(No Model.)

G. C. & N. P. FRASER.

DAMPER.

No. 593,930. Patented Nov. 16, 1897.

Fig. 1

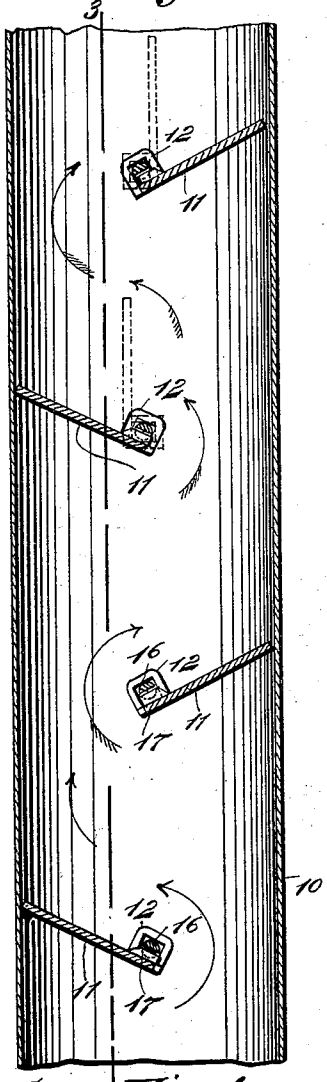


Fig. 2

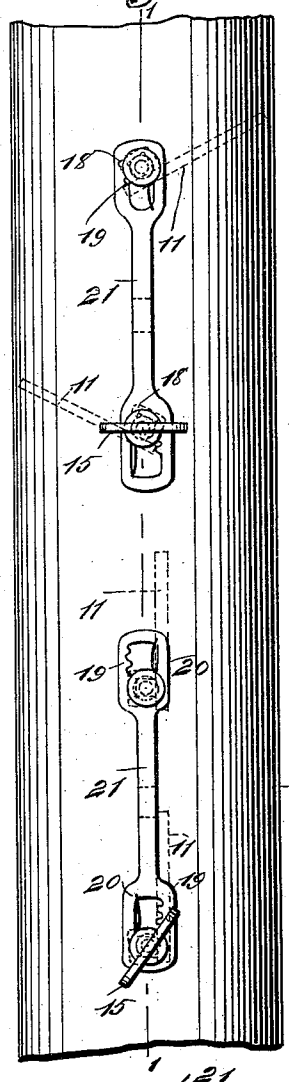


Fig. 3

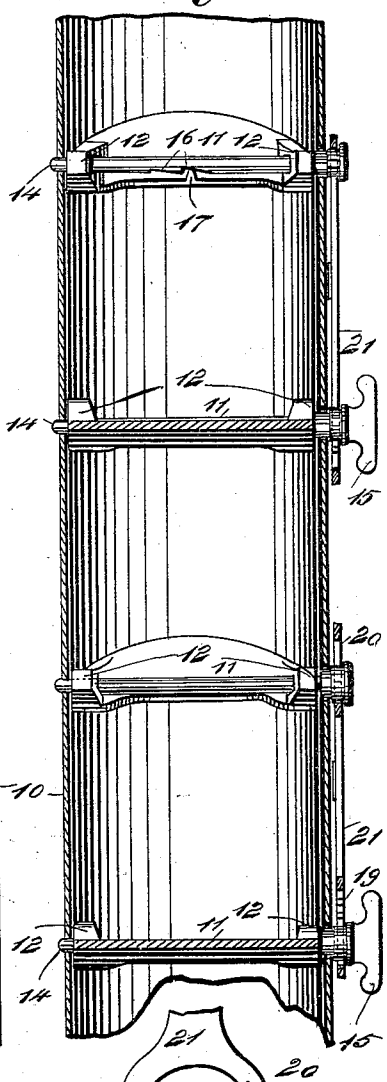


Fig. 4

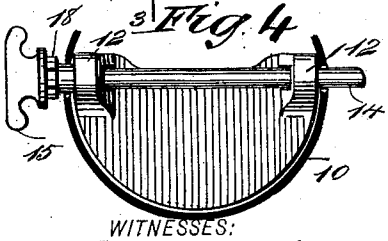


Fig. 5

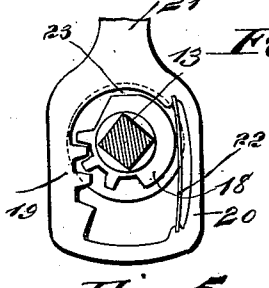
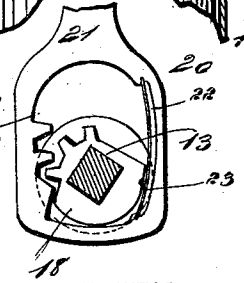


Fig. 6



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UNITED STATES PATENT OFFICE

GEORGE CORWIN FRASER AND NORMAN PETO FRASER, OF CARSONVILLE, MICHIGAN.

