O. L. SALVESEN.

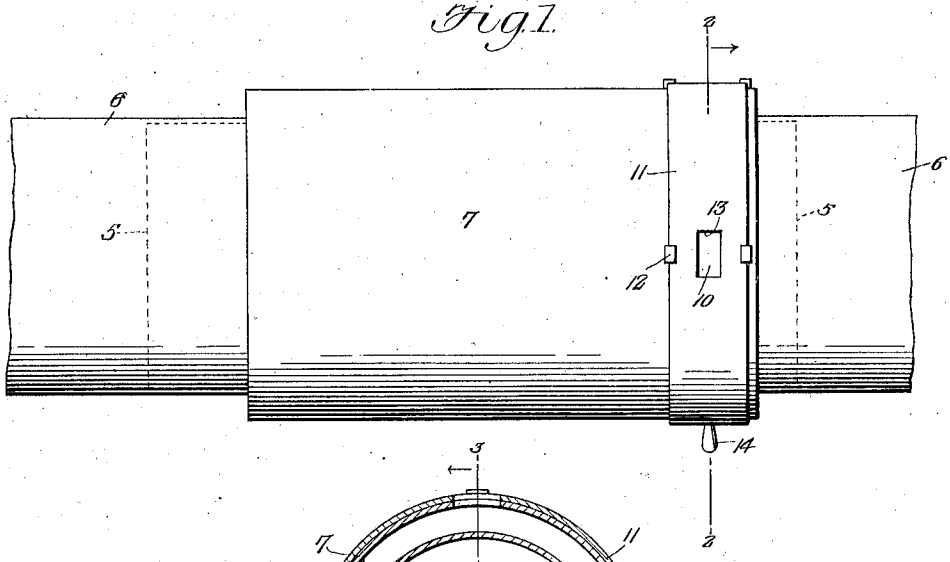
COAL SAVER AND SMOKE CONSUMER.

APPLICATION FILED MAY 24, 1919.

1,362,744. **Patented Dec. 21, 1920.**

2 SHEETS—SHEET 1.

Fig. 1.



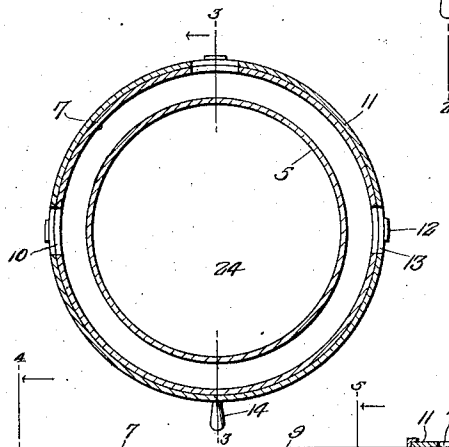


Fig. 2.

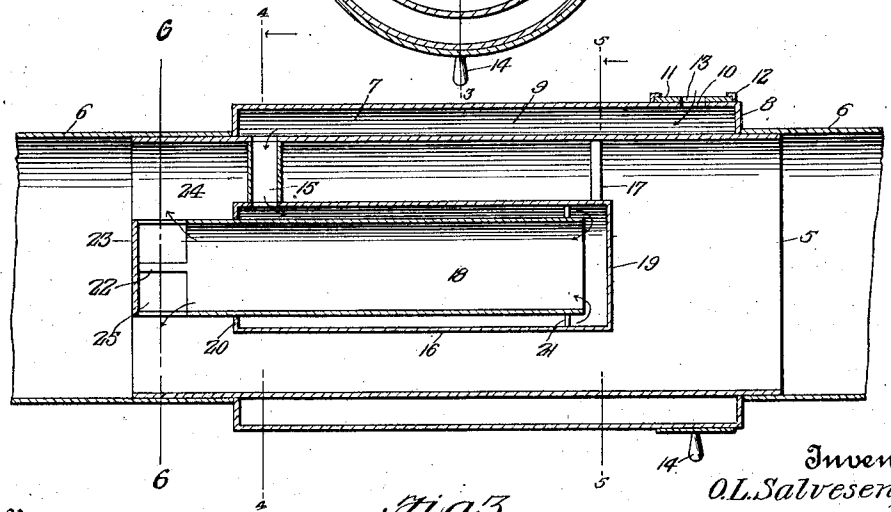


Fig. 3.

