S. J. HERMAN.

SOOT BLOWER.

APPLICATION FILED FEB. 16, 1917.

1,281,005.

Patented Oct. 8, 1918.

4 SHEETS—SHEET 1.

Fig. 1.

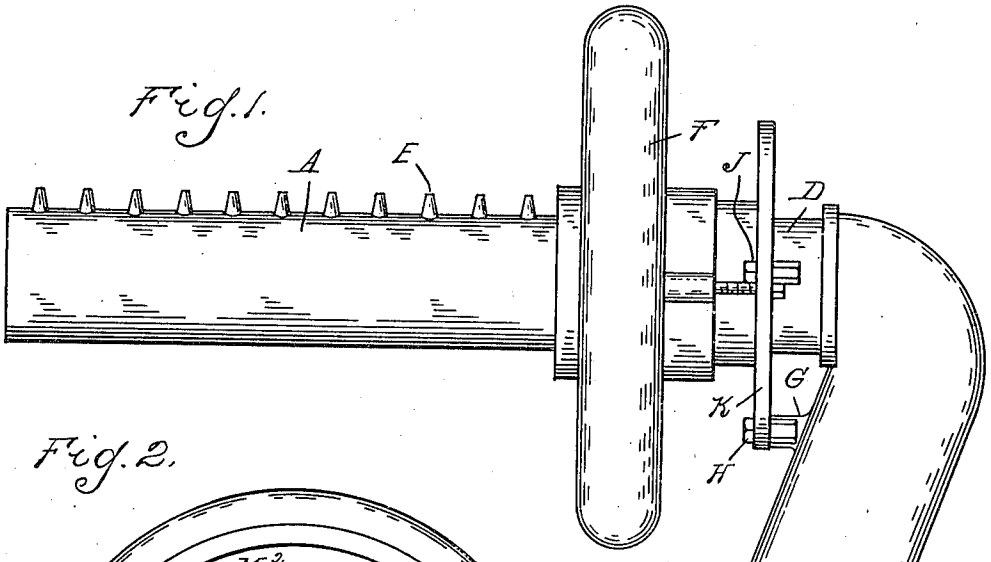
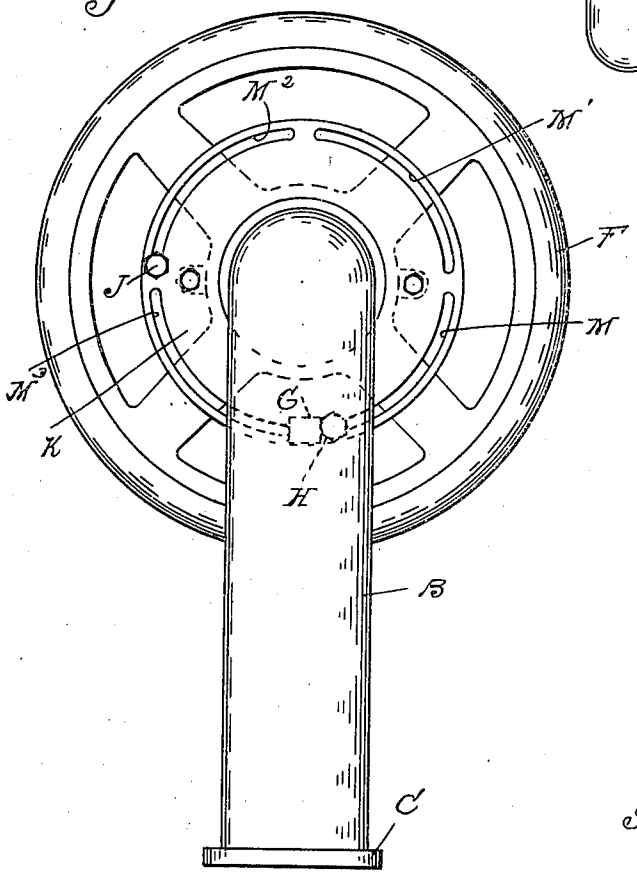


Fig. 2.



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4 SHEETS—SHEET 2.

Fig. 1.

