(No Model.)

J. JONES.

STEAM BLOWER.

No. 486,162. Patented Nov. 15, 1892.

Fig. 1.

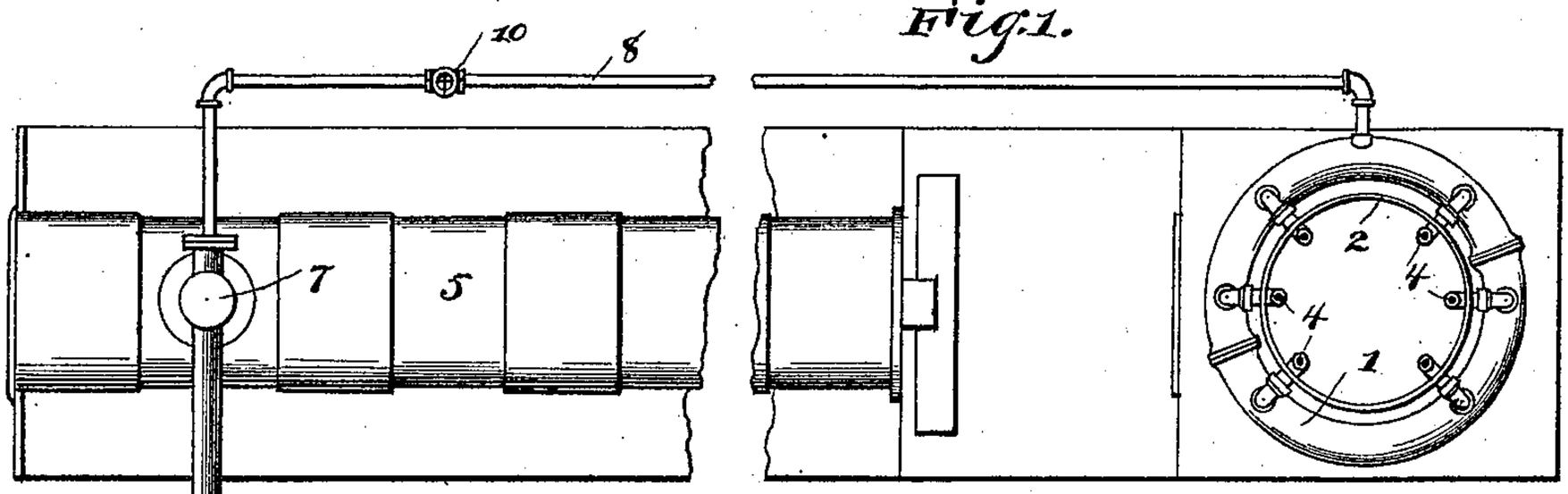


Fig. 2.

