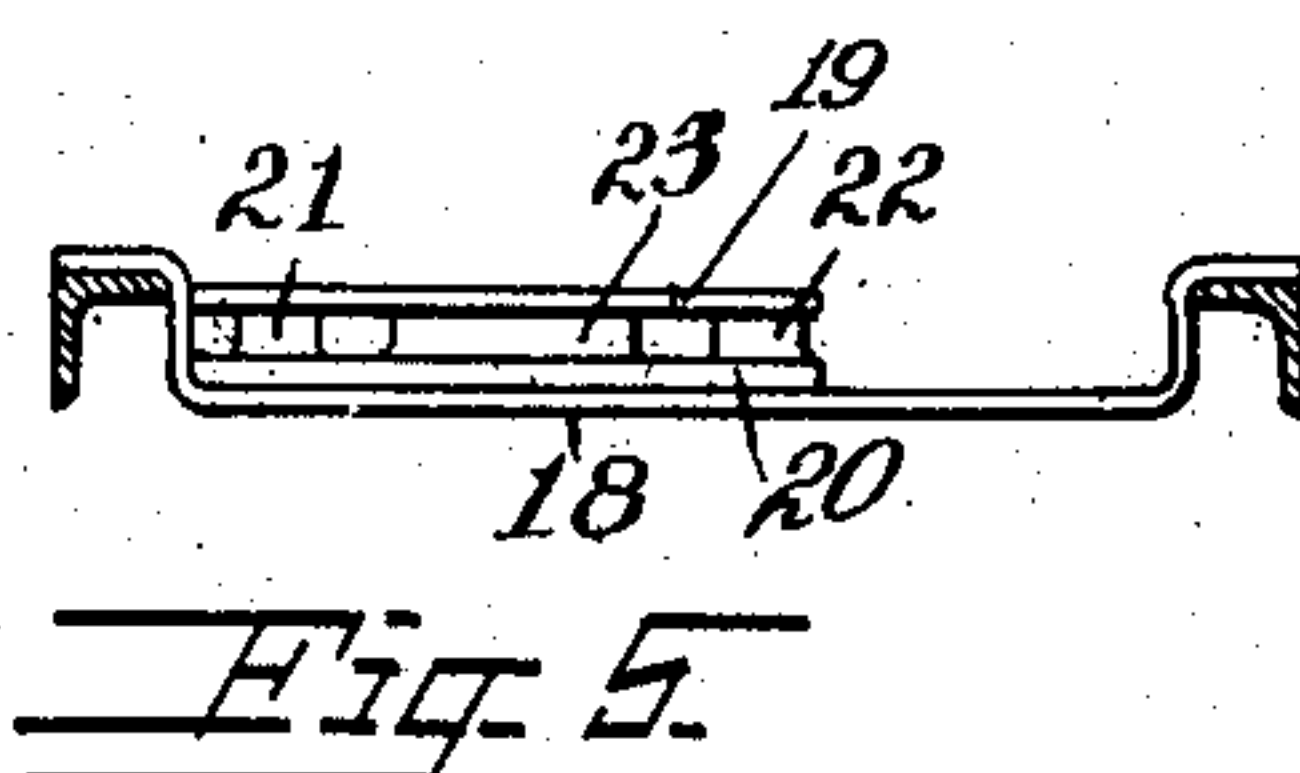
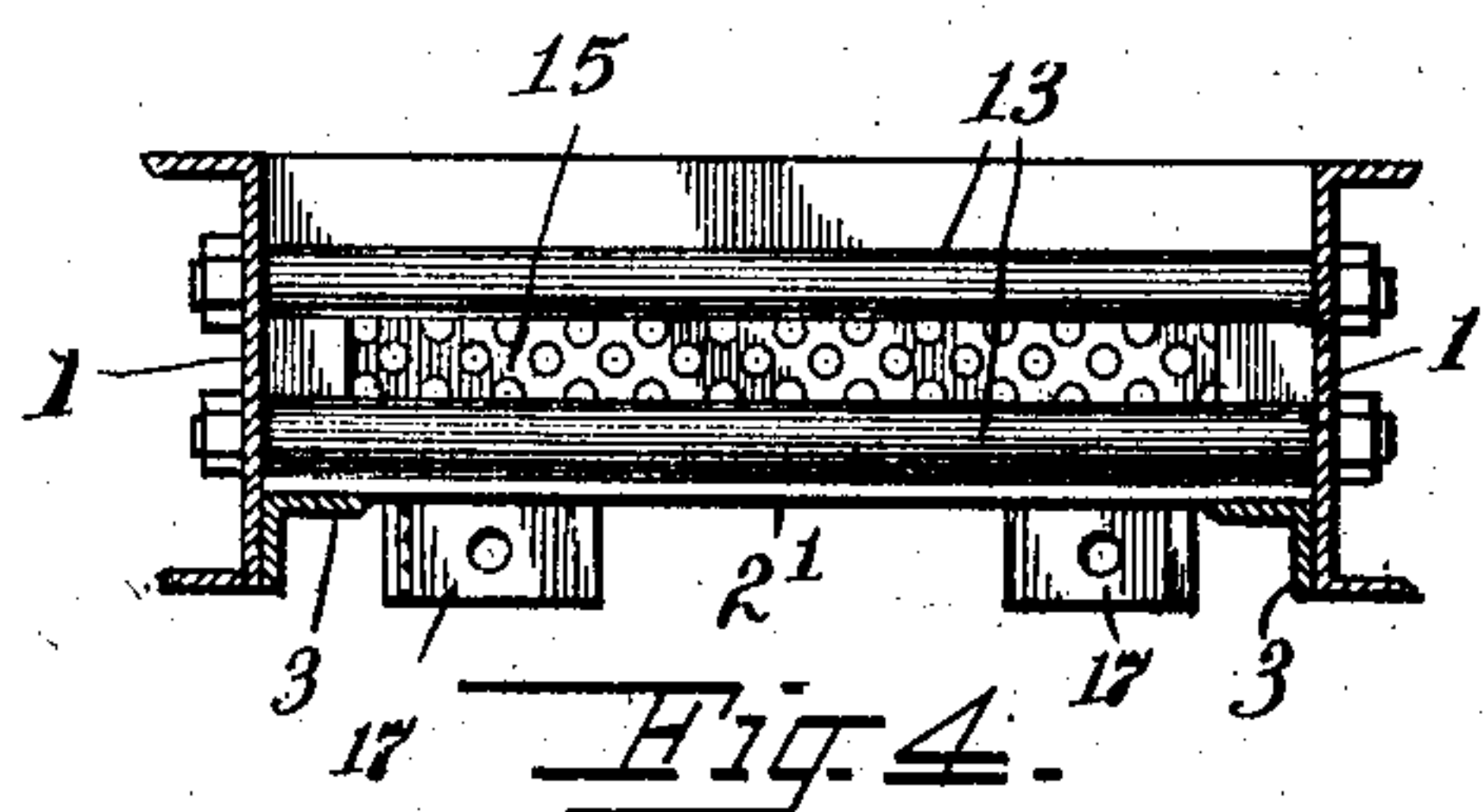
