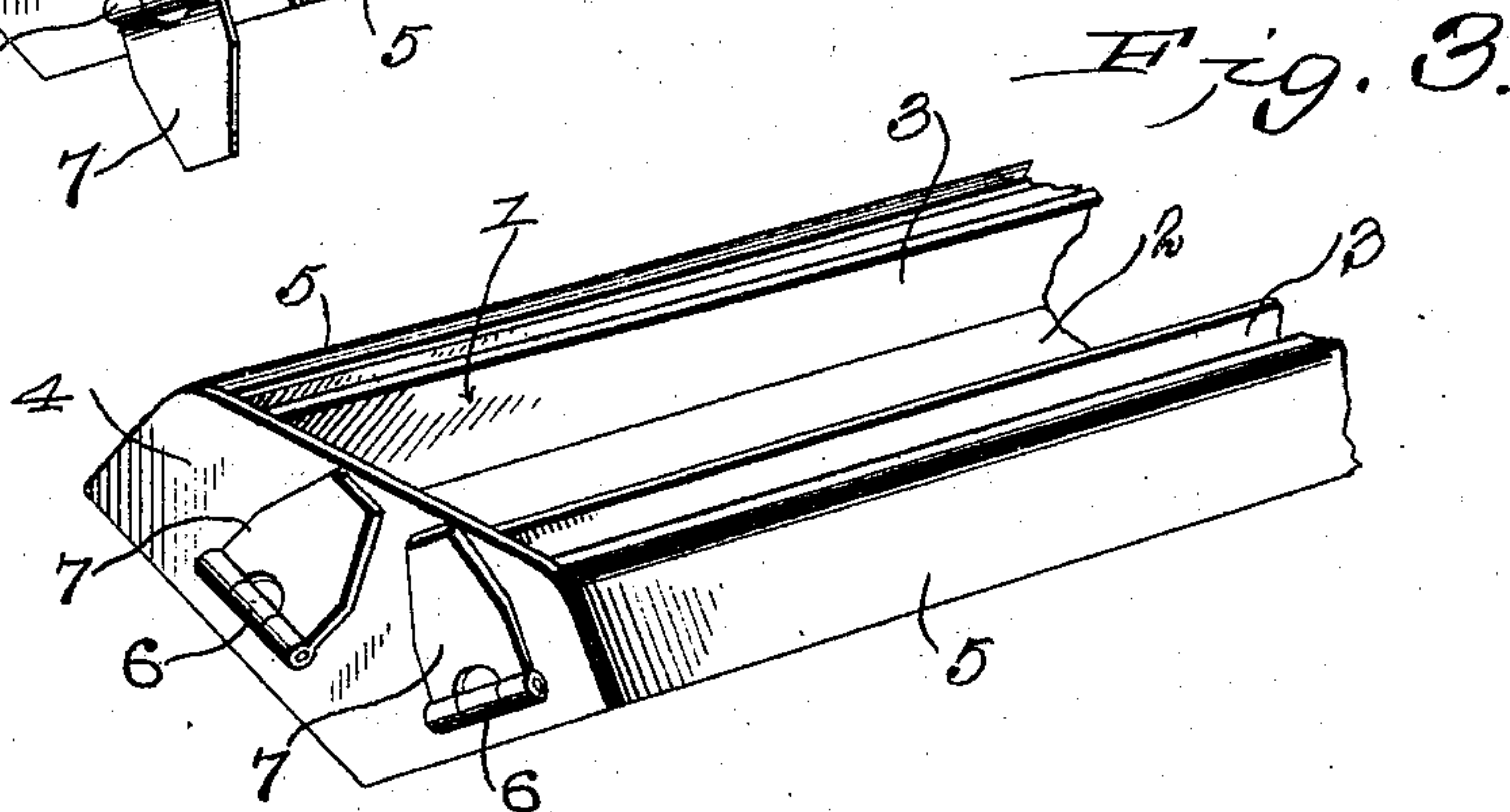
