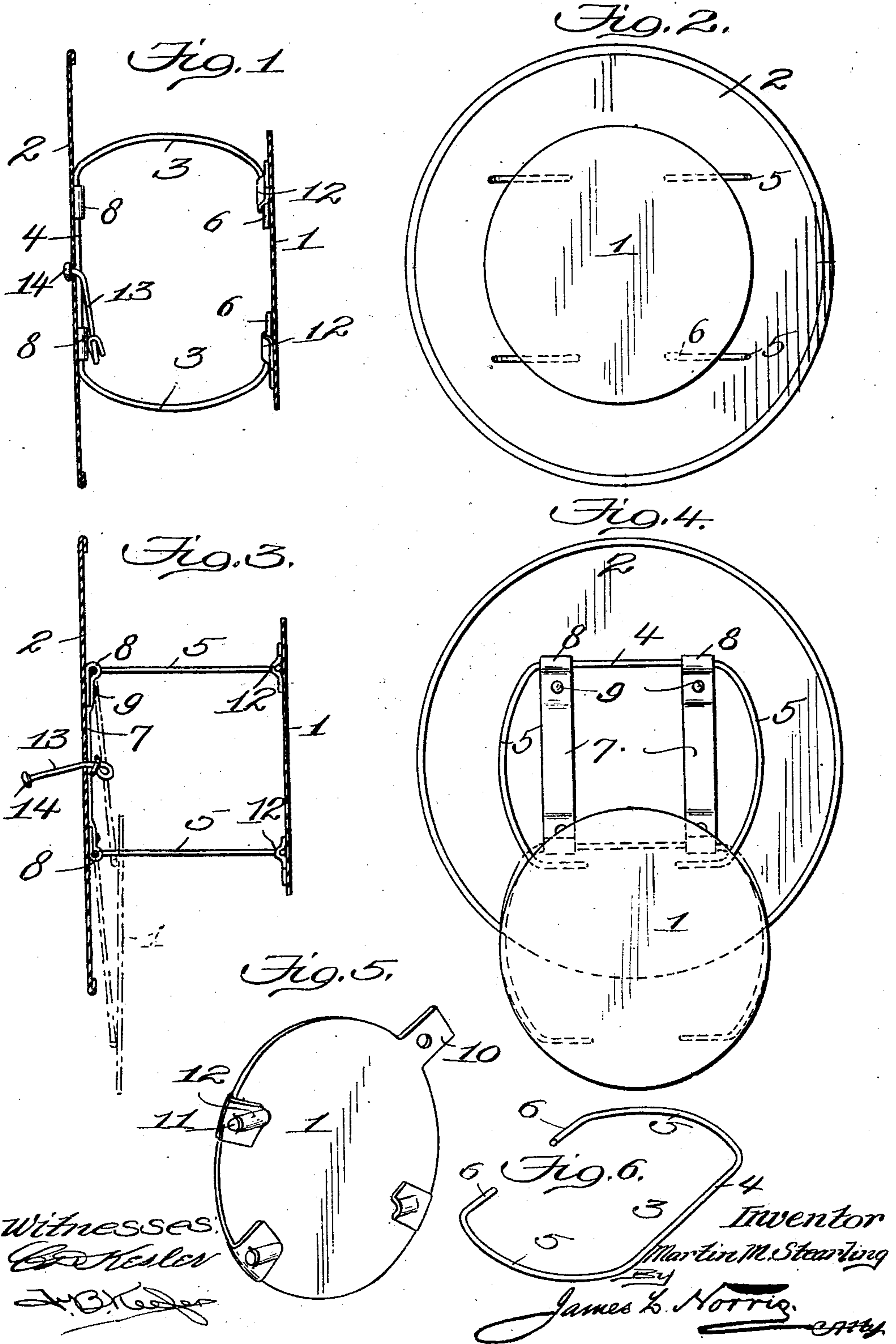


M. M. STEARLING.  
FLUE STOPPER.  
APPLICATION FILED AUG. 6, 1908.

Patented Mar. 9, 1909.

914,988.



# UNITED STATES PATENT OFFICE.

MARTIN M. STEARLING, OF MISSOULA, MONTANA.

## FLUE-STOPPER.

No. 914,988.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed August 6, 1908. Serial No. 447,333.

*To all whom it may concern:*

Be it known that I, MARTIN M. STEARLING, a citizen of the United States, residing at Missoula, in the county of Missoula and State of Montana, have invented new and useful Improvements in Flue-Stoppers, of which the following is a specification.

My present invention relates to improvements in devices for closing or stopping flue openings in walls, ceilings or other places, and it has for its object primarily to provide a simple and improved device of this character which comprises inner and outer plates, the inner plate being adapted to enter the flue opening and is connected to the outer plate by means of links which permit the plates to be folded into a compact form when not in use and to be again extended or arranged in proper relation to enter the flue opening, the links permitting a parallel motion of the plates without the necessity of connecting or disconnecting any of the parts of the device.

A further object of the invention is to provide improved means for attaching the connecting links to the plates.

To these and other ends, the invention consists in certain improvements, and combinations and arrangements of parts, all as will be hereinafter more fully described, the novel features being pointed out particularly in the claims at the end of the specification.

In the accompanying drawing:—Figure 1 is a sectional view taken longitudinally through a flue stopper constructed in accordance with my present invention, the plates being shown in operative relation; Fig. 2 is a view of the device shown in Fig. 1 looking at the same from the right; Fig. 3 is a sectional view of the device taken on a plane at right angles to the plane of the section shown in Fig. 1, the dotted lines indicating the relative positions of the parts when the two plates are in folded relation; Fig. 4 is a rear view of the device showing the plates folded; Fig. 5 is a perspective view of the rear plate showing the means provided thereon to engage the connecting links between the plates; and Fig. 6 is a perspective view of one of the bow-shaped connecting links.