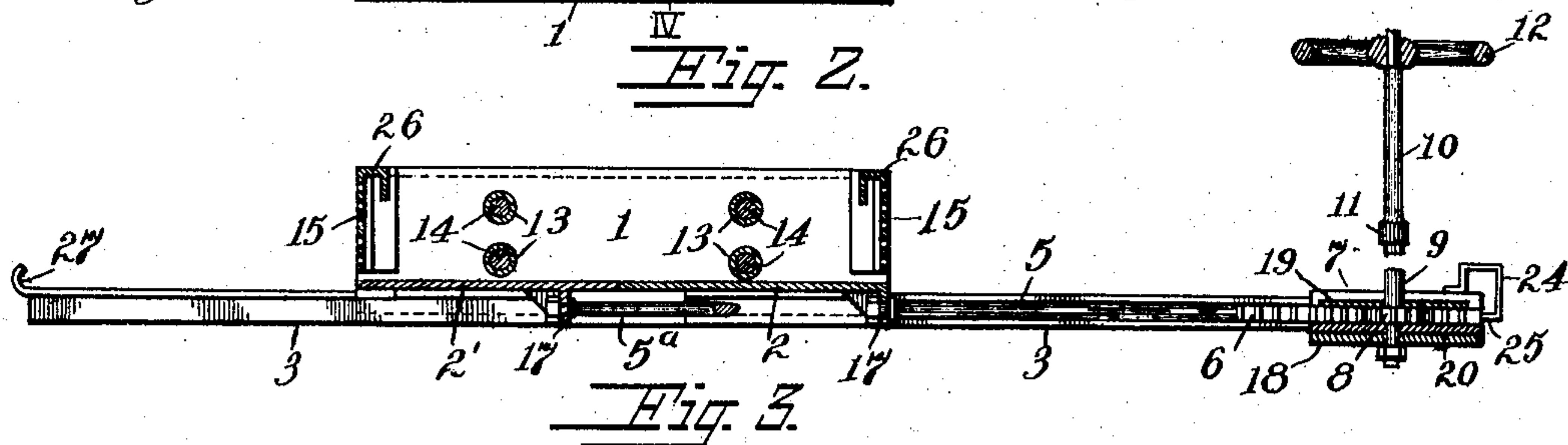