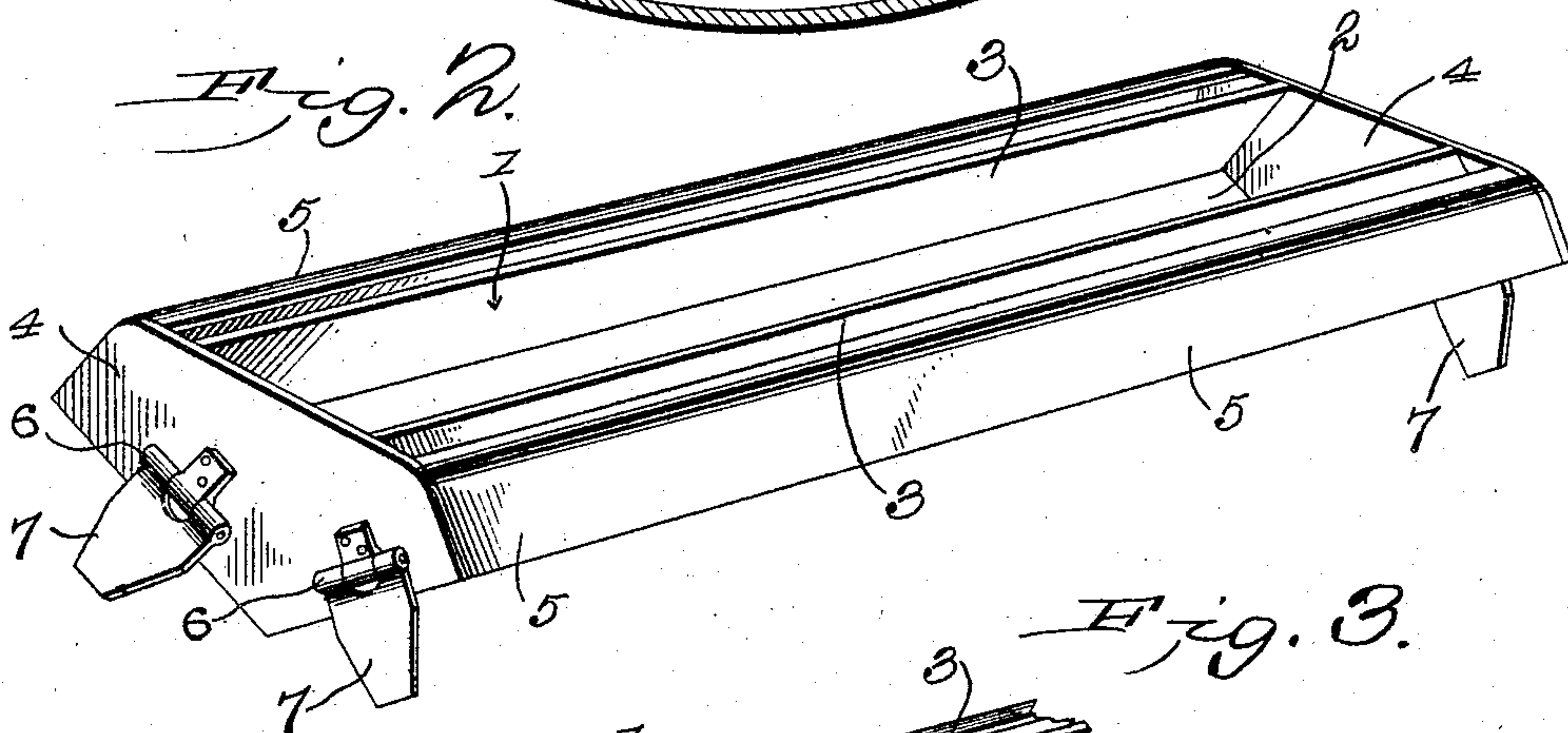