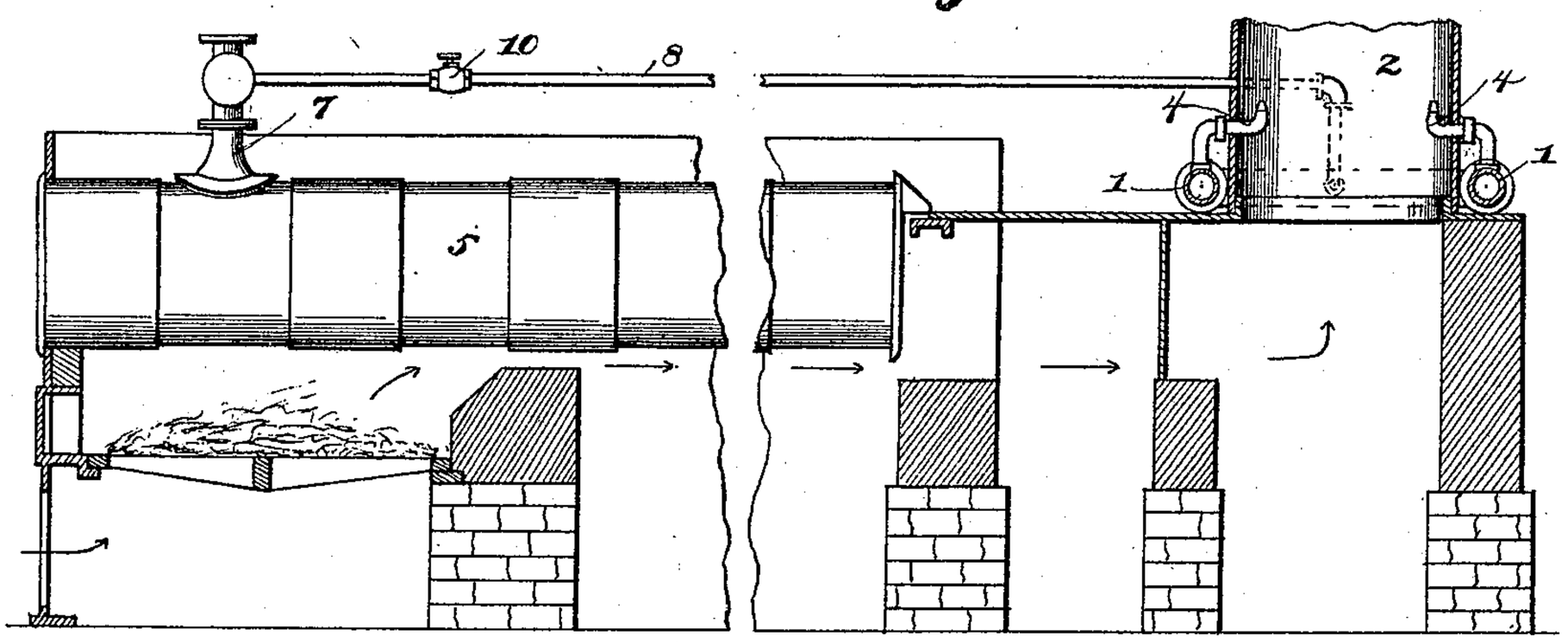


Fig. 3.