Witnesses

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2 SHEETS—SHEET 2.

Fig.4.

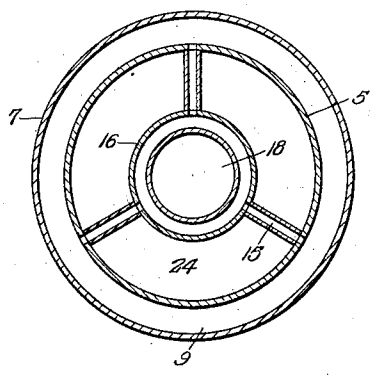
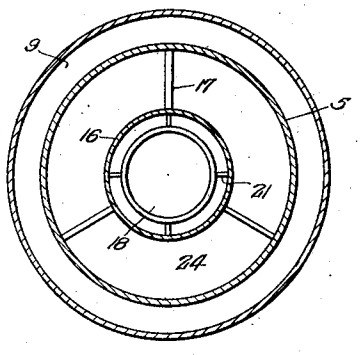


Fig.5.



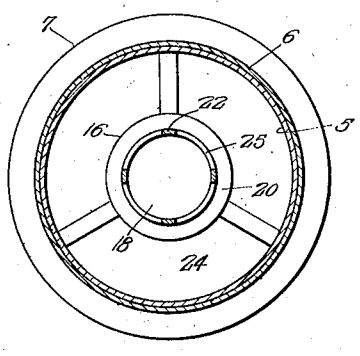


Fig.6.

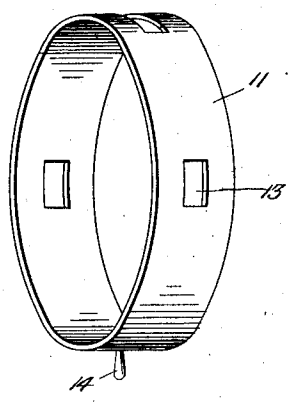


Fig.7.

Witnesses

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UNITED STATES PATENT OFFICE.

OLE L. SALVESEN, OF LAWRENCE, KANSAS.

COAL-SAVER AND SMOKE-CONSUMER.

1,362,744. Specification of Letters Patent. Patented Dec. 21, 1920.

Application filed May 24, 1919. Serial No. 299,568.

To all whom it may concern:

Be it known that I, OLE L. SALVESEN, a citizen of the United States, residing at Lawrence, in the county of Douglas and State of Kansas, have invented new and useful Improvements in Coal-Savers and Smoke-Consumers, of which the following is a specification.

The present invention is in the nature of an attachment for the smoke pipes of furnaces, stoves and the like, whereby a circulation of air from the exterior will be admitted centrally to the pipe to mix with the products of combustion passing through the pipe and to insure the consumption of combustible gases in the said products of combustion, and consequently allow only smoke entirely free from soot and combustible gases to pass through the pipe.

The improvement is in the nature of a combined smoke consumer and fuel saver, is of a simple construction and may be readily attached to the smoke pipe of any ordinary furnace or the like.

Other objects and advantages will present themselves as the nature of the invention is better understood, reference being had to the accompanying drawings, in which:

Figure 1 is an elevation of a stove or furnace pipe provided with the improvement.

Fig. 2 is a sectional view approximately on the line 2—2 of Fig. 1.

Fig. 3 is a longitudinal sectional view approximately on the line 3—3 of Fig. 2.

Fig. 4 is a transverse sectional view approximately on the line 4—4 of Fig. 3.

