(No Model.)

C. ZITKO.

RADIATOR.

No. 528,058. Patented Oct. 23, 1894.

Fig. 1.

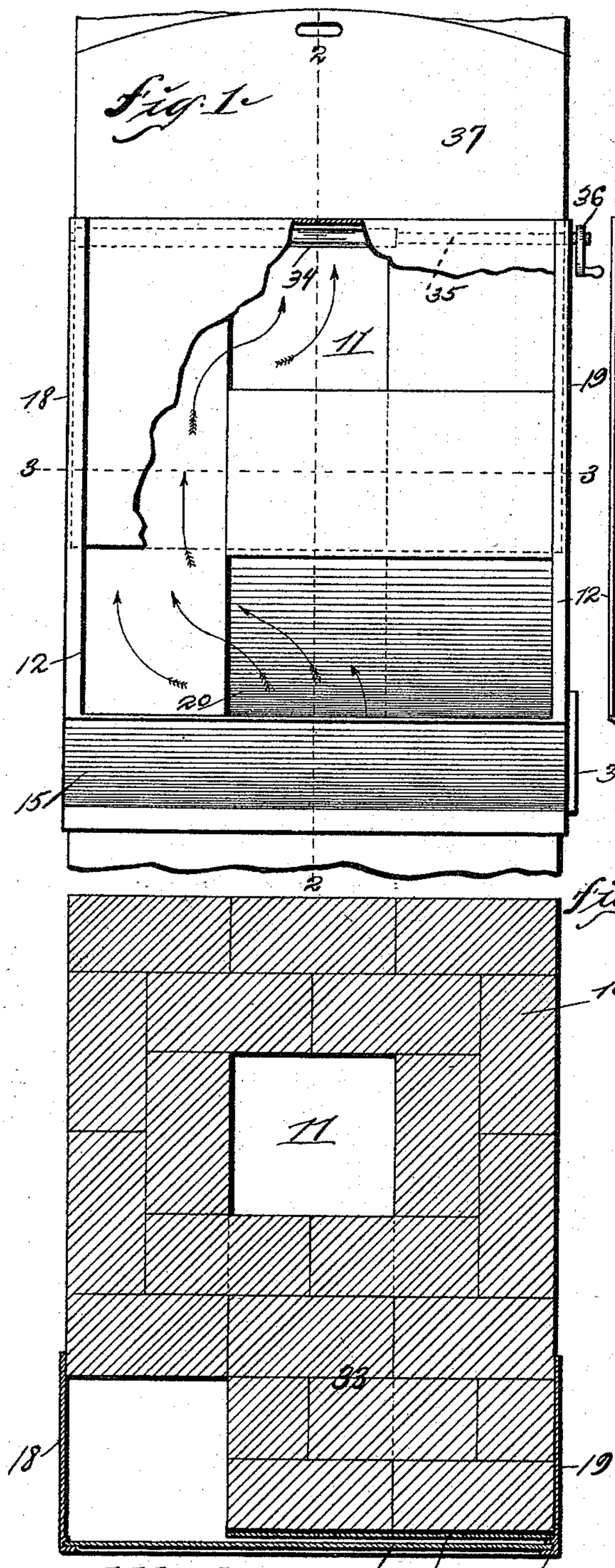


Fig. 2.