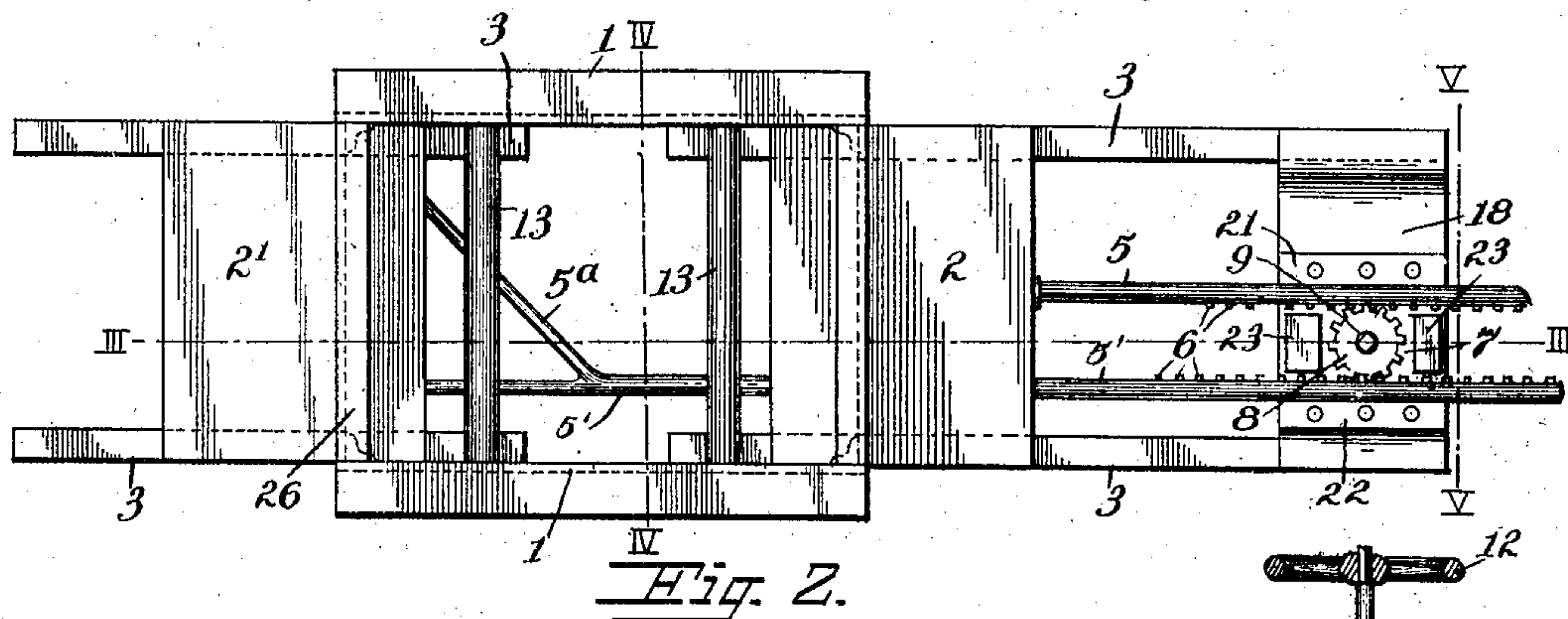
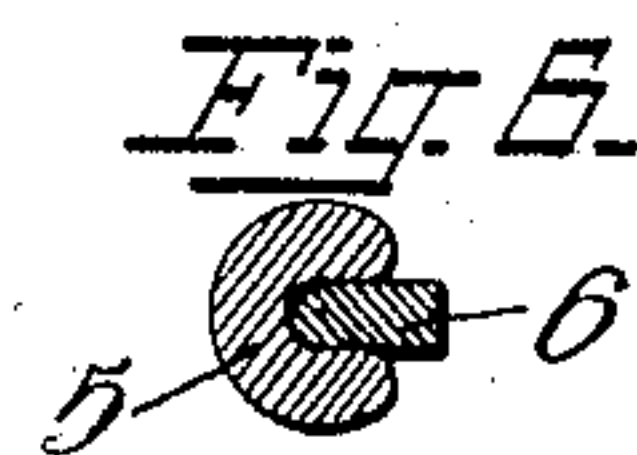
