No. 690,789. Patented Jan. 7, 1902.

V. STOLTZ.

DRAFT GENERATOR FOR THRESHING MACHINE ENGINES.

(Application filed Aug. 1, 1899.)

(No Model.)

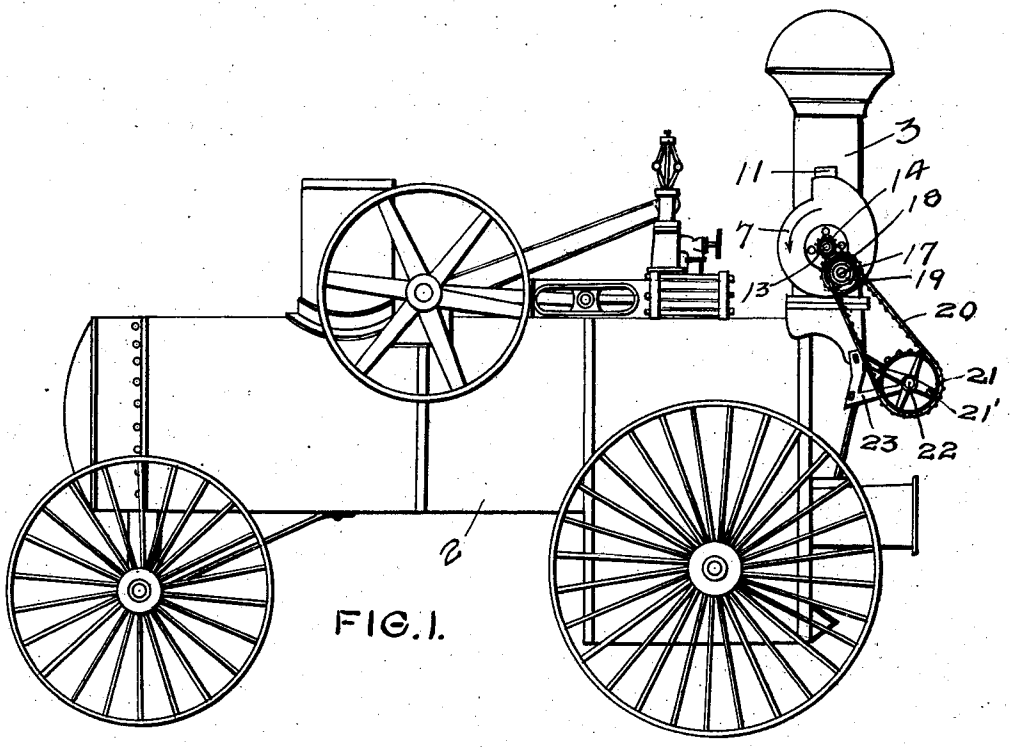

FIG. 1.

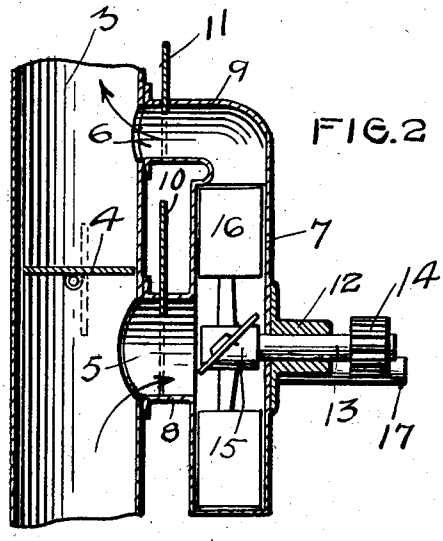

FIG. 2.

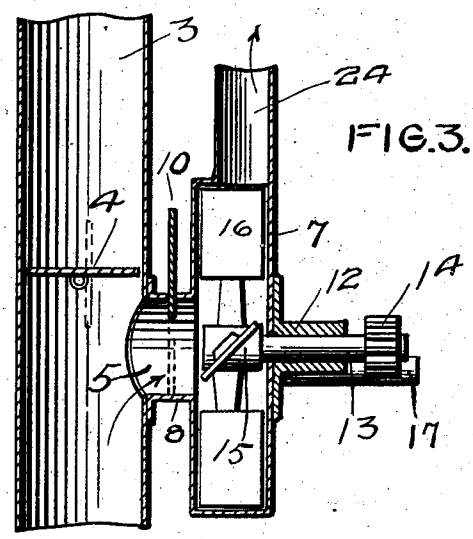

FIG. 3.

WITNESSES.

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VALENTINE STOLTZ, OF MONTROSE, MINNESOTA.

DRAFT-GENERATOR FOR THRESHING-MACHINE ENGINES.

SPECIFICATION forming part of Letters Patent No. 690,789, dated January 7, 1902.

Application filed August 1, 1899. Serial No. 725,733. (No model.)