DAMPER.

SPECIFICATION forming part of Letters Patent No. 593,930, dated November 16, 1897.

Application filed December 5, 1896. Serial No. 614,526. (No model.)

To all whom it may concern:

Be it known that we, GEORGE CORWIN FRASER and NORMAN PETO FRASER, both of Carsonville, in the county of Sanilac and State of Michigan, have invented certain new and useful Improvements in Dampers, of which the following is a full, clear, and exact description.

Our invention relates to improvements in stovepipe-dampers; and the object of our invention is to produce a superior arrangement of dampers of that class which may be manipulated so as to promote a rapid draft, and may also be turned so as to make the products of combustion pursue a tortuous or zigzag course through the pipe, to the end that the draft may be checked somewhat and all the heat radiated and rendered effective.

A further object of our invention is to arrange these dampers in pairs in such a manner that each pair may be independently operated.

Our invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal section on the line 1 1 in Fig. 2 of a stovepipe provided with our improved dampers, the dampers being shown in cross-section. Fig. 2 is an outside elevation of the pipe and the damper arrangement. Fig. 3 is a longitudinal section on the line 3 3 of Fig. 1. Fig. 4 is a sectional plan of one of the dampers. Fig. 5 is a sectional elevation of one of the connecting-rods and its operating-pinion, the rod being shown depressed; and Fig. 6 is a similar view with the rod raised.

The stovepipe 10 is of the usual kind, and arranged at intervals within it are dampers 11, these being hung so as to swing to opposite sides of the pipe alternately, as shown in Fig. 1, and when thus tilted they cause the products of combustion to pursue a sinuous course through the pipe, as illustrated by the arrows, so that the heat being checked is radiated from the pipe. The dampers may, however, be turned edgewise in the pipe, as illustrated by dotted lines in Fig. 1, so that there will be a straight draft through the pipe.

Each damper 11 is of a generally semicircular shape, so as to half-close the pipe when it is in a nearly horizontal position, and on opposite edges of the damper are keepers 12, which are nearly rectangular in cross-section and which are adapted to engage the squared sections 13 of the damper-stem 14, which projects through the funnel, being held to turn therein, and the stem is provided near the center with notches 16, which are adapted to engage a tooth 17 on the damper, and as it is necessary to spring the stem slightly to have it engage the tooth the tooth and notches serve to hold it in place when once it is engaged.

The dampers are connected in pairs, and one stem of each pair is provided with a suitable handle 15, while both are provided outside the pipe with mutilated pinions 18, which are adapted to engage racks 19 in the loops 20 of the connecting-rods 21, which connect the adjacent pairs of stems, and the racks and pinions are arranged in such a way that when one stem is turned it will throw its damper in one direction and move the connecting-rod so as to turn the next adjacent damper in the opposite direction, or by turning the damper straight in the funnel the next damper will be similarly turned, as illustrated in Fig. 2.

Each loop 20 has a leaf-spring 22 held in one side and pressing against the corresponding pinion 18. Each pinion 18 has a plane surface 23, which turns against its corresponding spring 22 when the dampers are moved to a perpendicular position. By these means the dampers are held raised except when purposely lowered.

It will be observed that the connecting-rods and pinions are outside of the stovepipe, so that they are not liable to be excessively heated and warped. Each pair of dampers may be independently worked, so that, if desired, one set of dampers may be turned straight in the funnel and another set turned into a nearly horizontal position, as shown by dotted lines in Fig. 2, and it will of course be

understood that the pipe may be provided with any desired number of these dampers.

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

1. The combination with a flue, of two dampers mounted to turn therein and each having an area less than the width of the flue, a pinion connected with each damper, and a rack-bar extending between and connected with the pinions, the rack-bar engaging opposite sides of the pinions to turn the dampers oppositely, substantially as described.

2. The combination with a flue, of two dampers mounted to turn therein on axes transverse to the flue and each having an area less than the width of the flue, a pinion fixed to the trunnion of each damper, and a bar having a loop at each end, the loops respectively inclosing the pinions and each loop having rack-teeth at one of its sides whereby to be connected with the pinions and the rack-teeth being oppositely located with reference to each other, substantially as described.

3. The combination with a flue, of two dampers mounted to turn therein on axes transverse to the flue and each having an area less than the width of the flue, a pinion fixed to the trunnion of each damper, a bar extending between the pinions and having a loop at each end, the loops respectively inclosing the pinions, and one side of each loop having rack-teeth to respectively engage the pinions, the rack-teeth being oppositely located with reference to each other, and a spring held within each loop of the bar and respectively pressing the pinions into engagement with the rack-teeth, substantially as described.

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