Fig. 5 is a sectional view approximately on the line 5—5 of Fig. 3.

Fig. 6 is a sectional view approximately on the line 6—6 of Fig. 3.

Fig. 7 is a perspective view of the cylindrical valve.

The improvement is designed to be attached to the smoke pipe of a stove, furnace or the like close to the said stove or furnace. The device includes a pipe member 5 that has its ends received in the confronting ends of the stove pipe section 6. Surrounding the pipe member 5 is a cylindrical drum 7 that has flanged ends 8, secured to the pipe 5. The space between the drum 7 and the pipe 5 provides an air chamber 9. The drum 7, adjacent one end thereof is provided with spaced openings 10 that provide the air inlets to the chamber 9. These openings are controlled by a valve in the nature of a cylindrical band 11 that surrounds the drum. The band is guided in suitable lips or flanges 12 on the drum. The band is provided with spaced openings 13 that are designed to be brought in register with the openings 10. The band 11 is provided with an operating handle 14, whereby the band may be turned on the drum to bring the openings therein in register or out of register with the openings 10 in the drum 7.

The pipe 5, near the end of the drum opposite that provided with the valve controlled openings 10, has inwardly extending radially arranged ducts 15 that communicate with a tubular member 16 near one of the closed ends thereof. The tubular member is coextensive with the pipe 5 and is sustained centrally therein by radially disposed braces 17 arranged between the said pipe and the tube 16. In the tube 16 there is centrally arranged a pipe member 18 that has one end spaced away from the end 19 of the tube 16. This tube extends through the second closed end 20 of the tube 16 and the said tube is supported by engagement with the wall provided by the opening in the said end 20 while the opposite end is held in proper spaced relation to the tube 16 by radially disposed brace members 21. The projecting end of the pipe 18 is provided with spaced outstanding fingers 22, and to these fingers is secured a baffle plate 23. The smoke from the furnace finds an outlet through the spaces 24 between the ducts 15. The valve 11 is regulated to permit of air entering the chamber 9 through the openings 10. This air is partly heated by the smoke passing through the smoke pipe and through the pipe 5. The air enters the tube 16 through the radially disposed ducts 15 and is directed toward the end 19 of the said tube. The air is superheated in its passage through the tube, and passes toward the closed end 19 thereof, from where it is directed through the small pipe 18 toward the baffle 23, and passes into the smoke pipe 6 through the passages 25 between the fingers 22. The heated air mixing with the products of combustion passing through the smoke pipe mixes with the gases in the products of combustion, causing the same to be consumed by the additional oxygen thus supplied, and as a result only smoke entirely free of carbon and combustible gases pass through the pipe.

The improvement, it will be noted, is of an

extremely simple nature, may be attached to any smoke pipe in an easy, convenient and secure manner, will assure the consumption of all combustible gases passing through the pipe, and consequently checks the draft from the furnace which will result in a great saving of fuel as a perfect combustion of all gases passing through the pipe is insured, and consequently less fuel will be required in the furnace in producing the maximum amount of heat required.

Having thus described the invention, what is claimed as new, is:—

A device for the purpose set forth, adapted to form a section of a smoke pipe, including a drum having flanged ends and provided with air inlets, a valve controlling the inlets, a pipe extending through the flanged ends of the drum and designed to be connected to the sections of a smoke pipe, a second pipe of a less length and diameter than the first mentioned pipe coaxially arranged therein, said last mentioned pipe having closed ends, radially disposed air ducts between the first and last mentioned pipe members, a pipe member of a less cross sectional diameter than the last mentioned pipe member extending through one of the closed ends of the latter and spaced away from the second closed end thereof, means for retaining the last mentioned pipe members in coaxial alinement, said last mentioned pipe member having its outer end provided with extending fingers, and a baffle secured to the ends of the said fingers.

In testimony whereof I affix my signature.

OLE L. SALVESEN.