

A. FIEDLER.

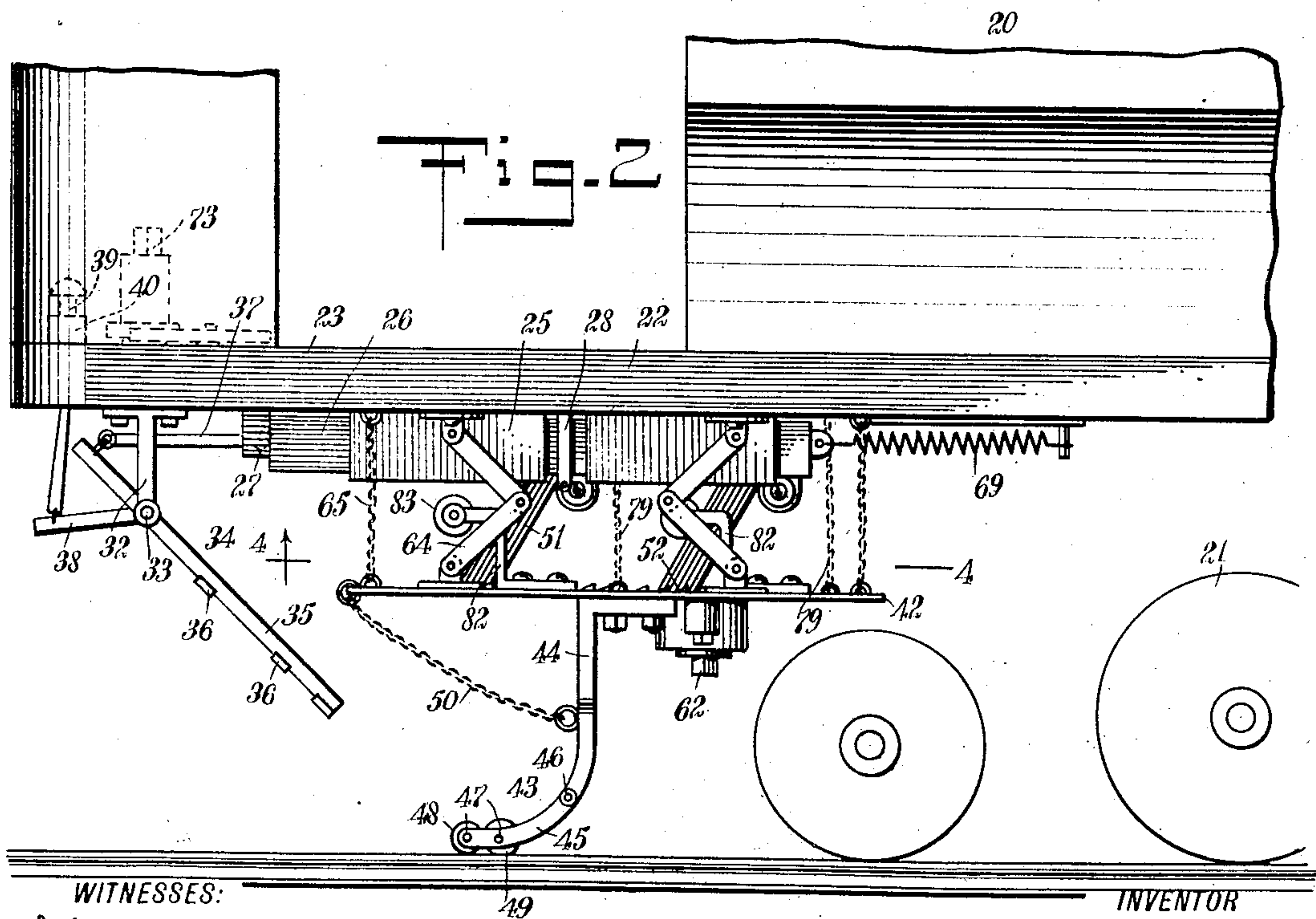