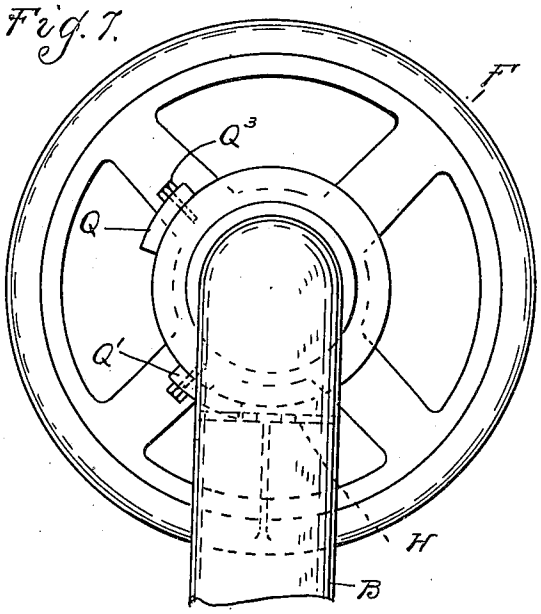


Fig. 8.

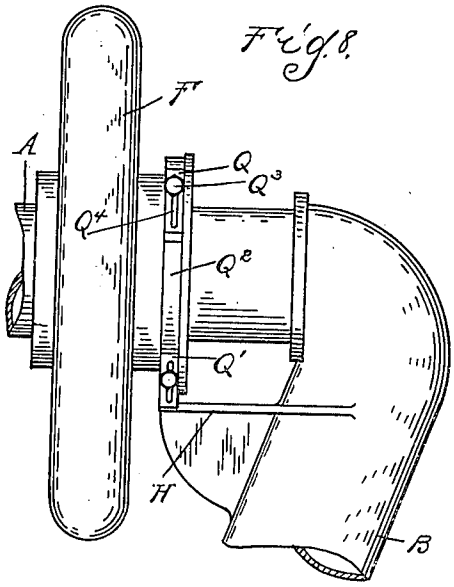


Fig. 3.

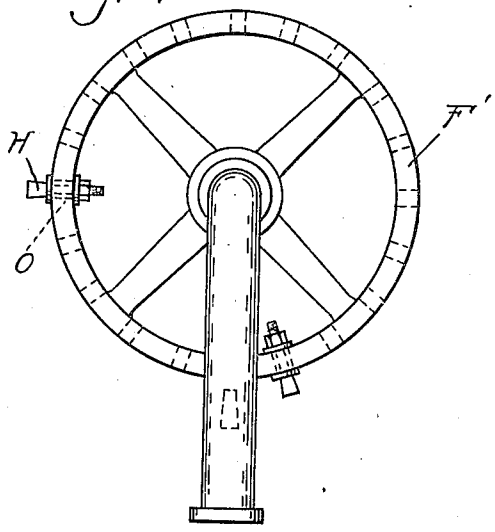
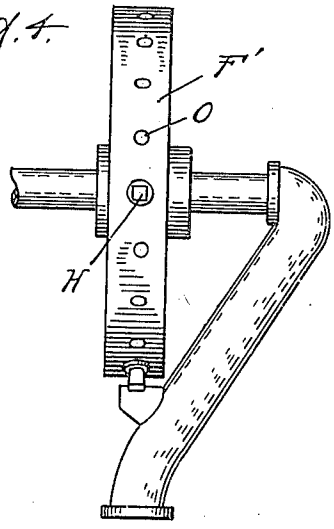


Fig. 4.



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4 SHEETS—SHEET 3.

Fig. 9.

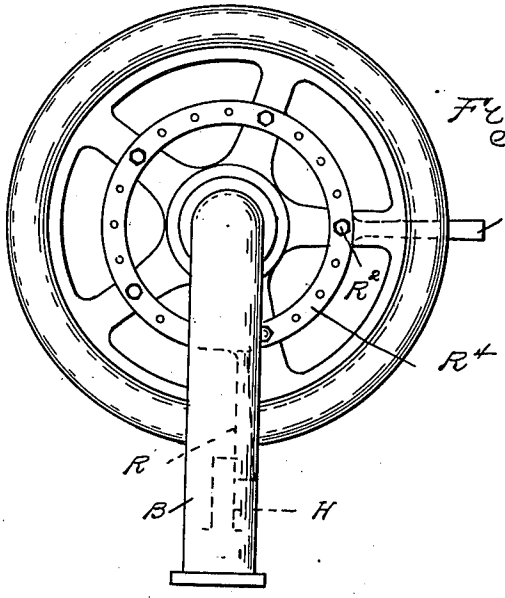


Fig. 10.