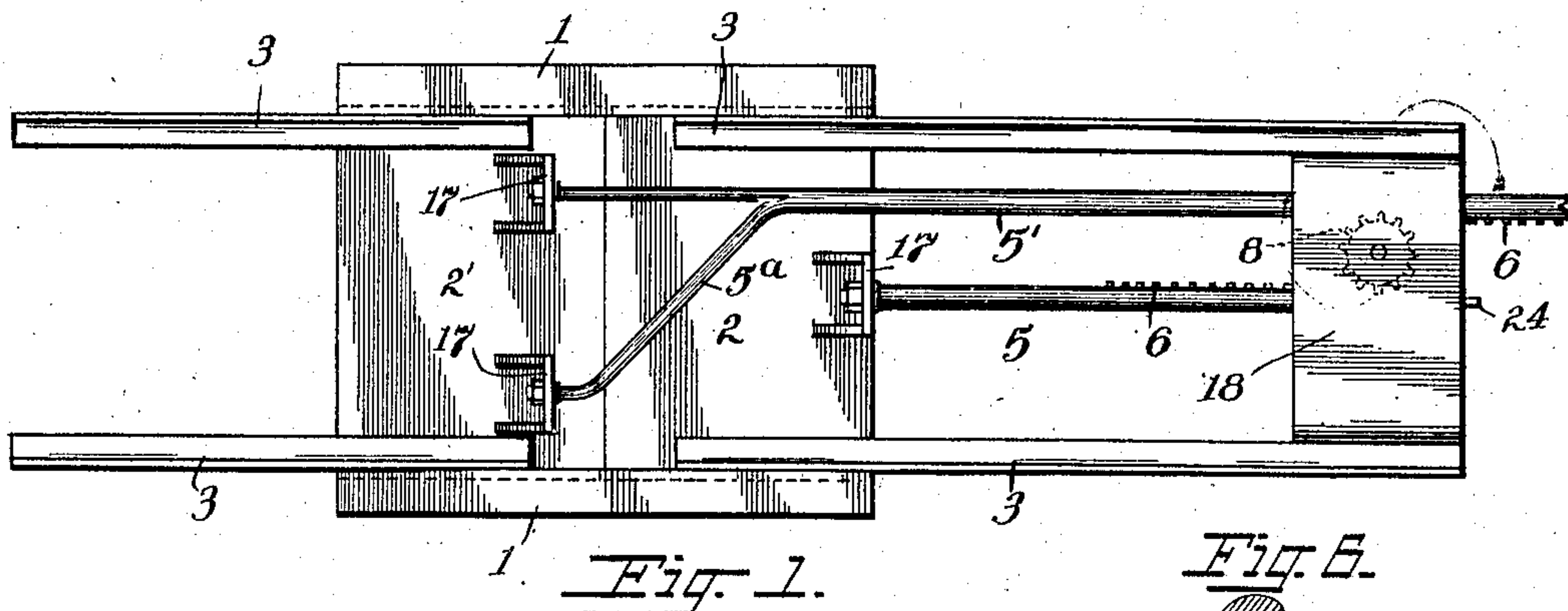