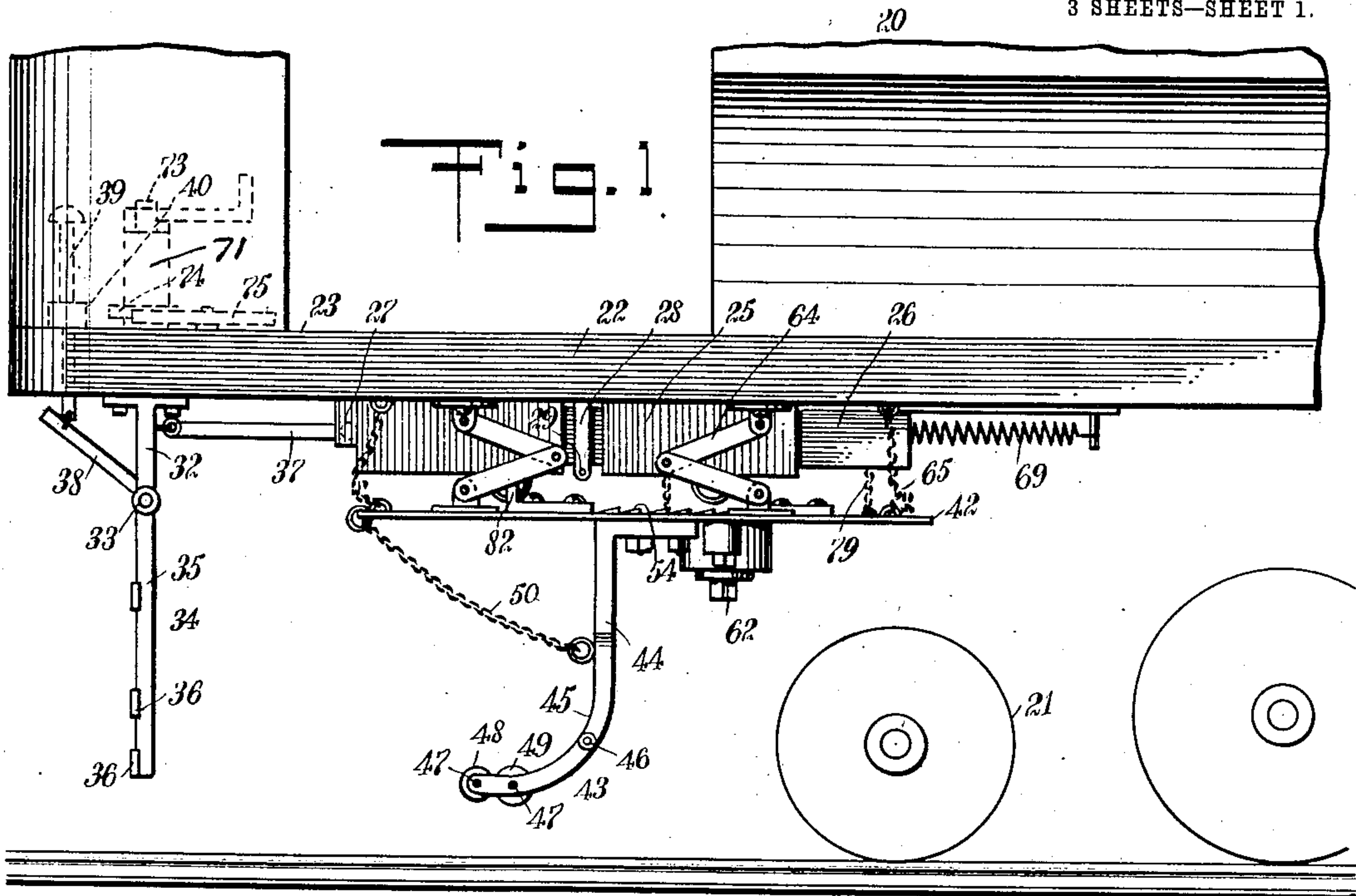
WHEEL GUARD.