Similar parts are designated by the same reference characters in the several views.

The flue stopper shown in the present instance comprises a rear plate 1 which is of

a diameter to fit within the ordinary flue opening, and a forward or outer plate 2 which is preferably of a greater diameter than that of the rear plate so as to overlap the wall surrounding the flue opening and thus provide a seal for the opening and also covering the wall immediately surrounding the opening which is usually soiled by the soot, the two plates being connected for parallel motion by means of a pair of links 3. These links are preferably bow-shaped, as shown in Fig. 6, each comprising a straight intermediate pivot portion 4, a pair of arms 5 and a pair of inturned pivot portions or pintles 6 which are formed at the extremities of the respective arms, each bow being preferably formed of round wire of suitable gage. These links are preferably attached to the rear side of the front plate by means of hinge straps 7, each of which is composed of a flat strip of metal having its opposite ends folded and rolled to provide bearings 8 to receive the pintle or pivot portions 4 of the respective links, the bearings on both straps being spaced equidistantly and are in axial alinement so that the links turn on parallel axes. These hinge straps are secured to the front plate preferably by means of the rivets 9 which pass through the double ends of the respective straps and thereby secure such ends.

The rear plate 1 is preferably provided with a set of lugs or ears 10 which are preferably formed integrally with this plate and are turned inwardly from its periphery so as to overlap the forward face thereof. Each of these lugs is provided with an aperture 11 and with a channel portion 12, the apertures and channels of the lugs being arranged in axial alinement with each pair of lugs and are adapted to receive the inturned pintles 6 of the respective connecting links for the plates, these inturned pintles being introduced into the respective apertures by temporarily springing apart the arms of each link. In Fig. 5, one of these lugs is shown prior to its being channeled and folded inwardly over the face of the plate 1. The pintles 6 of the links are thereby attached to the inner plate on axes arranged parallel and spaced apart a distance equal to the distance between the intermediate pintle portions 4 attached to the forward plate 2 so that when the device is being packed for shipment or is stored away when not in use, the rear plate is

capable of folding flatwise against the forward plate without the necessity of detaching or manipulating any of the connections between the two plates, and when it is desirable to apply the device to a flue opening, it is only necessary to swing the rear or smaller plate from its folded position into a position immediately in the rear of the center of the forward plate, the device being then in condition for application to the flue opening. In order to provide a firm fit for the stopper so as to prevent it from accidentally jarring loose, the arms of the two links are preferably bowed or curved outwardly, as shown, so as to engage the walls of the flue opening with a yielding pressure.

In order to facilitate the removal of the stopper from the flue opening, a wire 13 is preferably fitted in a central opening formed in the front plate, this wire being provided with an enlargement at its rear end to abut against the rear side of the front plate when the wire is withdrawn, and it is provided with a small head 14 which is slightly exposed at the front of the plate 2 so as to enable the wire to be drawn out and thereby provide a convenient grip for the hand so that the stopper may be withdrawn or removed with facility.

A flue stopper constructed in accordance with my present invention is composed of a few parts which are simple in construction so that the device may be manufactured cheaply, and in practice, it is capable of being manipulated with the greatest facility in folding it for shipment or storage and in adjusting it to fit into the flue, the bow-shaped links being so connected to the plates as to provide a parallel motion between them, it being unnecessary to detach or disconnect any part in order to fold or otherwise adjust the plates.

I claim as my invention:—

1. A flue stopper comprising a pair of relatively foldable plates, one adapted to enter the flue, and means connecting the plates and insuring an opening movement thereof in parallelism.

2. A flue stopper comprising front and rear plates, the latter adapted to enter a flue, and means connecting the plates and insuring a folding movement thereof in parallelism.

3. A flue stopper comprising a pair of co-

operatively arranged plates, and links connecting them for maintaining the plates in parallelism while in operative and inoperative positions.

4. A flue stopper comprising a pair of front and rear plates, and a pair of links pivotally connecting the plates, the pintle portions of one link being arranged in parallelism with those of the other link.

5. A flue stopper comprising front and rear plates, and a pair of links pivotally connecting the plates for insuring opening and folding movements of the plates while the plates remain in parallelism.

6. A flue stopper comprising front and rear plates, one of the plates having a pair of hinge straps secured thereto, each strap having its opposite ends doubled to form bearings, a pair of bow-shaped links having intermediate pivot portions engaging the bearings of said hinge straps and having terminal pintles pivotally engaging the other plate, and means for securing the doubled ends of the hinge straps and for attaching said straps to the respective plate.

7. A flue stopper comprising a pair of co-operatively arranged plates, one of the plates having pairs of lugs folded inwardly from its peripheral edge and having aligned apertures and channels, and a pair of bow-shaped links having parallel pivot portions engaging one plate and provided with interturned pintles arranged to engage the apertures and cooperating channels formed in the lugs of the other plate.

8. A flue stopper comprising front and rear plates, the rear plate being adapted to enter a flue, a pair of bow-shaped links connecting the plates for insuring folding and opening movements thereof in parallelism, the arms of the links being curved outwardly to frictionally engage the walls of the flue opening, and a wire passing through an aperture in the forward plate and provided with a head which is accessible for manipulation from the front of the forward plate.

In testimony whereof I have hereunto set my hand in presence of the subscribing witnesses.

MARTIN M. STEARLING.

Witnesses:

A. J. VIOLETTE,  
W. B. BROOKS,  
DANIEL H. ROSS.