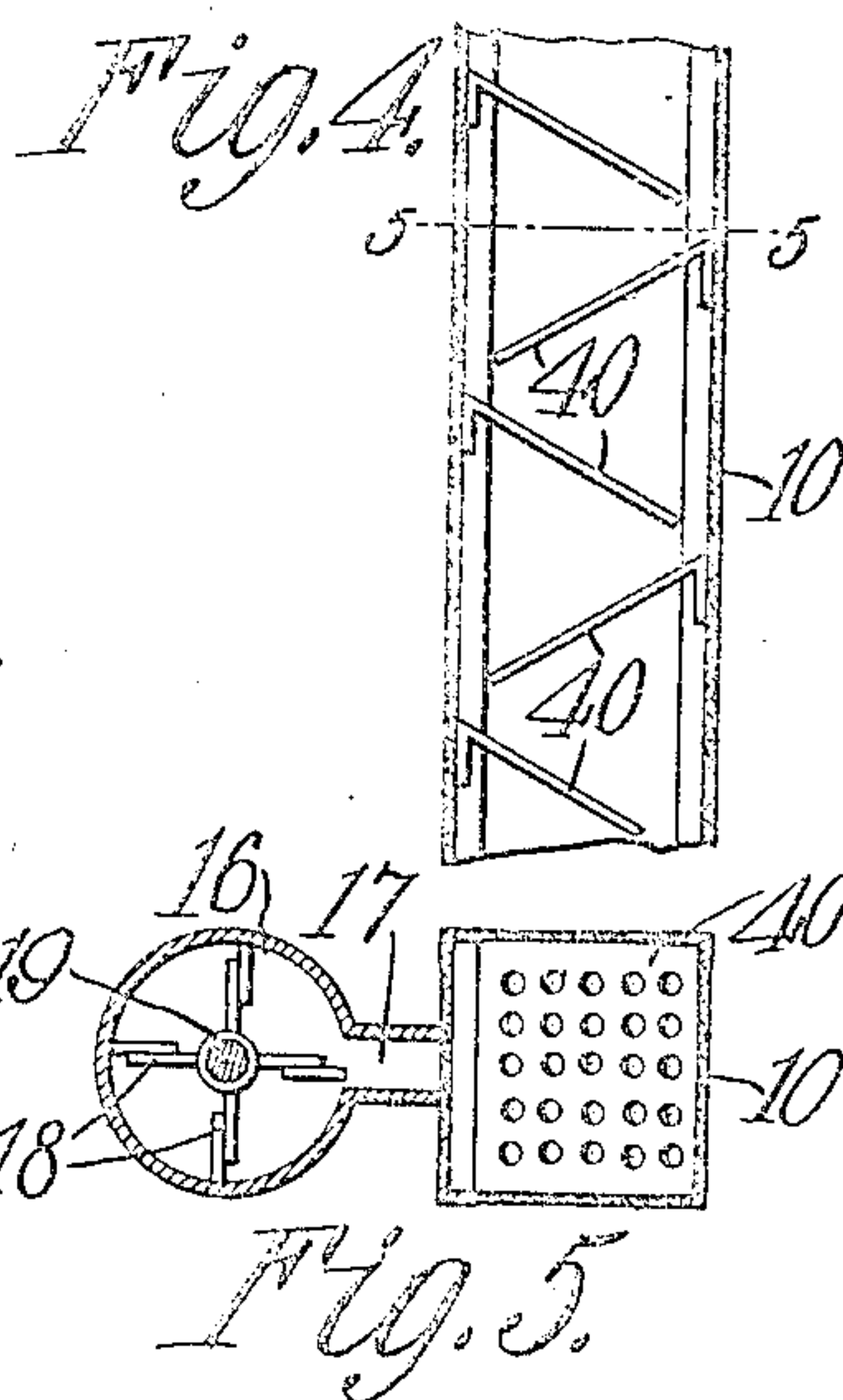