APPLICATION FILED FEB. 9, 1910.

962,826.

Patented June 28, 1910.

3 SHEETS—SHEET 1.



WITNESSES:

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John K. Brachvogel

INVENTOR

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3 SHEETS—SHEET 2.

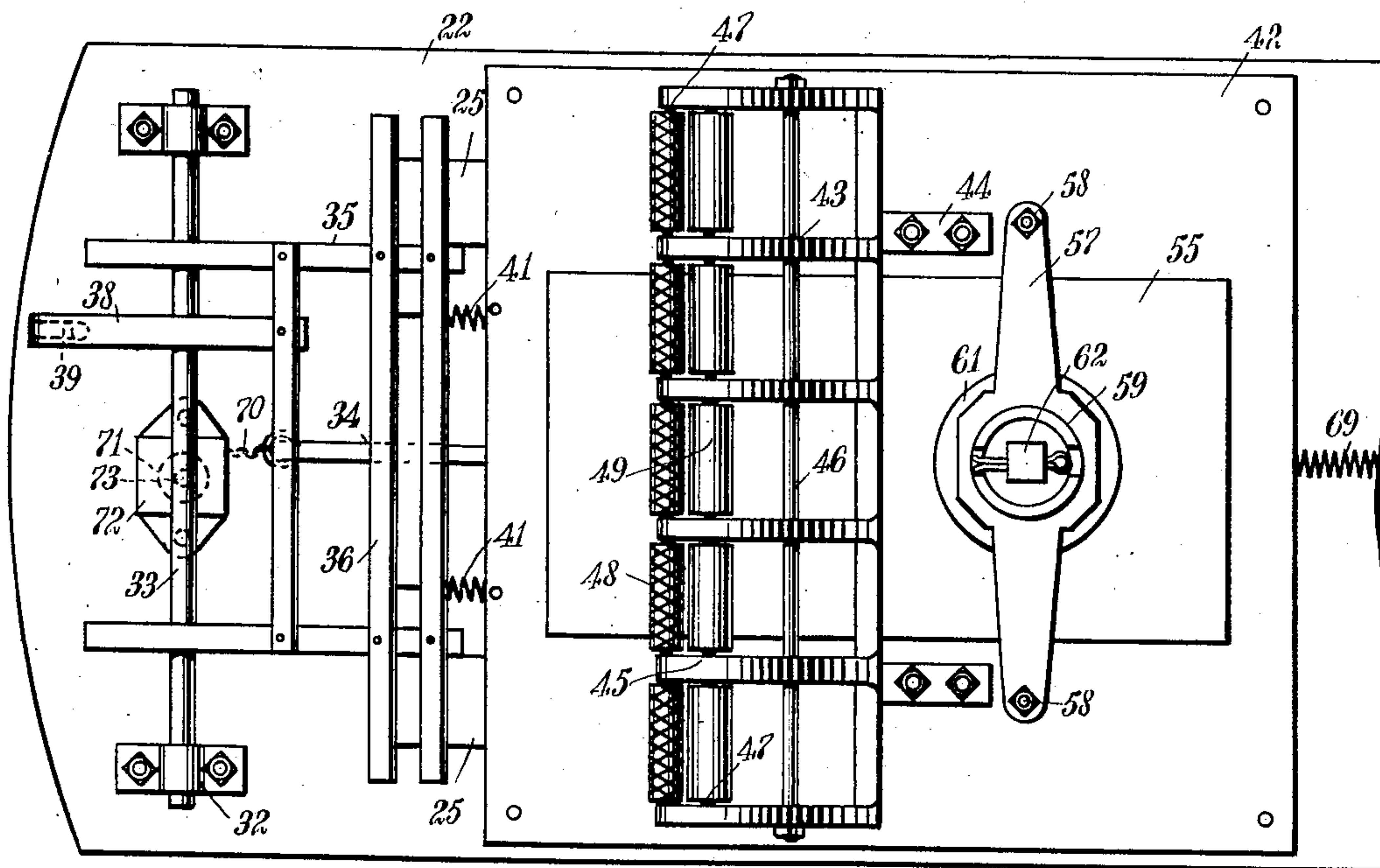