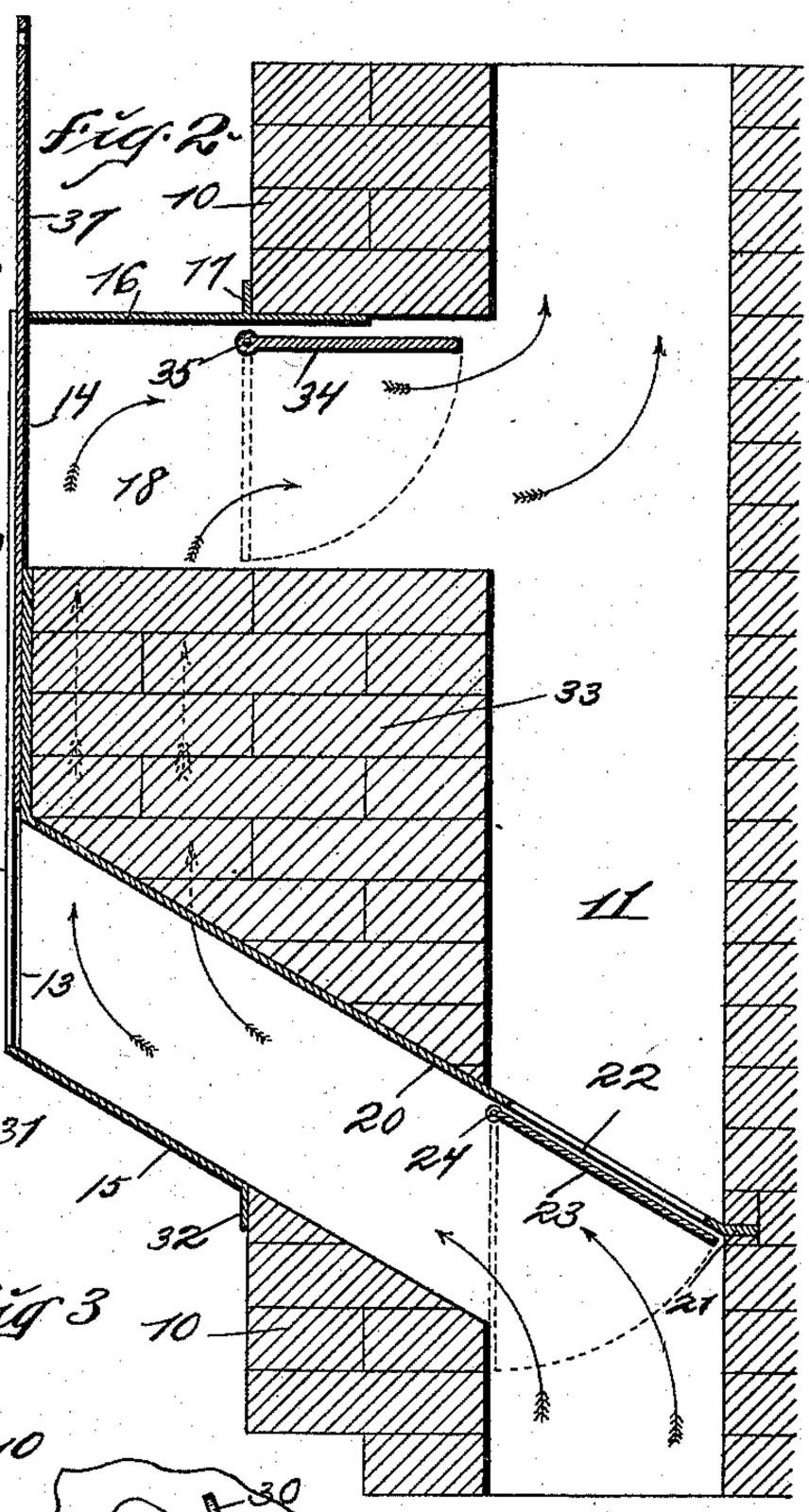


Fig. 3.

Fig. 4.

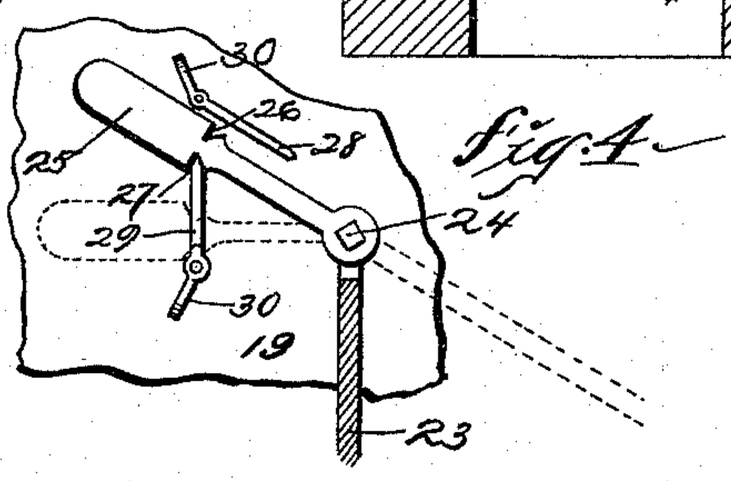


Fig. 5.

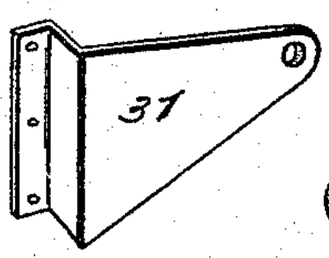
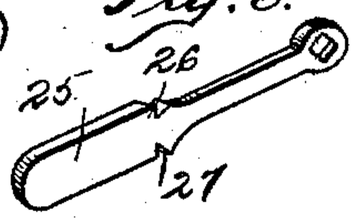


Fig. 6.



Witnesses:
M. P. Smith.
R. P. RYBITZKI.

Inventor:
Charles Zitko
By Higdon & Higdon & Longren
Att'ys.

UNITED STATES PATENT OFFICE.

CHARLES ZITKO, OF ST. LOUIS, MISSOURI.

RADIATOR.

SPECIFICATION forming part of Letters Patent No. 528,058, dated October 23, 1894.

Application filed April 4, 1894. Serial No. 506,359. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ZITKO, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Radiators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has for its object the provision of improved means for utilizing heat of flues and brick chimneys, which would otherwise be wasted.

My invention consists in certain novel features of construction, combination and arrangement of parts, hereinafter described and designated in the claim.

Referring to the drawings: Figure 1 is a front elevation, partly in section, showing the device applied, as required for practical use. Fig. 2 is a central sectional elevation on the line 2—2 of Fig. 1. Fig. 3 is a transverse horizontal sectional view on the line 3—3 of Fig. 1. Fig. 4 is an enlarged detail view of one of the damper operating mechanisms. Fig. 5 is a detail perspective view of the shield for the damper mechanism, shown in Fig. 4. Fig. 6 is a detail perspective view of a portion of the aforesaid damper mechanism.