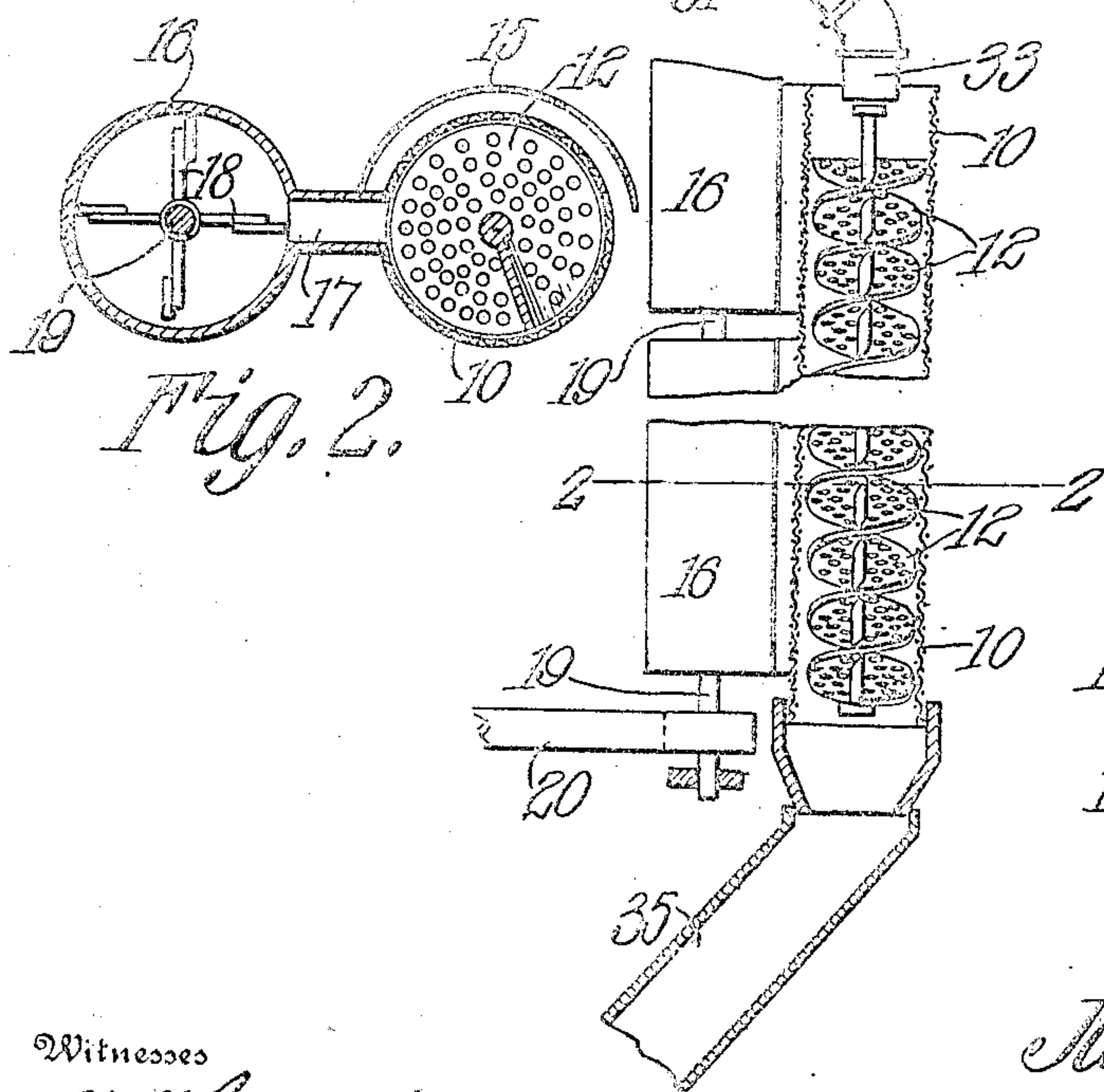
