

J. H. GOODFELLOW.
Ash-Sifter for Stoves.

No. 159,406.

Patented Feb. 2, 1875.

Fig. 1.

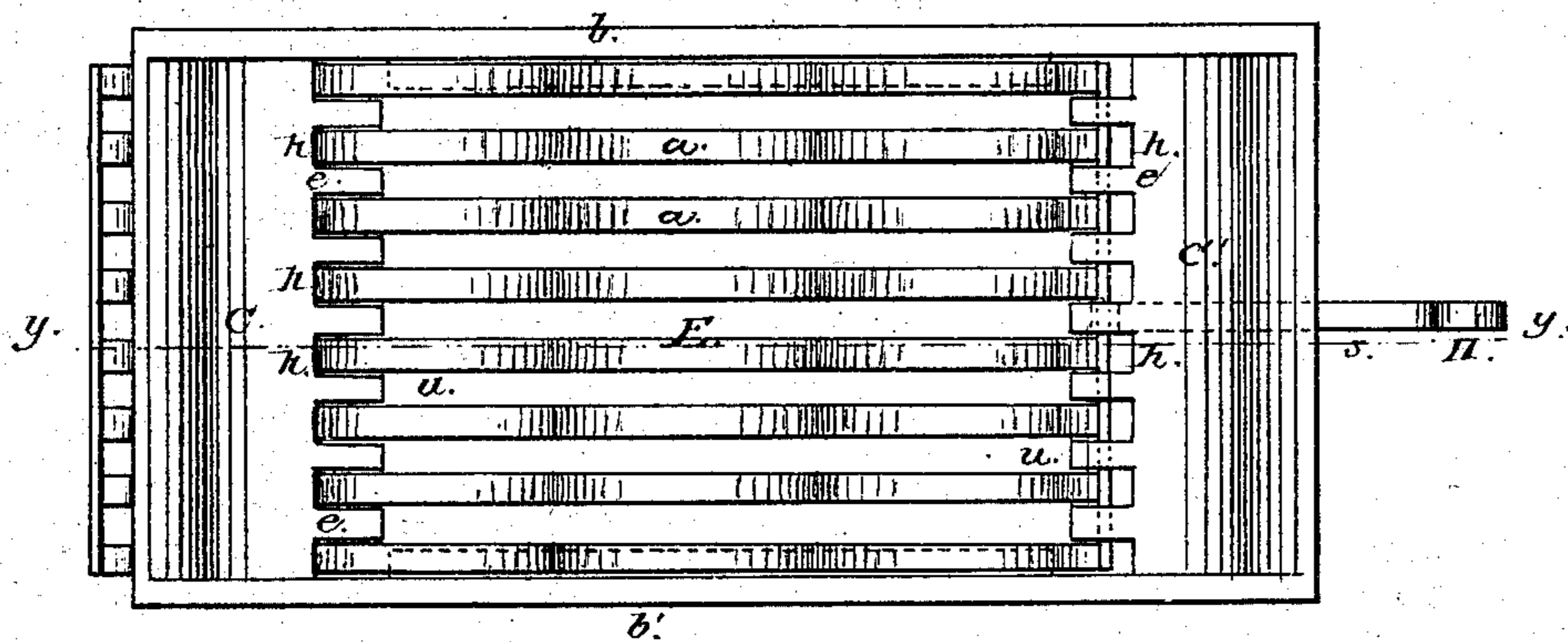


Fig. 2.