In the construction of the device as shown, the numeral 10 designates a chimney, having a smoke flue 11 therein. An aperture is formed in the face of the chimney 10, and mounted in said aperture is a metallic box, comprising the front plate 12, having openings 13 and 14 therein in a vertical plane one below the other, the inclined lower plate 15, the horizontal upper plate 16, having the flange 17 thereon, and the side-plates 18, 19, respectively. The rear of said box is open, and an inclined partition 20 is transversely located within said box, parallel to the inclined bottom-plate 15 thereof, which said partition extends both ways across the said box, and is provided with a horizontal flange 21 on its rear edge, adapted for insertion within the wall of the chimney 10. The partition 20 extends across the flue 11, and is provided with a valve-port 22, approximately of the same transverse dimension as the flue 11.

Pivotally mounted within the radiator box, and normally in alignment with the forward side of the flue 11, is a damper 23, which damper normally closes the port of entrance from the flue 11 to the space between the bottom-plate 15 and the partition 20 and closes against and parallel with the under side of the inclined partition 20.

The damper 23 is mounted upon a horizontal shaft 24, which said shaft projects outwardly through the side-wall 19 of the radiator box, and has an angular outer end portion, on which is rigidly mounted a lever 25 outside of the radiator box. The lever 25 is provided with notches 26, 27, respectively, in the upper and lower edges thereof, which said notches are adapted to admit and retain pawls 28, 29, respectively, which said pawls are mounted upon a manually operated detent 30 fulcrumed on the side of the plate 19, adjacent to the said lever, one above and one below it. Fixed to the side-plate 19, and extending over and forming a cover for the lever 25, and detent 30, is a shield 31 (Fig. 5).

A flange 32 is formed on the inner edge of the bottom-plate 15 of the box, which said flange is adapted to fit snugly against the face wall of the chimney 10.

Mounted upon the partition 20 is a brick partition 33, which projects a distance inward beyond the walls of the flue and fills a portion of the interior of the radiator box, and forms the front side, or wall, for the flue 11, the portion of the radiator box, remaining unoccupied by the said brick partition, with the space between the partition 20 and bottom plate 15 forming a vertical passage way for the products of combustion, carried upward by the draft of the flue, independent of, and laterally from the said flue.

A damper 34 is rigidly connected to a shaft 35, extending transversely of, and projecting laterally from the radiator box, which said shaft is provided with a manually operated crank 36, on its outer projecting end portion, whereby the said damper may be operated, the said damper normally closing the space above the brick partition 33.

A slide valve 37 is vertically positioned in bearings, formed in the front plate 12 of the radiator box, and extends transversely of, and closes the openings 13, 14 in said front plate, this means being provided in order that access may be had to the interior of said

box, for the purpose of cleaning the same, or making necessary repairs in the construction thereof.

In the operation of this device, when it is desired to utilize a portion, or all, of the heat, which would otherwise pass away through the flue 11, the lever 25 is manually depressed into the position shown by dotted lines in Fig. 4, the detent 30 oscillating upon its pivot and permitting engagement of the pawl 28 in the notch 26, by this means closing the port 22 in the partition plate 20, and affording a passage laterally from the flue 11 into the radiator box. Synchronously with the manipulation of the damper 23, the damper 34 should be operated, by the manual oscillation of the crank 36, into the position shown in solid lines in Fig. 2, thus completing the establishment of a clear passage for the products of combustion through the radiator box, and permitting the radiation of heat from the said radiator box into the room where it is desired to utilize the same.

The damper 34 may be retained in the position shown in Fig. 2, by any pawl or ratchet mechanism connected with the shaft on which said damper is mounted.

When it is not desired to utilize the heat from the products of combustion, the dampers 23, 34 are permitted to assume the position shown by dotted lines in Fig. 2, the products of combustion being impelled by the draft of the flue in a direct vertical line to a point of escape into the atmosphere.

What I claim is—

The combination, in an improved heating drum attachment for flues, of the flue or chimney 10, the metallic box having the front plate 12 with openings 13, 14 therein in a vertical plane one below the other, the inclined lower plate 15, the horizontal upper plate 16, suitable side-plates, the rear of the said box opening into said flue, the inclined partition 20 extending transversely within said box parallel to the inclined bottom plate 15 thereof and extending across the vertical passage of said flue, and said partition having an opening or port 22 therein in vertical alignment with the vertical passage of the flue, a damper located adjacent said opening or port to direct the products of combustion into said box, a body of brick or non-combustible material 33 mounted upon the inclined partition 20 within said box and projecting a distance inward beyond the walls of said flue and forming the front side thereof, and also forming a lateral vertical passage between itself and one of the side plates of said box, and said vertical passage communicating at its lower end with the space between said inclined partition and said bottom plate 15, a horizontal passage at the upper end of said box communicating with the upper end of said lateral vertical passage and with the interior of said flue at a point above said body of brick, a damper for closing said horizontal passage, and a covering for the openings 13, 14 in said front plate, substantially as herein specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES ZITKO.

Witnesses:
M. G. IRION,
JNO. C. HIGDON.