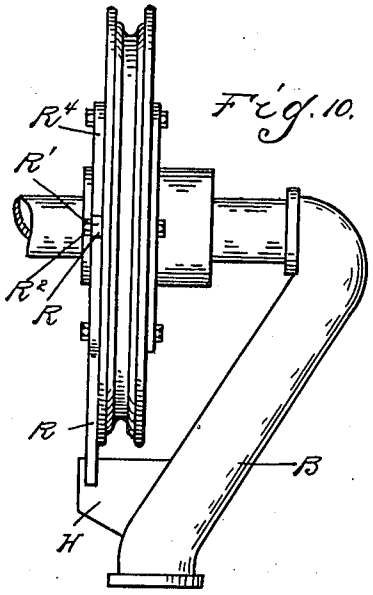


Fig. 5.

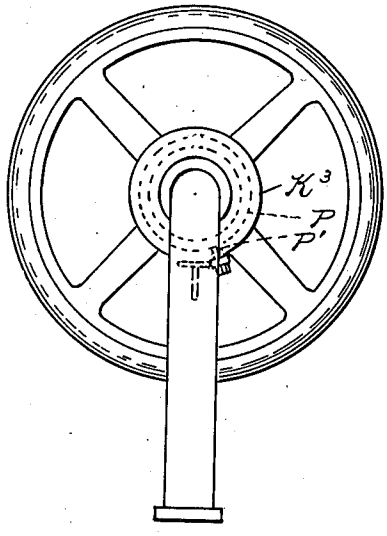
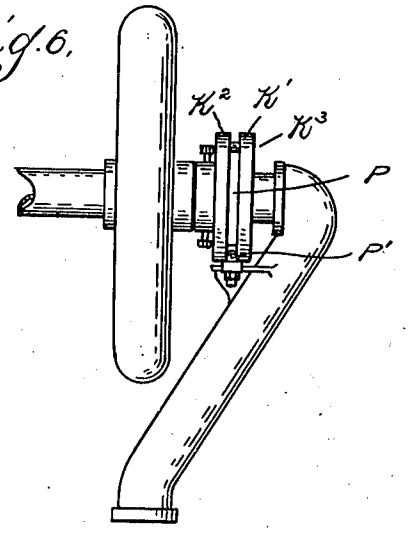


Fig. 6.



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4 SHEETS—SHEET 4.

Fig. 11.

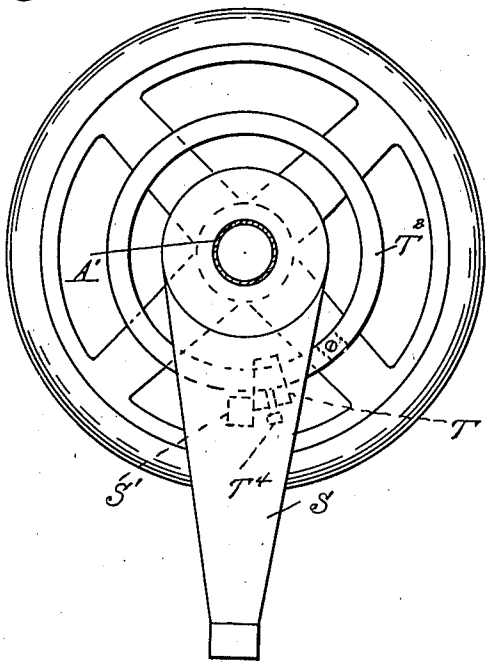


Fig. 12.