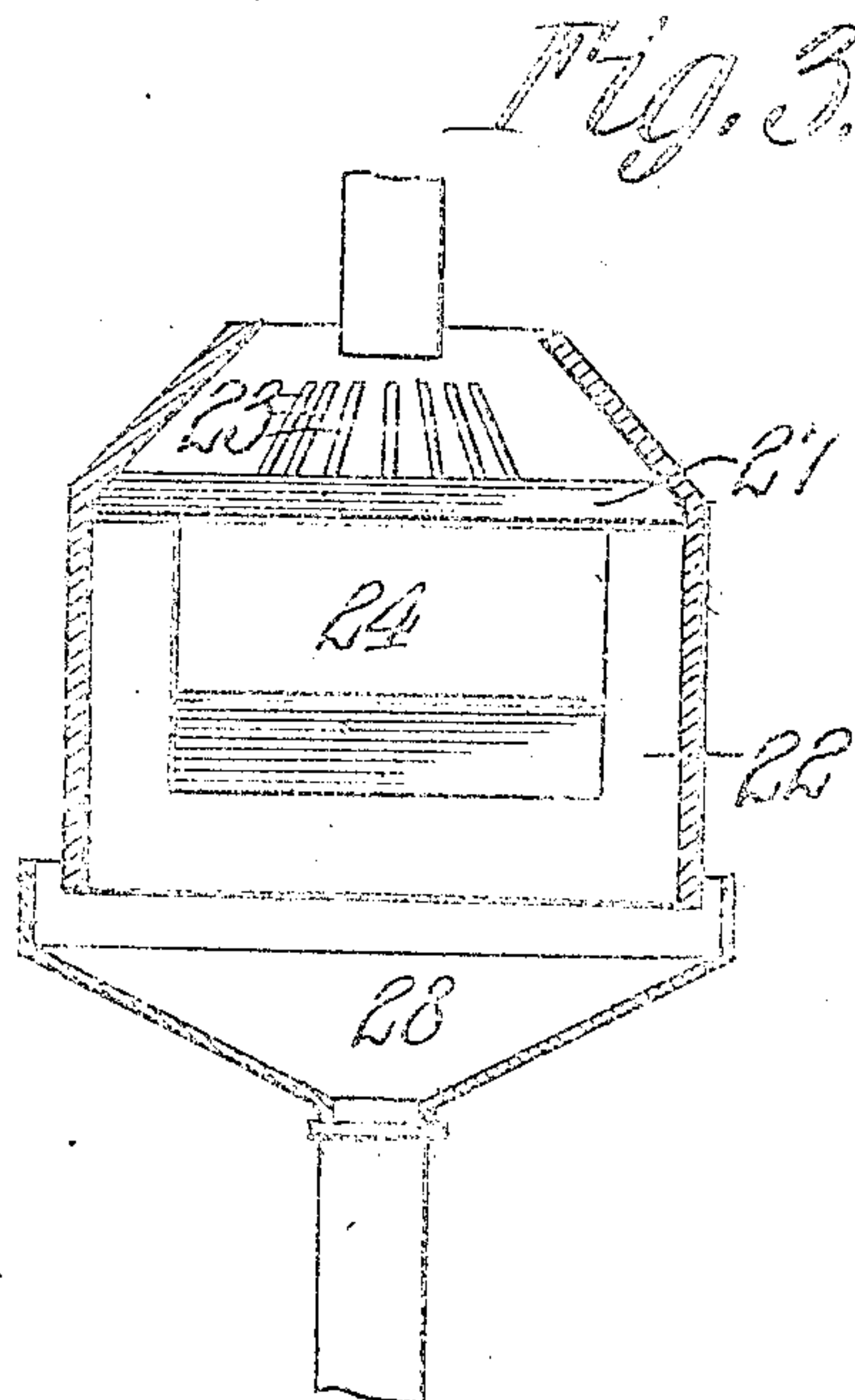