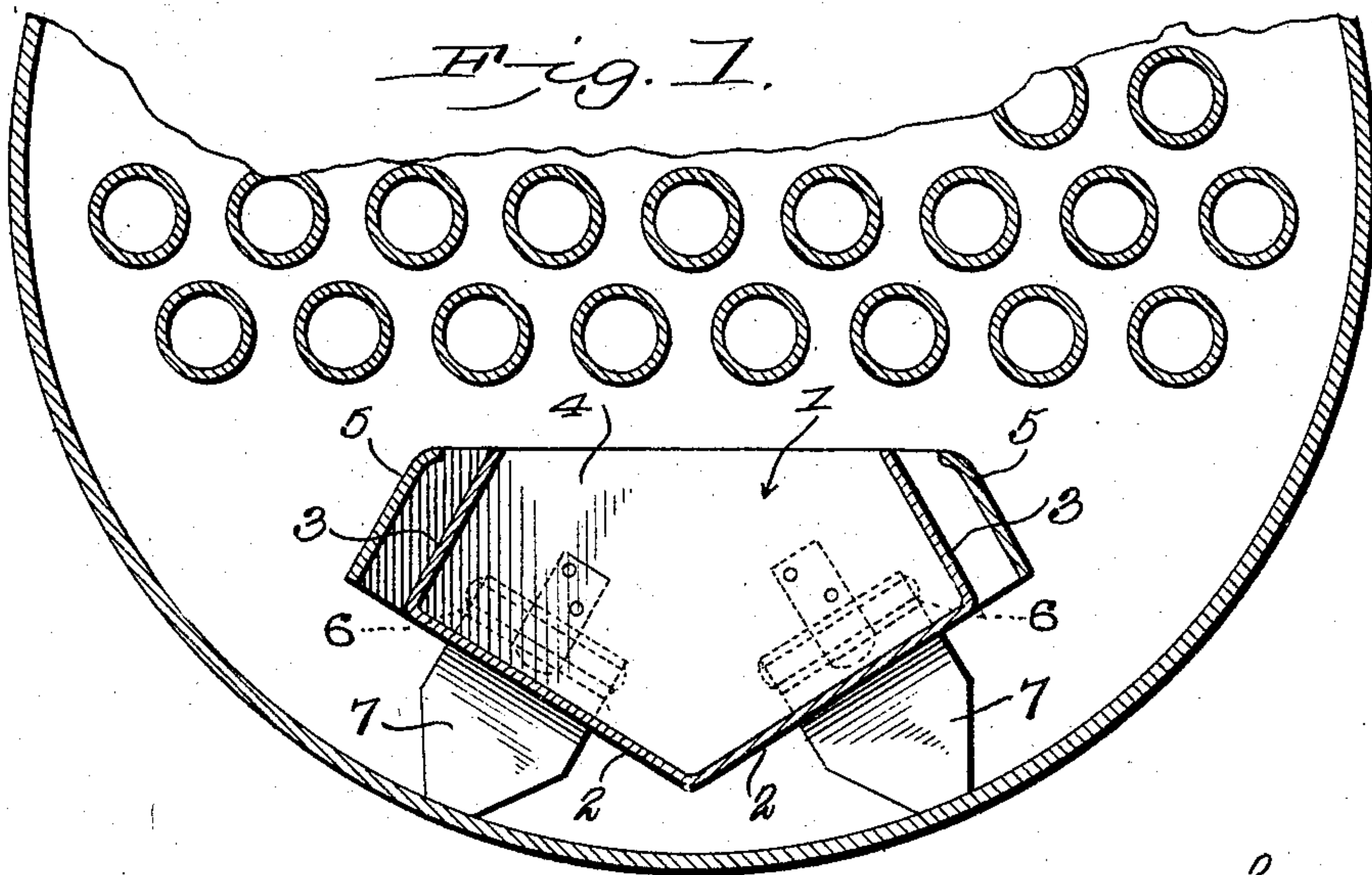