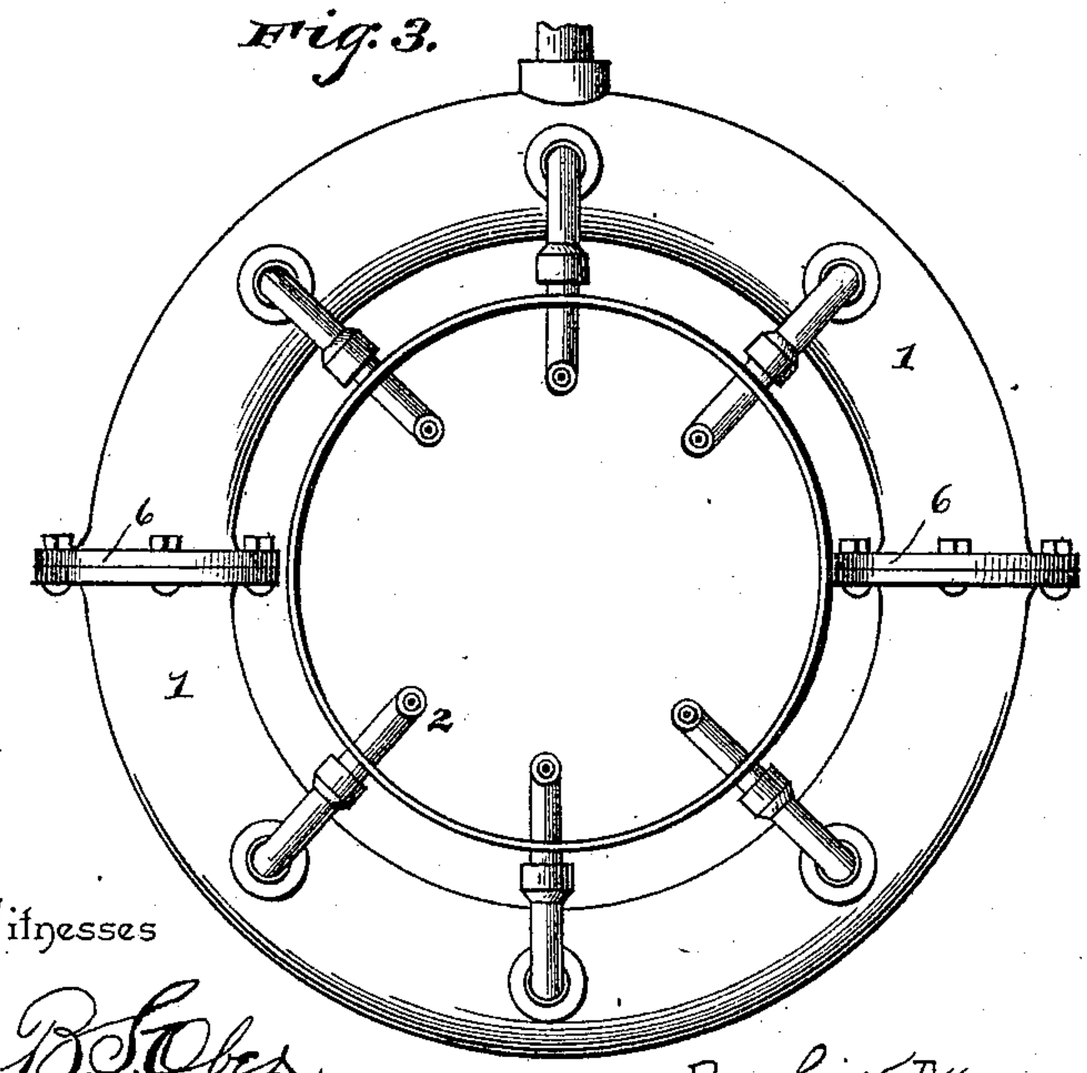
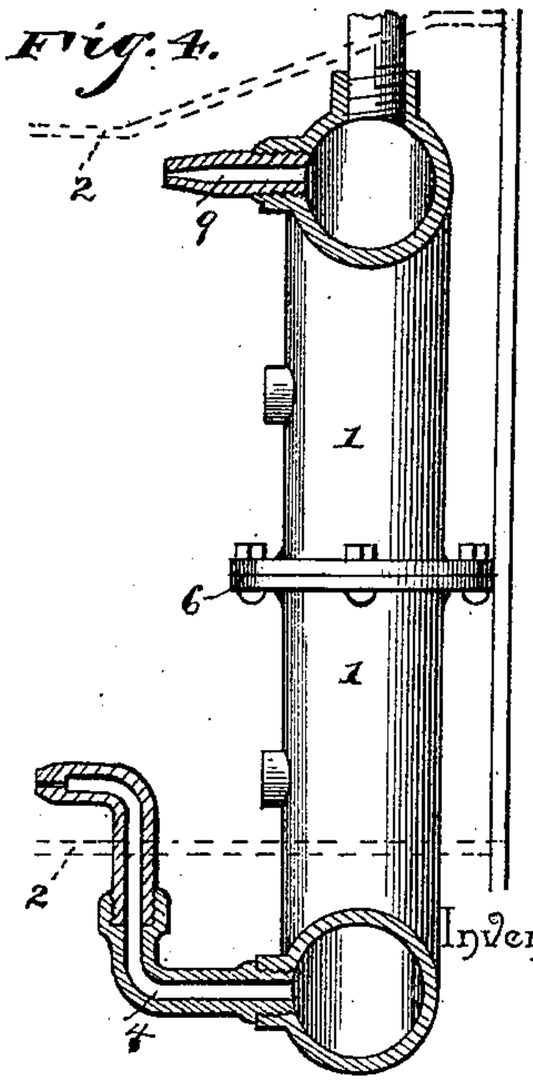


Fig. 4.



Witnesses

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By his Attorneys,

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UNITED STATES PATENT OFFICE.

JOHN JONES, OF WILKES-BARRÉ, PENNSYLVANIA.

STEAM-BLOWER.

SPECIFICATION forming part of Letters Patent No. 486,162, dated November 15, 1892.

Application filed September 22, 1891. Serial No. 406,506. (No model.)

To all whom it may concern:

Be it known that I, JOHN JONES, a citizen of the United States, residing at Wilkes-Barré, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Steam-Blower, of which the following is a specification.