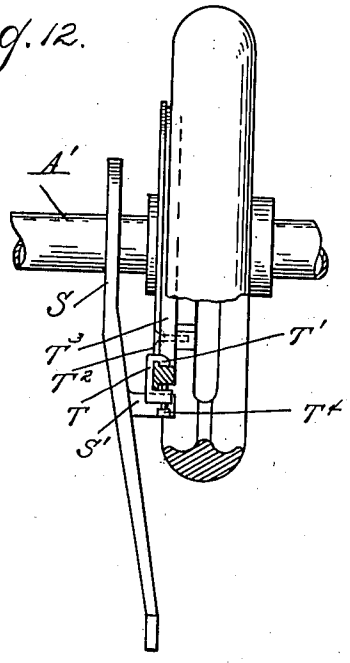


Fig. 13.

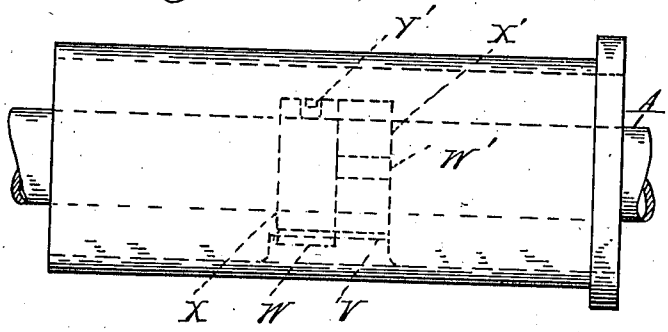
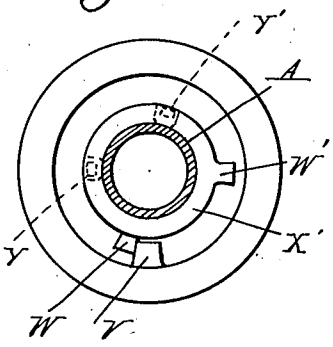


Fig. 14.



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UNITED STATES PATENT OFFICE.

SAMUEL J. HERMAN, OF DETROIT, MICHIGAN, ASSIGNOR TO DIAMOND POWER SPECIALTY COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

SOOT-BLOWER.

1,281,005. Specification of Letters Patent. Patented Oct. 8, 1918.

Application filed February 16, 1917. Serial No. 149,123.

To all whom it may concern:

Be it known that I, SAMUEL J. HERMAN, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Soot-Blower Construction, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to soot blowers and refers more particularly to a new and improved construction of soot blower of the type in which a rotary pipe or member is employed.

Among the objects of the invention are to provide means for preventing the rotary soot blower being turned beyond certain predetermined limits and especially to provide a stop mechanism which can be adjustably set to permit the blower to be turned through arcs of various sizes; to provide a construction in which one part of the stop mechanism is carried by the rotatable member and the other part by the goose neck or other stationary support for the blower.

The invention also resides in such details of construction and arrangements and combinations of parts as will more fully hereinafter appear.

In the drawings:

Figure 1 is an end view of a blower unit embodying my invention;

Fig. 2 is a fragmentary side elevation of the construction shown in Fig. 1;

Figs. 3 and 4 are views similar to Figs. 1 and 2 showing a modified construction;

Figs. 5 and 6 are similar views showing a further modification;

Figs. 7 and 8 are similar views showing a still further modification;

Figs. 9 and 10 are similar views showing another modification;

Figs. 11 and 12 show a still further modification, Fig. 12 being however partly in section.

Figs. 13 and 14 show a still further modification.

Describing in detail the various constructions shown in the drawings and taking up first the constructions shown in Figs. 1 and 2, A designates the blower pipe and B the goose neck which at its lower end is provided with a fitting C for connection with the steam supply and at its upper end has a rotative coupling D with the blower pipe. As the blower unit is of the type in which the pipe A is rotatable to turn the discharge nozzles E so as to project the steam from the nozzles upon different parts of the boiler tubes, a hand wheel F is employed for rotating the pipe E, although it is of course understood that the invention in its broader aspects is not limited to the use of a hand wheel, as various other devices for turning the pipe could be employed.