Fig. 3

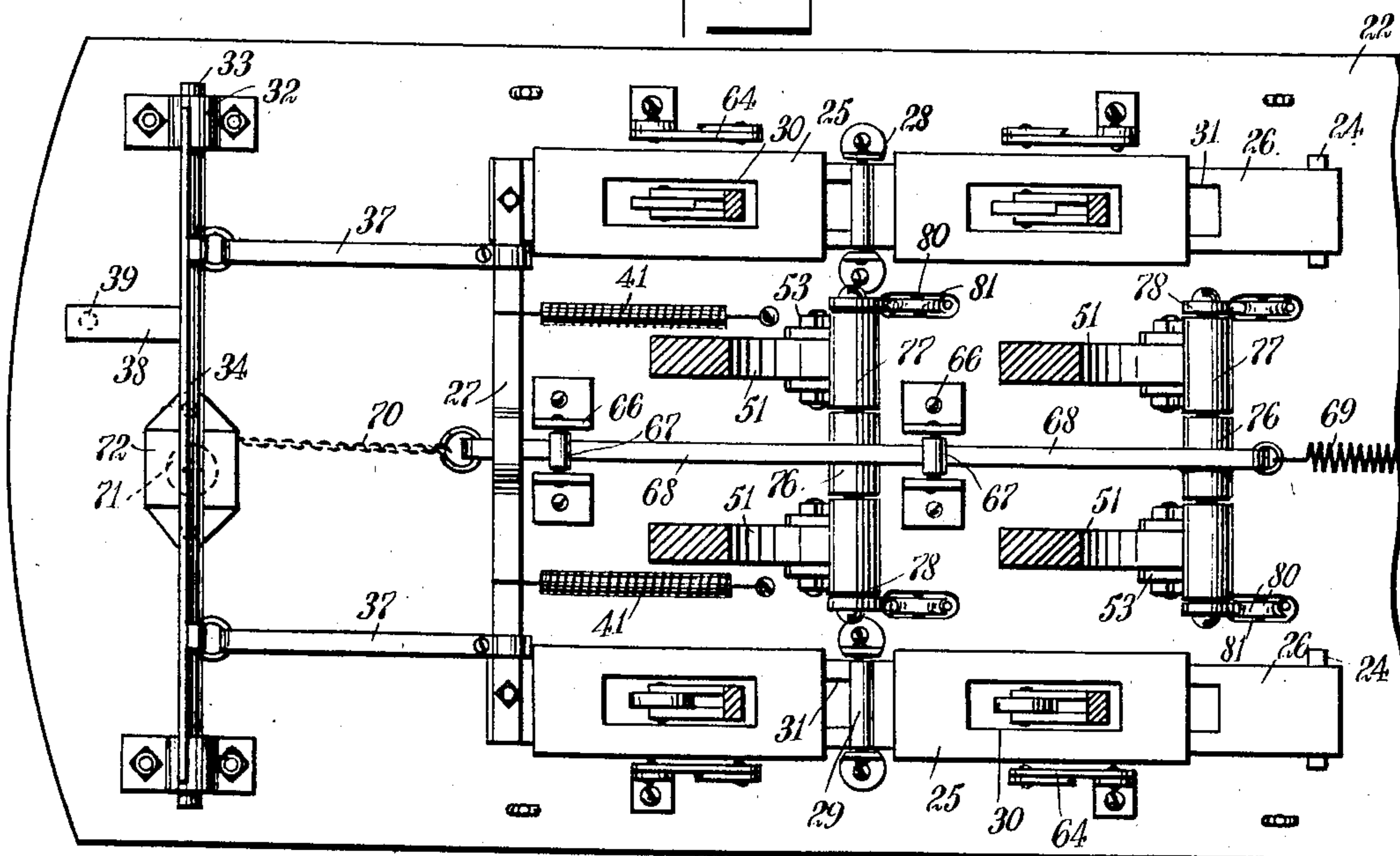


Fig. 4

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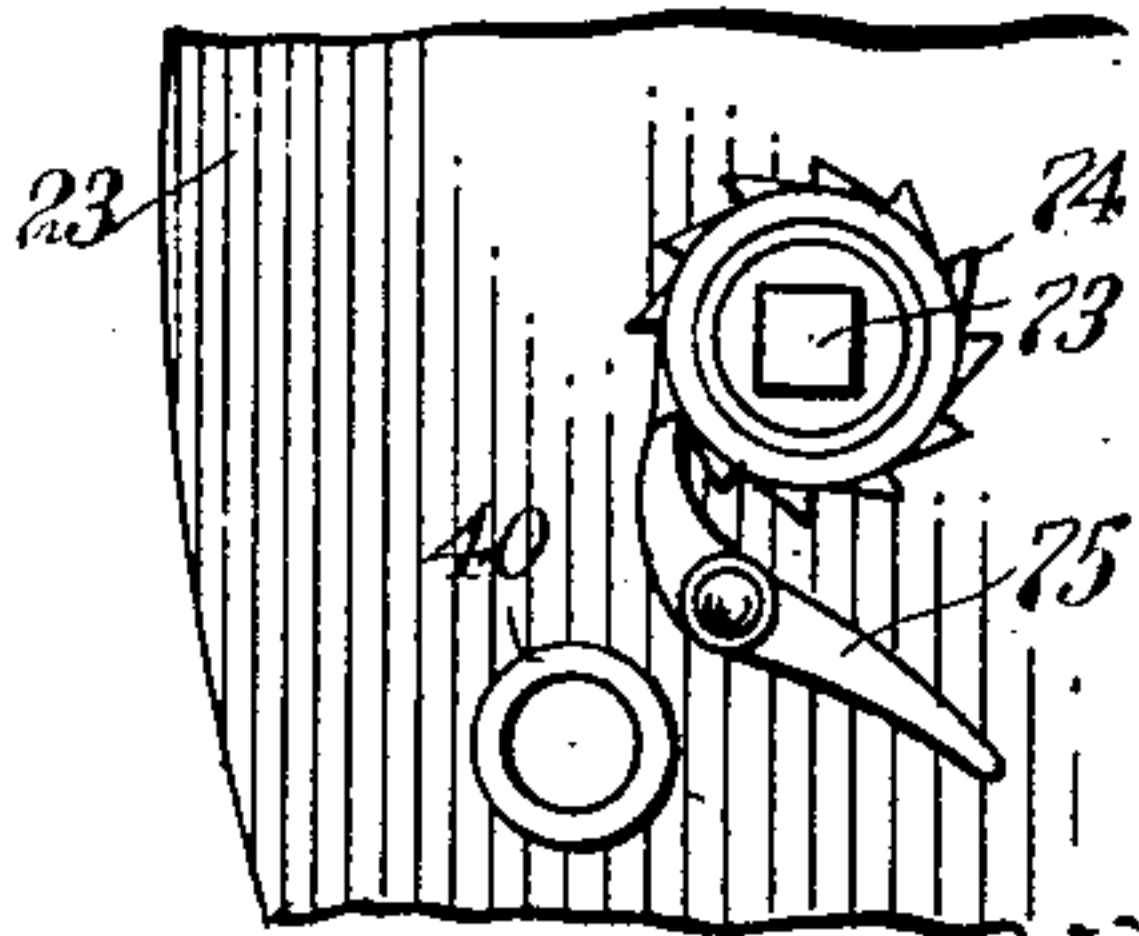