No. 791,185.

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F. CRIS.  
ASH PAN.

APPLICATION FILED JAN. 14, 1904.



Witnesses  
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# UNITED STATES PATENT OFFICE.

FRANK CRIS, OF LIMA, OHIO.

## ASH-PAN.

SPECIFICATION forming part of Letters Patent No. 791,185, dated May 30, 1905.

Application filed January 14, 1904. Serial No. 189,029.

*To all whom it may concern:*

Be it known that I, FRANK CRIS, a citizen of the United States, and a resident of Lima, in the county of Allen and State of Ohio, have invented a new and useful Improvement in Ash-Pans, of which the following is a specification.

My invention relates to an improvement in locomotive ash-pans, the object being to provide for the removal of ashes and cinders without the necessity of the usual raking which is performed by the fireman in cleaning out the ash-pan; and my invention consists in means for simultaneously opening or closing the two sliding sections of the bottom of the ash-pan by merely turning a shaft, which is arranged and intergeared to operate and control said sections from the cab of the locomotive.

My invention further consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a bottom plan view of my improvement in locomotive ash-pans detached from a locomotive and showing the sectional bottom in closed position. Fig. 2 is a top plan view of the same, showing the sections of the bottom in open position, plate 19 being removed to disclose the gear and racks. Fig. 3 is a vertical longitudinal sectional view taken on the line III III of Fig. 2. Fig. 4 is a detail view in cross-section, taken on the line IV IV of Fig. 2, parts being omitted. Fig. 5 is a detail view in cross-section on the line V V of Fig. 2, showing the saddle-plate and cooperating parts; and Fig. 6 is a detail view in cross-section of one of the toothed rods, showing a slight modification.

The sides 1 1 of the ash-pan are preferably made of channel-iron, provided with projecting shoulders 3 3, forming tracks, and the sections 2 2' of the bottom are preferably of cast-iron half-inch plates, they being slidably supported on the angle-iron tracks 3 3, on which they are adapted to move in and out in the operation of cleaning the ash-pan. The tracks 3 3 may preferably consist of angle-irons secured to the channel-irons and

which extend some distance beyond the channel-irons at either end to form extension-tracks for the support of the sliding bottom plates when in open position. Connected to the bottom sections 2 2' are the rods 5 5'. Rod 5 is removably secured to a hollow depending lug 17, centrally located on the bottom plate 2, and rod 5' is removably secured to a similar lug at one side of the bottom plate 2', the last-named rod provided with an offset extension 5<sup>a</sup>, the end of which is secured to a hollow lug on the opposite side of the bottom plate 2', the sides of the hollow lugs on plate 2' adapted to slidably engage the angle-iron tracks 3 3 to guide the bottom plate 2' in its reciprocatory movement. The rods have rack-teeth thereon at their opposite ends and extend through a box 7, in which they are guided, a pinion 8 being located in said box and having its teeth in engagement with the rack-teeth.

The box is supported upon a saddle-plate 18, U-shaped in cross-section, the ends of which plate are received and rest upon the angle-iron tracks 3 3, to which the plate is secured. The box 7 is preferably located to one side of the center of the saddle-plate, although this is not essential, the box comprising two plates 19 and 20, between which is journaled a gear-wheel or pinion 8, and two guides 21 and 22 are secured one on either side of the gear-wheel 8. Located intermediate the guides and on opposite sides of the gear-wheel 8 are the space-bars 23 23, which protect the gear-wheel from injury and prevent the entrance into the box of material liable to impede or obstruct the operation of the mechanism. The bars 23 also serve to retain the box rigid and support the upper plate 19. The toothed ends of the rods 5 5' are received one on either side of the pinion 8, with which the teeth on the rods mesh, and the rear plane surfaces of the rods slidably engage the guides 21 and 22, which serve also to retain the teeth of the rods in mesh with the pinion.

A gage 24 is secured to the end of one or both of the rods 5 5' and consists of an angular member provided with an end 25, secured



in any suitable manner to the end of the rod, the opposite end of the gage extending over the top of the box 7, where it may be observed by the engineer or fireman to ascertain if the ash-pan is closed. In the event that the engineer should desire to increase the draft he could open the bottom plates of the ash-pan a greater or less distance, as indicated by the gage. The gage also serves as a stop to limit the movement of the rod to which it is attached, by engaging the plate 19 when the rod is moved in one direction. A shaft 9, journaled in the box, carries the pinion 8. The upper end of the shaft preferably stops about flush with the floor of the locomotive and is angular to receive the removable shaft extension 10, which has a socket 11 on its lower end to fit the angular upper end of shaft 9. This shaft extension has a wheel 12 on the upper end, by which it is turned. In this way when it is desired to clean the ash-pan the extension is put in place on the upper end of shaft 9 and turned, the bottom sections receding from each other simultaneously and letting fall the ashes between them, after which by reversing the direction of movement of the shaft extension the bottom plates are moved inwardly toward each other and the bottom closed.

To prevent ashes from catching between the bottom plates, the angle-iron tracks 3 3 terminate a short distance from each other at their inner ends—say six inches apart—so that when the bottom sections close any ashes catching on these angle-irons are brushed aside and dropped between the ends of the angle-irons in advance of the bottom plates, thereby clearing the way and permitting the bottom plates to come together at the center.

The sides 1 1 of the ash-pan are preferably braced and held apart by pipes or tubes 13 13, four in all, through which rods or bolts 14 14 extend, having nuts for securing them in place, the nuts and heads being protected from injury by the channeled sides.