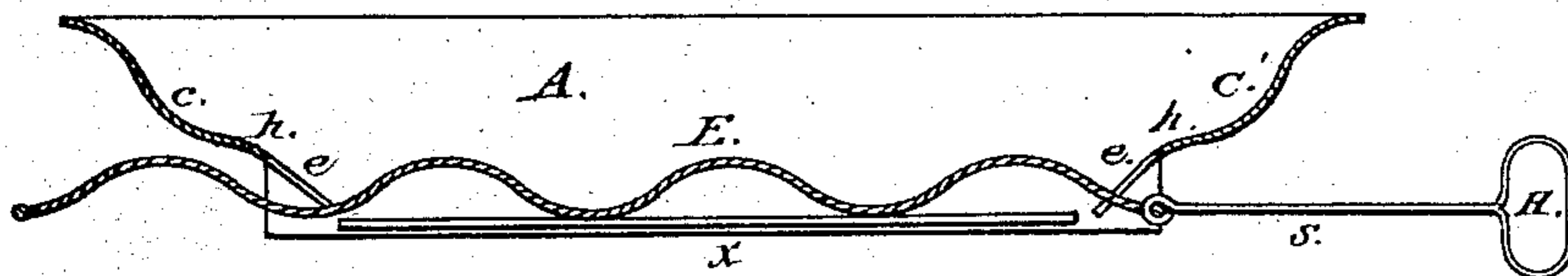
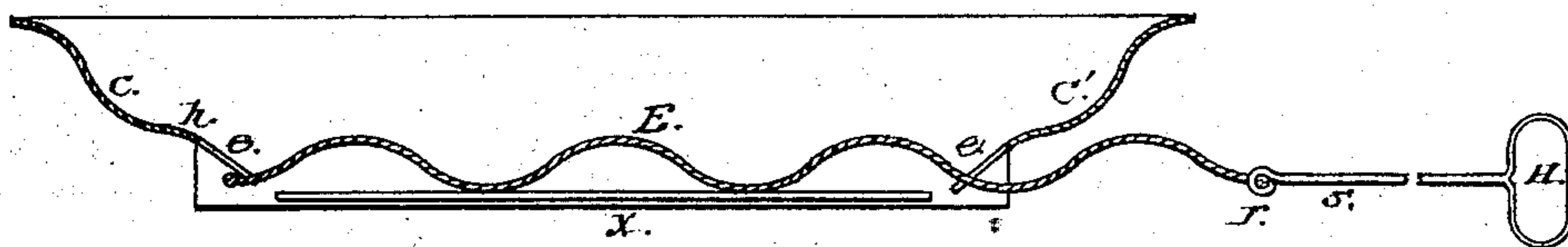


Fig. 3.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN ASH-SIFTERS FOR STOVES.

Specification forming part of Letters Patent No. **159,406**, dated February 2, 1875; application filed December 30, 1874.

To all whom it may concern:

Be it known that I, JOHN H. GOODFELLOW, of the city of Troy, in the county of Rensselaer and State of New York, have invented certain Improvements in Ash and Coal Sifting Devices for Stoves, Ranges, &c., of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 is a plan view of my improved sifting device, which embodies all the distinctive features of my invention. Fig. 2 is a central vertical section of Fig. 1, taken through the line *y y*. Fig. 3 is a central vertical section, showing my improved corrugated sifting-grate drawn out in an opposite direction to that of Fig. 1.

Like parts are marked by similar letters in the different figures.

In some cooking stoves and ranges heretofore made, the removable cinder-pan in the hearth-pit beneath the fire-grate has had a sliding grate for its bottom, which was vibrated horizontally to sift the ashes through it, and in those cases there could be but very short vibrations of the grate in its bottom, and such vibration required considerable waste space in its bottom and inclosed hearth-pit, and in the case of the sliding grate small bits of coal and cinders would fall and work in between the top side of the grate-bars and bottom edges of the front and rear of the cinder-pan, under which it slid, so as to soon prevent the sliding of the grate to and fro, except with great difficulty, and in order to obviate this it was necessary in those cases to form a blank space on each end of the grate-surface, to slide beneath the bottom edges of the front and rear of the cinder-pan or hearth-pit, and in that manner rob the grate of its sifting-surface. Also, said grate having a plain coal-surface, would only serve to carry the mass of cinders and ashes back and forth with it, simply settling them more compact upon the grate, requiring some length of time and extra exertion of the operator, to sift the ashes. And in some other cases the sliding grate has had the grate-bars running diagonally and at right angles to the direction in which the grate slid, so as to give a rough surface to the mass of mixed cinders and ashes thereon; but in those cases the cinders would settle

between the grate-bars, where they would, as well as the grate-bars themselves, form obstacles in the way of the shovel passing over the grate in removing the cinders therefrom; also that said grate, having its whole length on both sides resting on the flanges in the cinder-pan, could not be slid to and fro without great difficulty, because of the weight thereon causing much friction to the grate on account of the length of its bearing. If the same grate with bars running parallel with each other and its stroke were made in uneven curved surfaces or corrugated, as shown, with incline stationary clearing-fingers projecting downward and inward between the grate-bars, and on each end wall under which it slid, so as to thoroughly rub out all particles of coal or cinder, and keep clear the spaces between the grate-bars and had bearings only, by the bottom side of said corrugations resting on the slideways or flanges or lugs on the inner bottom edge of its frame or cinder-pan, there would be less friction to its movement, and sufficient agitating-surface to the mass of mixed cinders and ashes thereon, and there would be no difficulty in removing the cinders from its surface with a shovel.