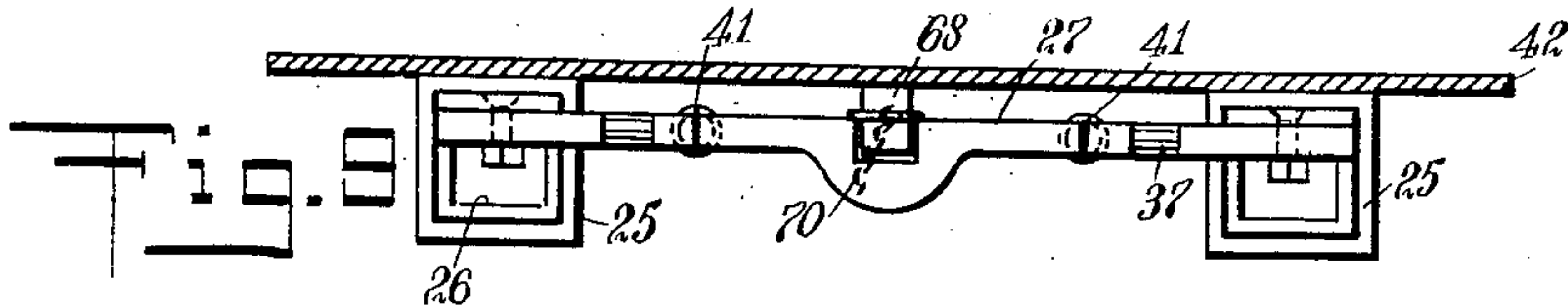
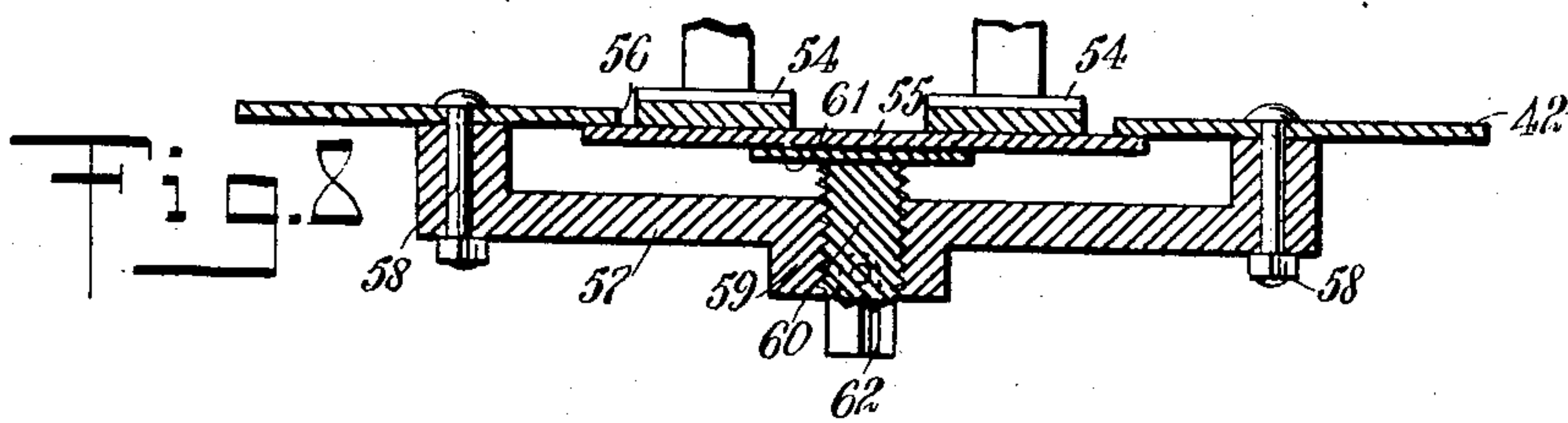
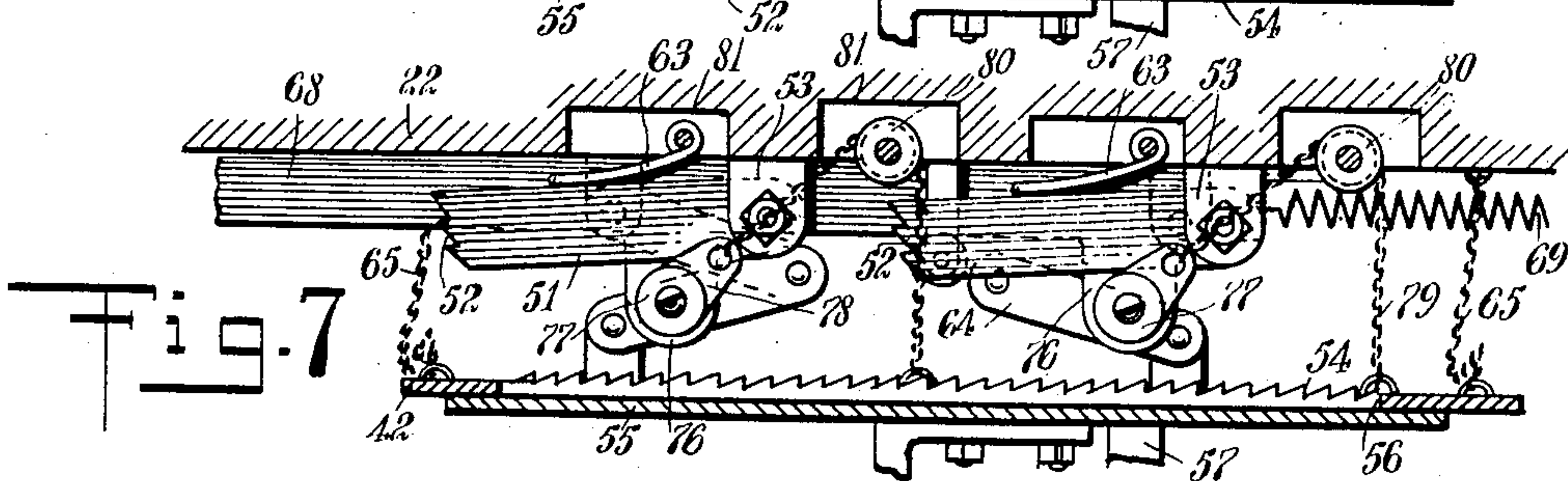