To all whom it may concern:

Be it known that I, VALENTINE STOLTZ, of Montrose, county of Wright, State of Minnesota, have invented certain new and useful Improvements in Draft-Generators for Threshing-Machine Engines, of which the following is a specification.

The invention relates to attachments for boilers, and is designed particularly for use in connection with threshing-machine engines in which straw that is usually used for fuel is frequently wet, and consequently slow-burning, and requiring a long time for the generation of steam.

The object of the invention is to provide means whereby the fireman or other operator may quickly produce a strong draft or suction in the smoke-stack of the boiler when the fire is first lighted, thereby causing a quicker combustion of the fuel and a great saving of time in the generation of steam.

The invention consists in the construction and arrangement of parts hereinafter particularly described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a threshing-machine engine with my invention attached thereto. Fig. 2 is a section of a portion of the stack and the fan-casing. Fig. 3 is a similar view showing a modified construction.

In the drawings, 2 represents a threshing-machine engine of the ordinary construction having a stack 3, wherein is preferably arranged a valve or damper 4. Below said valve in the wall of the stack is a large opening 5 and above a smaller opening 6. 7 is the fan-casing, having near its center a short pipe 8, fitting within said opening 5, and a smaller pipe 9, fitting within the opening 6. Both these pipes are provided with valves or gates 10 and 11, by means of which the passage-way to the fan-casing may be effectually shut off. On one side of the fan-casing 7 is a hub 12, wherein a short shaft 13 is journaled, having at its outer end a pinion 14 and at its inner end a head 15, to which the blades 16 are secured, said blades being preferably arranged at an incline or angle to said head, as shown in Fig. 2, whereby a suction is created to draw the smoke from the stack into the fan-casing. Below the shaft 13 on the side of the fan-casing is a stud 17, having near its outer end a gear 18, meshing with the pinion 14 and provided on one side with a sprocket 19, over which a chain 20 passes to a larger sprocket 21, having a handle 21′ and secured on a shaft 22, supported in bearings in a bracket 23, secured to the frame of the boiler near the base of the smoke-stack and within easy reach of the fireman or other operator.

In Fig. 3 I have shown a slightly-modified construction, which consists in providing an outlet or discharge pipe 24, leading directly from the fan-casing to the open air instead of back into the smoke-stack.

The operation of my improved generator is as follows: The fire having been started in the boiler, straw usually being used as fuel, the operator grasps the handle 21′ and rapidly revolves the fan, creating a suction or draft up through the stack, which will draw the smoke out through the large opening 8 into the fan-casing and discharge it back into the stack through the opening 6, and at the same time, if preferred, the direct opening through the stack itself may be closed by the valve or damper 4. This operation is continued until a sufficient quantity of steam is generated to start the blower that discharges into the stack and produces the forced draft while the machine is in full operation. As soon as steam has been generated the fan may be shut off from communication with the interior of the stack by means of the valves 10 and 11. I regard the relative arrangement of the fan-casing and stack as one of the most essential features of my invention, for after steam is generated and the blower and exhaust are connected with the smoke-stack the operation of the fan may be discontinued and it will in no wise interfere with the passage of the steam from the exhaust and blower through the stack or be damaged by the smoke and flames that frequently shoot up to the top of the stack when the machine is in full operation.

I am aware that fans have been arranged within smoke-pipes to create a draft therein and that suction-pipes have been placed within the stacks of threshing-machine engines for the same purpose; but suction-pipes have not proved successful, owing to the fact that

they do not create a sufficient draft to accomplish the purpose designed, and a fan arranged directly within the draft-pipe will soon become damaged by steam from the exhaust and blower, as well as impede the escape of such steam through the stack and interfere with the smoke and flames from the burning straw.

I am aware that various details of my invention may be modified considerably by any one skilled in this art, and I therefore do not wish to be confined to the particular construction herein shown and described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with the smoke-stack having openings in its walls and a damper between said openings, of the fan-casing located outside of the smoke-stack, the two pipes projecting laterally from the smoke-stack one above the other and communicating with both the stack and fan-casing, the lower pipe being of greater capacity than the upper pipe, and a valve located in each pipe intermediate of the connection of the pipe with the fan-casing and the smoke-stack, substantially as described.

2. The combination with the smoke-stack having an opening in its wall, of the fan-casing located outside of the stack, the pipes one above the other and connecting the casing with the stack through said openings, the lower pipe being of greater capacity than the upper pipe, the fan-shaft and its blades in the casing, the axis of the shaft lying opposite to the lower opening in the smoke-stack, said shaft being supported entirely from the far side of the fan-casing opposite to the opening in the wall of the stack, and valves located in the two pipes connecting the casing and stack, substantially as described.

In witness whereof I have hereunto set my hand this 27th day of July, 1899.

VALENTINE STOLTZ.

In presence of—
FRED. H. KRAUS,
J. D. STOLTZ.