The principal object of my invention is to produce a cheap and durable ash and coal sifter for stoves, ranges, &c., without any of the aforesaid defects.

One part of my invention, which is shown in the several figures of the drawing, consists of a sifting-grate having a series of corrugated bars running parallel with each other in such a manner that when said corrugated grate is reciprocated to and fro said corrugations will act as agitators, and will thoroughly stir up the mass of cinders and ashes, and the latter will be shaken down between the grate-bars into the hearth-pit or into a vessel therein. It also consists of the front and rear walls of a cinder-pan or grate-frame having stationary inclined fingers projecting down therefrom between the bars of a grate, so that when the grate is vibrated to and fro said fingers will throw out all particles of coal or cinders lodging between the grate-bars which would be likely to prevent its reciprocating movement were they not there. It also consists of a cinder-pan or

grate-frame having a corrugated grate in its bottom, and sliding beneath the front and rear edges thereof, as described. It also consists of cinder-pan or grate-frame having suitable flanges or lugs formed on the inner bottom edges thereof for slideways and supporting my said improved corrugated reciprocating grate. It also consists of a suitable shaker-rod or handle made to engage with the grate, as hereinafter described.

A is the hopper of the sifting-grate, having suitable sides *b b'*. C C' are stationary end walls, having the inclined clearing-fingers *t t* attached thereto and projecting down between the grate-bars into the spaces *u u* of the grate. X X are flanges, lugs, or slideways formed on the inner bottom edges of the sides *b b'*. E is the grate, having corrugated bars *a* running parallel with each other. *h* is the bottom edges of the front and rear stationary end walls; and H the handle attached to the shaker-rod *s*, having the hook *r* formed on its end.

The sifter-frame may have journals attached to the stationary end walls and made to dump, and also the sides *b b'* may be dispensed with in some cases, and the grate end walls C C' placed within a range beneath a fire-grate, and having the slideways or lugs X X formed on the inside of the ash or hearth pit in such a manner that the grate can be reciprocated lengthwise of said pit to sift the ashes through it; and in that case the cinders and ashes which shall fall or be dumped from the fire-chamber will lodge on the sifting-grate E, and by reciprocating said grate back and forth by the rod *s* and handle H, the corrugations on said grate, acting as agitators, will thoroughly stir up the mass thereon, and the latter will be shaken down between the bars into the pit beneath or a vessel therein, and the fingers *t t* will keep

the spaces *u u* between the bars, making its movement free and easy; also that said grate, sliding on the flange X X, and its corrugations only forming its bearing, there is less friction to its movement than in other cases; also that said grate may form the bottom of a reciprocating cinder-pan, in which the above results might be attained, as the irregular surface of its bottom would more thoroughly agitate the coal thereon and separate the ashes therefrom.

As regards my improved corrugated sifting device, it can be made and applied in any of the known ways applicable to stoves, ranges, and other devices wherein sifters are used for sifting other substances than those described.

Having a pending application embracing the idea of a reciprocating flat grate with one stationary and one swinging end wall, the former provided with clearing-fingers, I of course do not wish to be understood as claiming such construction in this application; but

What I claim as new, and desire to secure by Letters Patent, is—

1. The grate E, composed of parallel corrugated bars divided by longitudinal spaces, in combination with, and adapted to reciprocate between and beyond, the lower edges of the end walls of the grate-chamber, whereby the coals resting upon the grate are, by the corrugations thereon, caused to lift and fall during the reciprocation thereof, substantially as and for the purpose described.

2. In combination with the end walls C C', the corrugated sliding or reciprocating sifting-grate E and clearing-fingers *e*, substantially as and for the purpose set forth.

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