The invention relates to improvements in steam-blowers for creating draft in furnaces.

Heretofore steam-blowers have been employed and arranged under the grate of a furnace to create a draft; but difficulty has been experienced in such an arrangement, as intense heat is forced directly against the boiler, which is burned out in a short time, and, besides, the steam being mixed with air, combustion does not take place until after the gases have passed out through the flue into the open air, thereby causing a great waste of fuel, besides burning out the smoke-stack, and where such blowers have been employed there is a great volume of gas constantly burning at the top of the stack. Blowers have also been arranged within the stack; but they have been expensive and not durable, as the expansion and contraction have caused them to soon break, and the ordinary style of jets, as sometimes used in the stack, requires a very large opening, and consequently wastes a great amount of steam, at the same time filling but a small space, allowing the air to pass or return into the stack, and giving but poor results in proportion to the amount of steam expended.

The object of the present invention is to obviate the above objections and to provide a device which will not be injured by the expansion and contraction and which will create a draft similar to the natural draft of a furnace.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a plan view of a furnace provided with a device constructed in accordance with this invention. Fig. 2 is a vertical sectional view. Fig. 3 is a plan view of the tubular ring. Fig. 4 is a sectional view of the same.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a tubular ring arranged around a smoke-stack 2 of a furnace and adapted to be located within or on the exterior of the smoke-stack and provided with a series of nozzles 4, arranged to discharge steam from a boiler 5 into the smoke-stack 2, thereby creating a partial vacuum in the stack and causing a current of air to pass through the furnace, the air not being mixed with steam and the combustion taking place under the boiler instead of igniting after the gases have passed through the furnace into the open air. The tubular ring consists of two semicircular sections, so that it may be readily secured in position, and the sections are connected by flanged joints 6. Steam is conducted from the dome 7 of the boiler through the pipe 8 to the tubular ring 1, which is provided at intervals with a series of nozzles 4, arranged to discharge the steam into the smoke-stack, the nozzles 4 being curved and composed of two portions. Curved nozzles 4 are employed when the tubular ring is located on the exterior of the smoke-stack and enter the same through openings 11, as illustrated in Figs. 1 and 2 of the accompanying drawings; but straight nozzles 9 are employed when it is convenient to arrange the ring within a smoke-stack, which latter arrangement is especially advantageous, as the steam is superheated by the products of combustion passing out the smoke-stack and is discharged with great velocity. The inner ends of the nozzles are threaded and are provided with shoulders and engage suitable sockets or openings of the tubular ring. The pipe 8 connects the tubular ring with the steam-dome of the boiler, is provided with a valve or cock 10 to regulate the supply of steam, and to shut off the same entirely.

It will be seen that the device is simple and comparatively inexpensive in construction, is adapted to be readily applied to a furnace, and is capable of withstanding the heat and of creating drafts through a furnace sufficient to burn anything from the finest coal to culm, and that such drafts are similar to natural ones.

From the foregoing description and accompanying drawings the construction, operation,

and advantages of the invention will be readily understood by those skilled in the art.

The dotted lines in Fig. 4 of the drawings indicate the relative position of the parts when the tubular ring is employed on the outside of a smoke-stack and when on the inside of one.

What I claim is—

1. The combination, with a furnace, of a tubular ring arranged around the smoke-stack and located on the outside of the same, the series of detachable nozzles extending inward from the ring and passing through the sides of the smoke-stack and discharging into the latter, and a pipe connecting the boiler and the ring and supplying the latter with steam, substantially as described.

2. The combination, with a furnace, of a tubular ring arranged around the outside and at the base of the smoke-stack thereof and provided at its inner periphery with threaded openings, said ring being composed of two semicircular tubular sections removably coupled at their ends, the series of inwardly-extending detachable nozzles having their outer ends threaded and engaging the threaded openings of the ring and passing through the sides of the smoke-stack and extending upward, said nozzles being composed of two separable sections and being readily removable from the smoke-stack, and a pipe connecting the ring with the boiler of the furnace, substantially as described.

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

JOHN JONES.

Witnesses:

AUGUSTUS L. LE GRAND,

JOHN THOMSON.