Heretofore difficulty has been encountered in the use of these blowers owing to the operator rotating the blower through too great an arc, thus projecting the steam jets so as to often injure the boiler tubes or other parts of the boiler. If the units are installed with fixed stops a different arrangement is necessary for each particular boiler, depending upon the arc through which the blower can be safely turned.

The present invention contemplates a novel construction and arrangement of parts whereby a stop mechanism for the blower unit can be standardized and a desired flexibility of adjustment retained. In the construction shown in Figs. 1 and 2 the stationary stop G is mounted on the goose neck B while the rotatable stops H and J are carried by a plate K secured to and rotatable with the hand wheel sleeve. In Fig. 1 it will be noticed that the stops H and J are adjustably mounted in slots M and M^2 in the plate K. Thus by unloosening the nut on the bolt the latter can be adjusted to various positions so as to limit the movement of the pipe through any predetermined arc. The plate K being preferably also formed with additional slots M′ and M^3 so as to increase the amount of adjustment that can be made. In installing the blower unit the stops can be set at whatever point in the circumference that will permit the blower to be turned to the desired arc. In case however the amount of movement is too large or too small, adjustment can be easily made by changing the position of the movable stops.

In the construction shown in Figs. 3 and 4 the movable stops J and H are extended through bolt holes O distributed around the periphery of the wheel F′. In this construction the adjustment is made by removing one of the movable stops and putting it

through a different bolt hole, there being a plurality of such holes distributed around the periphery of the wheel.

In the construction shown in Figs. 5 and 6 the plate K′ is formed of two sections K^2 and K^3 bolted together. Through the space P in between the sections K^2 and K^3 there is located a movable stop P′ which can be adjusted to various positions in the plate by shifting it along the groove P. In other respects the construction is substantially the same as in Fig. 1.

In the construction shown in Figs. 7 and 8 a pair of segmental members Q and Q′ form the stops. These stops are provided with elongated grooves Q^4 through which extend set screws Q^3 into the plate Q^2. The elongated slots permit the adjustment of the movable stops Q to vary the amount of rotative movement the wheel F and blower element A can take. The stationary stop H is formed on the goose neck B in a manner similar to Fig. 1.

In the construction shown in Figs. 9 and 10 the movable stops are formed as projecting arms R and R′, the relative position of these arms being adjustable by means of securing bolts R^2 extending through any one of a series of bolt holes R^3 in the plate R^4. The stationary stop H is formed on the goose neck B in the same manner as in the constructions previously described.

In the construction shown in Figs. 11 and 12 the nozzle A′ extends through a supporting standard or plate S on which is formed the stationary stop S′. The movable stop in this construction comprises a lug or yoke T which has a grooved portion T′ extending over a flange T^2 on the rotatable plate T^3. A set screw T^4 is employed for holding the stop in various positions of adjustment around the plate T^3.

In the construction shown in Figs. 13 and 14 an elongated sleeve is employed which has an internal lug V against which there abuts stationary lugs W and W′ carried by collars X and X′ which can be shifted around the periphery of the blower pipe A and locked in any position of adjustment by set screws Y and Y′.

In all of the constructions it will be understood that two or more stops can be employed if desired and various changes in the details of construction and arrangements and combinations of parts can be made within the scope of my invention.

What I claim as my invention is:

1. In a boiler cleaner, the combination with a rotatable blower member having a plurality of discharge nozzles, of a plate member rotatable with said blower member, said plate member having an elongated slot, a stop adjustable in said slot, and a stationary stop located in the path of movement of the first-mentioned stop for limiting the rotative movement of the blower member.

2. In a boiler cleaner, the combination with a rotatable blower member having a plurality of discharge nozzles, of a goose neck forming a stationary support for the blower member, a stop rotatable with the blower member and adapted to coöperate with a portion of the goose neck for limiting the rotative movement of the blower member, and means for adjustably positioning said stop.

3. In a boiler cleaner, the combination with a rotatable blower member having a plurality of discharge nozzles, of means for rotating the blower member, a pair of stops rotatable with the blower member, and a coöperating stop for limiting the rotative movement of the blower member, one of said stops being adjustable to vary the amount of rotation of the blower.

In testimony whereof I affix my signature.

SAMUEL J. HERMAN.