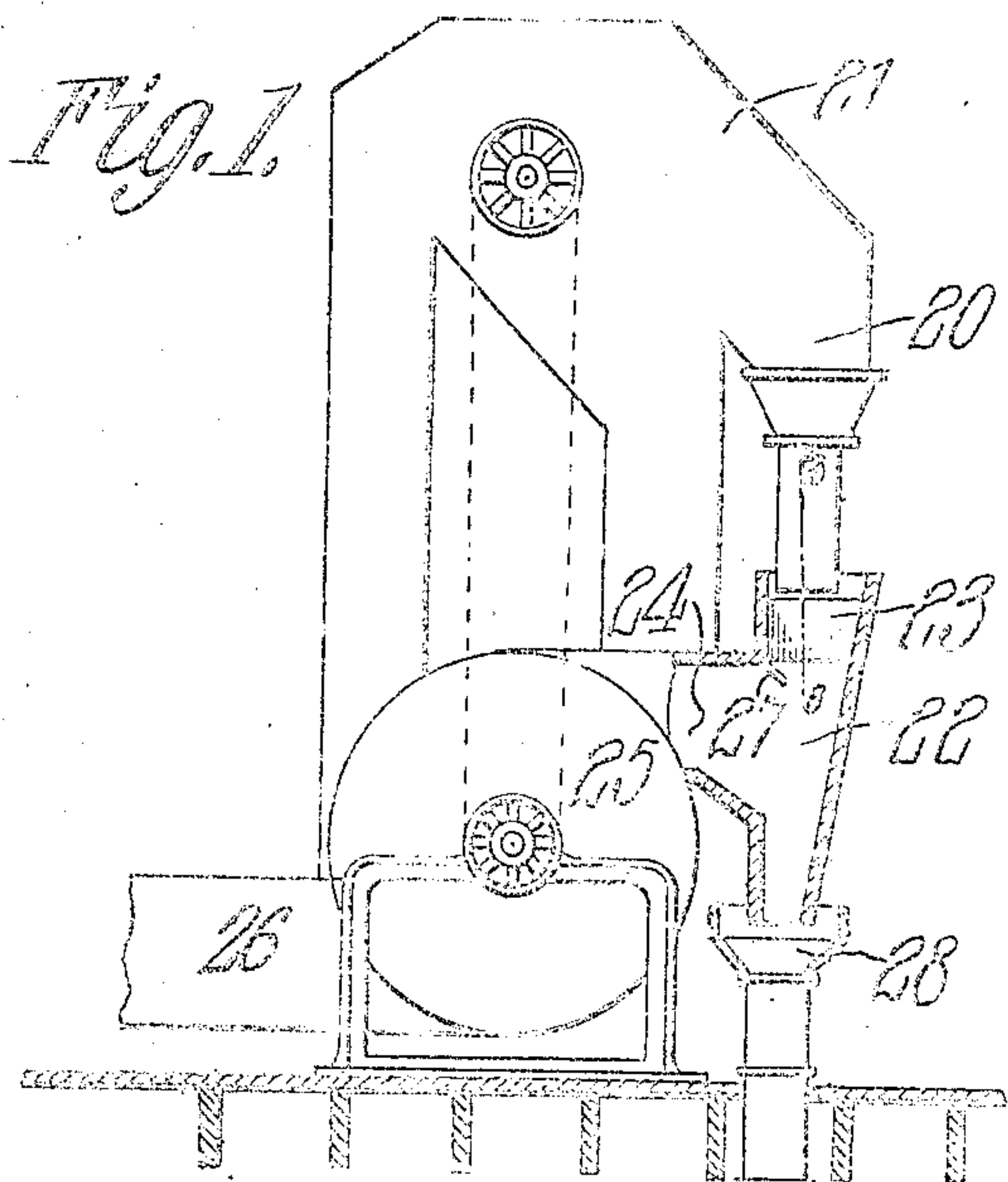