No. 782,314.

PATENTED FEB. 14, 1905.

H. H. BALTZLEY.  
SEDIMENT COLLECTOR FOR BOILERS.  
APPLICATION FILED AUG. 5, 1904.



Witnesses  
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# UNITED STATES PATENT OFFICE.

HENRY H. BALTZLEY, OF ASSUMPTION, ILLINOIS, ASSIGNOR OF ONE-HALF TO JOHN D. BALTZLEY, OF ASSUMPTION, ILLINOIS.

## SEDIMENT-COLLECTOR FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 782,314, dated February 14, 1905.

Application filed August 5, 1904. Serial No. 219,682.

*To all whom it may concern:*

Be it known that I, HENRY H. BALTZLEY, a citizen of the United States, residing at Assumption, in the county of Christian and State of Illinois, have invented a new and useful Sediment-Collector for Boilers, of which the following is a specification.

This invention relates to devices adapted to be inserted into steam-boilers for the purpose of collecting impurities in the water—such as mud, scales, lime, and the like—and thereby prevent deposit of such impurities in the bottom of the boiler.

The object of the invention is to provide a sediment-collector the side walls of which are provided with spaced parallel flanges forming a plurality of converging channels through which the water flows to the sediment-trough.

A further object has reference to the supporting means for the collector-trough; and it includes a pair of supporting-legs hinged upon each end piece of the trough and adapted to be folded upwardly against said end piece to thereby permit the trough to be readily inserted into a boiler and the legs to be swung downward to support the trough upon its insertion into the boiler.

The invention consists in the combination and arrangement of parts, as will be seen from the following description and claims and shown in the accompanying drawings, in which—

Figure 1 shows in perspective a vertical central section of a boiler with my improved collector inserted therein. Fig. 2 shows a perspective view of the collector removed from the boiler, and Fig. 3 is a detail view of one of the end pieces with the supporting-legs folded flat up and against the ends of the trough.

The collector in detail consists of a metal trough 1, having a bottom 2 of an extended V shape and sides 3 3 extending upwardly and inwardly from the V-shaped bottom and at about a right angle thereto. In the present instance the bottom and sides are formed from a single sheet of metal, the metal being first bent to form an angle of approximately one hundred and twenty degrees, the sides being then

bent upon themselves inwardly at an angle of approximately ninety degrees, thus partially closing the open top of the trough. The ends of the trough are closed by pieces of metal 4, soldered or otherwise fastened thereto and of a shape similar to a cross-section of the trough, said ends 4 extending on both sides beyond the sides 3 3 and having fastened at their ends by solder or other means flanges 5 5, parallel to the sides 2 and 3. Owing to the extension of said ends 4 beyond the sides 3, a space or water-channel will be formed between the flanges 5 and sides 3 on each side of the trough. It will be apparent that owing to the partially-closed top the sediment is more completely retained in the trough.

Fastened on each end piece 4 by means of hinges 6 are two legs 7, the arrangement being such that on the insertion of the collector into the manhole of a steam-boiler the legs 7 can be folded upwardly to lie flat against the ends 4, thus making the entire device of much less compass and rendering its insertion into the boiler much more readily accomplished. After its insertion into the boiler the legs 7 are swung downwardly from the ends 4 and the device thus completely supported within the boiler upon said legs.

In operation the heated water in the boiler passes up between the sides 3 of the trough proper and the flanges 5, and the sediment contained in the water falls into the trough and is therein collected.

It will be readily apparent from the above description that by means of a device of this character the sediment contained in the water can be easily collected and removed from the boiler and all danger of deposits and subsequent incrustation from such sources eradicated.

The device is of course subject to slight modification and change, and I intend to include such in the present claims as being within the scope of my invention.