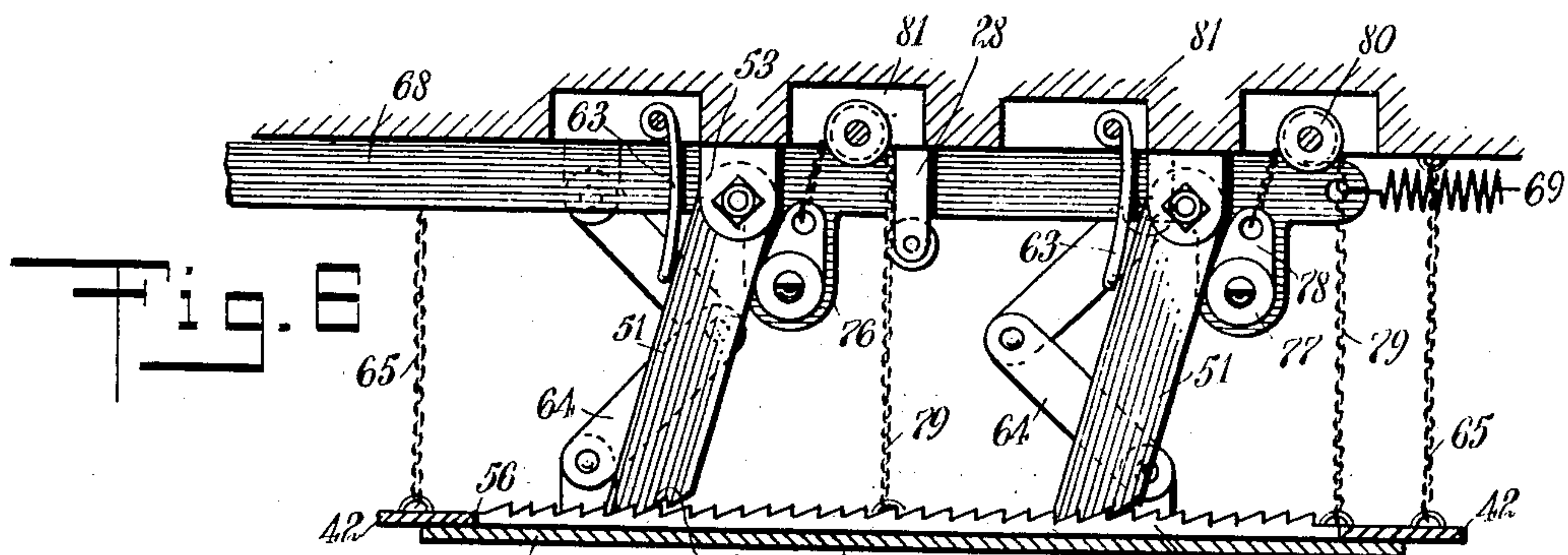
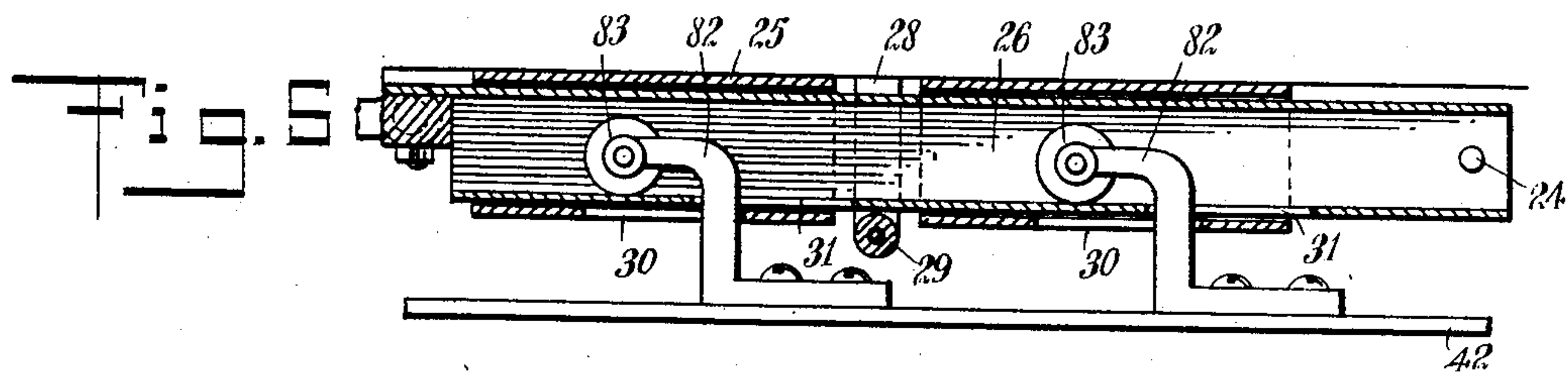
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UNITED STATES PATENT OFFICE.