No. 892,502.

PATENTED JULY 7, 1908.

J. S. COON.  
GRAIN CLEANER AND DRIER.  
APPLICATION FILED JULY 20, 1907.



Witnesses  
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By

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# UNITED STATES PATENT OFFICE.

JAMES SAMUEL COON, OF RANTOUL, ILLINOIS.

## GRAIN CLEANER AND DRIER.

No. 892,502.

Specification of Letters Patent.

Patented July 7, 1908.

Application filed July 29, 1907. Serial No. 386,040.

*To all whom it may concern:*

Be it known that I, JAMES SAMUEL COON, a citizen of the United States, residing at Rantoul, in the county of Champaign and State of Illinois, have invented a new and useful Grain Cleaner and Drier, of which the following is a specification.

This invention relates to grain cleaners and driers, and has for its principal object to provide a simple and economical construction whereby corn and other grain may be thoroughly dried and cleaned without the employment of expensive machinery.

A further object of the invention is to provide a cleaning and drying means which may be readily attached to an elevator or other building where grain is stored and used for the purpose of cleaning and drying the grain as the latter is delivered to cars or other points.

A still further object of the invention is to provide a cleaner and drier that may be placed outside the building in order not to occupy valuable room, and at the same time to expose the grain to the action of light and air.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a vertical section of a grain cleaner and drier constructed and arranged in accordance with the invention. Fig. 2 is a sectional plan view of the same on the line 2—2 of Fig. 1, the view being on an enlarged scale. Fig. 3 is a vertical section of the distributing hopper on the line 3—3 of Fig. 1. Fig. 4 is a vertical section showing a modification of the drying cylinder. Fig. 5 is a sectional plan view of the same.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

Arranged outside the elevator or other

building is a vertically disposed screen 10 which preferably extends for the full height of the building and which may be supported at intervals by brackets or other carriers. Extending centrally through this cylinder is a stationary shaft or spindle on which is mounted a helically wound metallic sheet extending from the spindle to the inner wall of the cylinder and provided with numerous perforations to permit the free circulation of air.

The cylinder is arranged outside the building, so that it may be exposed to the action of sun and air, and to the rear of the cylinder is a reflector 15 of concaved form in cross section and mounted on collars so that it may be swung from side to side for the purpose of reflecting sun rays on to the cylinder.

Arranged at the rear of the cylinder is a series of superposed fan casings 16 of cylindrical form and which communicate with the cylinder through vertically disposed passages 17 that are practically continuous in length, and through which currents of air are forced by fans 18 that are carried by a shaft 19 disposed at the center of the cylinders 16. The shaft is continuous and carries the entire series of fans, while at its lower end is secured a pulley which may be driven by a belt 20 from any suitable source of power.

Arranged in the upper portion of the building below the distributing spout 20 of an elevator head 21 is a hopper shaped casing 22 in the upper portion of which are arranged a plurality of spreading or deflecting plates which serve to divide and spread the stream of grain, so that it will fall in a comparatively thin stream for the full width of the casing. Leading from this casing is the induction tube 24 of a suction fan 25 having an outlet 26 that leads to the dust house, and at the juncture of the upper wall of the induction tube with the casing is a deflector plate 27 which serves to prevent the passage of grain into the fan.

The stream of grain falls from the bottom of the casing into a collecting hopper 28, the top of which is open, so that air will be drawn down through the top of the hopper and up through the bottom of the casing, passing through the stream of falling grain and serving to dry the grain, and at the



same time to carry away dust, silks, husks, chaff and other foreign material, this material passing through the induction tube of the device and thence through the fan and tube 26 to the dust house.

Leading from the hopper 28 is an inclined chute 31 having a solid bottom and provided with a foraminous top or cover 32. The grain passes through this chute to a point outside the building and through a vertical pipe 33 from whence it is delivered into the upper portion of the cylinder 10, the grain flowing down through the helical chute within the cylinder.

The grain slides slowly down and around the helical chute, and will be agitated in such manner that all portions will be exposed to the action of sun and air, so that by the time the grain reaches the bottom or delivery chute 35, it will be thoroughly cleaned and dried and its value materially increased.

It will be seen that the cleaner and drier needs practically no machinery, the only operating part being the fan or blower which is actuated from the elevator, and the fan which is placed at the side of the vertical cylinder outside the building. The device furthermore being arranged outside the building will not occupy valuable storage space.

It is obvious that the drying cylinder may be made of rectangular form in cross section, as shown in Fig. 4, and provided with shelves arranged alternately in opposite directions, so that the grain will flow from shelf to

shelf, and thus be subjected to the action of the air and sunlight.

I claim:—

1. In apparatus of the class described, an approximately vertical foraminous screen, a spindle extending centrally therethrough, a perforated spiral plate carried by the spindle and forming a helical chute for the grain, and a reflector arranged outside the cylinder for the purpose of reflecting sun rays on to said cylinder.

2. In apparatus of the class described, an approximately vertical cylindrical casing, a spindle extending therethrough, a perforated spiral blade carried by the spindle and forming a helical chute for the grain, and an adjustable transversely concaved reflector arranged outside said casing.

3. In apparatus of the class described, an approximately vertical cylindrical screen drum, a helical chute arranged therein, a series of superposed fan casings arranged parallel with the drum and connected thereto by practically continuous passages, fans arranged within said casing, and a single drive shaft carrying all of said fans.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses,

JAMES SAMUEL COON.

Witnesses:

E. G. COON,  
J. B. PITMAN.