The members 5, which converge toward their upper edges, serve as deflectors and at the same time fenders and cooperate with the upwardly-convergent side walls of the recep-



tacle to induce the settlement of sediment in the receptacle and prevent its subsequent disturbance and displacement by the subsequent agitation of the water. Moreover, the effect  
 5 of these deflectors or fenders is increased by the inturned lips at the upper edges thereof, which serve to reduce to some extent the violence of the agitation of the water in passing  
 10 upward between the deflectors and the side walls of the receptacle, so that as the water after having traversed the restricted passages passes inward over the receptacle it is in a condition to deposit the sediment. The agitation thereof is not sufficiently violent to  
 15 hold the sediment in suspension. The general direction of the passages thus formed between the deflectors and the side walls of the receptacle is such as to cause the water after traversing the same to flow inwardly over the receptacle, and in the continued circulation of  
 20 the water through the boiler practically all of it will traverse these passages and pass over the receptacle. The upward deflection or divergence of the portion of the bottom of the receptacle also cooperate with the deflectors, and in practice the water in passing upward in contact with the lower surface of the  
 25 bottom of the receptacle will strike the lower edges of the deflectors and will be by them diverted into the upwardly-extending passages, thus forming what may be termed an "eddy" and immediately checking the rapidity  
 30 of movement of the water, so that by the time the water reaches the inturned lips and is by them thrown inward over the receptacle the motion of the water is so slow as to insure the practically complete deposit of any solid substances which may have been held in suspension.

40 Having thus described the invention, what is claimed is—

1. A sediment-collector comprising a receptacle, and means carried by the receptacle and spaced laterally from the side walls thereof  
 45 for retarding the movement of the water adjacent thereto.

2. A sediment-collector comprising a receptacle having vertical end walls and upwardly-converging side walls, and deflectors spaced  
 50 laterally from the side walls of the receptacle.

3. A sediment-collector comprising a receptacle having a V-shaped bottom and water-deflecting means disposed on each side of the receptacle and spaced laterally from the side  
 55 walls thereof.

4. A sediment-collector comprising a receptacle, and means disposed on each side of the receptacle and secured to the side walls of the

latter for directing and impeding the movement of water adjacent thereto. 60

5. A sediment-collector comprising a receptacle provided with upwardly-converging side walls, and oppositely-disposed deflectors spaced from the side walls of the receptacle and defining water-passages the outlets of  
 65 which are restricted.

6. A sediment-collector comprising a receptacle provided with upwardly-converging side walls, and oppositely-disposed deflectors arranged adjacent to said side walls. 70

7. A sediment-collector comprising a receptacle having a V-shaped bottom and provided with upwardly-converging side walls, and deflectors carried by the receptacle and spaced laterally from the side walls thereof. 75

8. A sediment-collector comprising a receptacle provided with an inclined bottom and upwardly-converging side walls, and means disposed parallel with the side walls of the receptacle for deflecting the water into the latter. 80

9. A sediment-collector comprising a receptacle having upwardly-converging deflectors disposed parallel with and spaced from the side walls of said receptacle.

10. A sediment-collector comprising a receptacle having upwardly-extending deflectors disposed adjacent to and spaced from the side walls thereof, said deflectors having inturned lips at their upper edges. 85

11. A sediment-collector, comprising a receptacle having upwardly-converging deflectors disposed parallel with and spaced from the side walls thereof, and supporting-feet pivoted to said receptacle. 90

12. A sediment-collector comprising a receptacle having water-deflecting means disposed on each side thereof, and supporting-feet pivoted to said receptacle. 95

13. A sediment-collector, comprising a receptacle provided with an inclined bottom and upwardly-converging side walls, supporting-feet pivoted to the opposite ends of the receptacle and means for deflecting the water into the latter. 100

14. A sediment-collector, comprising a receptacle having an upwardly-converging bottom, deflectors spaced from the side walls of the receptacle, and supporting-feet pivoted to the opposite ends of said receptacle. 105

In testimony that I claim the foregoing as  
 110 my own I have hereto affixed my signature in the presence of two witnesses.

HENRY H. BALTZLEY.

Witnesses:

GEORGE HUTCHINSON,  
 JOHN M. HOLMES.