Angle-irons 26 26 are located at the ends of the ash-pan, which angle-irons extend across from side to side of the pan, and depending from these angle-irons are the perforated plates 15 15, forming the ends of the ash-pan, the lower edge of the plates 15 15 preferably terminating about half an inch or so from the bottom plates 2 2' in order that there may be no scraping noise. These end plates serve to hold the ashes in the pan until the bottom plates have receded from one another far enough to permit the ashes to drop out of the pan. By having these end plates perforated they do not interfere with the draft when the engineer opens the damper.

The extreme ends of the tracks 3 3 opposite the saddle-box are upturned, as shown at 27, to limit the outward movement of the bottom plate 2', the engagement of the ad-

jacent edges of the sliding plates 2 2', together with the engagement of the gage 24 with the plate 19, serving to limit the inward movement thereof.

From the foregoing it will be seen that I have provided a simple locomotive ash-pan which can be easily and quickly operated from the locomotive at a great saving of time and labor, while at the same time performing the operation most effectively. At the same time the cost of equipping a locomotive with my improvement is comparatively slight.

In some instances cast-iron may not be used, and I can therefore use sheet-iron plates, which will be braced by angle-irons, and in the event that steel should prove too expensive it is possible to form the toothed portion of the operating-rods of cast-iron, the teeth being formed on a bar received in a recess formed in the rods, as shown in the detail cross-sectional view.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An ash-pan comprising channel-iron sides, bolts extending across from side to side, tubes mounted on the bolts, the ends of the tubes engaging the inner surfaces of the sides, angle-irons extending across from side to side, perforated plates depending rigidly from the angle-irons, tracks secured to the sides, a bottom comprising a plurality of plates movably supported on the tracks and means for moving the plates toward and from one another.

2. The combination with an ash-pan provided with rails, and a plurality of plates received and slidable upon the rails, of toothed rods secured to the plates and extending in the same direction and parallel with each other, means engaging the teeth of the rods to move the latter in opposite directions to separate the plates, a stationary member in which the outer ends of the rods and the rod-engaging means are supported and a stop secured to one of the rods and extending in a direction out of alinement therewith, the stop adapted to engage the stationary member to assist in limiting the movement of the rods and prevent their disengagement from the operating means in the inward movement of the plates.

3. An ash-pan comprising sides and ends, tracks mounted on the sides, a bottom slidably mounted on the tracks, the bottom consisting of a plurality of plates, the tracks extending from either end of the pan, means at



one end of the track to limit the outward movement of one of the plates, a saddle-plate supported upon the tracks, a gear journaled in the saddle-plate, guides on either side of the gear, and means connected with the plates and engaged by the gear for operating the plates the means retained in position by the guides with which the means engage.

4. The combination with an ash-pan provided with tracks and a sectional bottom slidably mounted on the tracks, of toothed rods secured to the sections of the bottom, a box supported between the tracks, a gear journaled in the box and engaging the toothed rods for operating the plates, and guides between which and the gear the rods reciprocate.

5. An ash-pan provided with a sectional bottom and rails upon which the sections rest, the rails extending some distance on opposite sides of the pan, a plate received on the rails, the plate provided with a depressed portion, rods secured to the sectional bottom and received in the depressed portion of the plate, guides located on the plate between which the rods reciprocate and means for operating the rods.

6. An ash-pan provided with a sectional bottom, rails upon which the sections are received, rods connected to the sections, the rails projecting from opposite sides of the pan, a saddle-plate received between and secured to the rails, the outer ends of the rods

being received on the saddle-plate, means for reciprocating the rods in opposite directions, and means carried by the plate for protecting the operating mechanism.

7. An ash-pan provided with a sectional bottom, rails extending from opposite sides of the pan, upon which the sections of the bottom are received, a saddle-plate secured between the rails, rods connected at their inner ends to the sections, their outer ends passing over the saddle-plate, means for reciprocating the rods in opposite directions to open and close the bottom, and bars located on opposite sides of the operating means to protect the latter.

8. An ash-pan provided with oppositely-extending tracks, bottom sections slidably received on the tracks, lugs depending from the sections, certain of the lugs adapted to slidably engage the tracks to retain the sections in alinement, rods secured to lugs and extending in a direction parallel with and intermediate the tracks, the rods extending in alinement with the direction of movement of the sections and means for operating the sections.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses:

FRANK CRIS.

Witnesses:

C. H. CHURCHILL,  
F. C. POLING.