ANTHONY FIEDLER, OF NEW YORK, N. Y.

WHEEL-GUARD.

962,826.

Specification of Letters Patent.

Patented June 28, 1910.

Application filed February 9, 1910. Serial No. 542,854.

To all whom it may concern:

Be it known that I, ANTHONY FIEDLER, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Wheel-Guard, of which the following is a full, clear, and exact description.

This invention relates to wheel guards for use in connection with street railway cars and other vehicles, and has reference more particularly to a device of this class in which is provided a fender movable bodily in a substantially vertical direction, and adapted to be controlled by a gate under the car, or by a device operable by a person on the car.

An object of the invention is to provide a simple, strong and durable wheel guard which can be used with street railway cars and other vehicles of like nature, to prevent injury to persons accidentally struck by the cars, or who are otherwise in danger of being injured by the wheels thereof, in which the fender intended to receive or deflect the body of the person in danger, is normally elevated and out of engagement with the ground, and is movable bodily in substantially vertical directions, in which the fender can be released by a gate adapted to be engaged by the body of the person in danger, or which can be released by the motorman or some other person on the car, and in which the fender, when released, is brought into close and firm contact with the ground, to obviate the possibility of the person under the car passing under the fender.

A further object of the invention is to provide a device of the class described, in which the fender when released, can be easily returned to its normal, inoperative position, in which a comparatively slight effort is sufficient to release the fender, in which the fender is so constructed that it can firmly engage the ground, with a minimum of friction, and without danger of injury to the fender even if the ground is rough or irregular in its surface, in which the fender, when operative, is held firmly in engagement with the ground, and in which means are provided for operating the holding device, to facilitate the return of the fender to its normal, inoperative position.

The invention consists in the construction and combination of parts to be more fully

described hereinafter, and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts, and in which—

Figure 1 is a side elevation of one end of a car having an embodiment of my invention applied thereto, showing a fender in a normal position; Fig. 2 is a similar view showing the fender in a released, tripped position; Fig. 3 is an inverted plan view of the fender; Fig. 4 is a horizontal section on the line 4—4 of Fig. 2; Fig. 5 is a longitudinal section showing certain of the details of construction of the means for holding the fender in a normal position; Fig. 6 is a longitudinal section showing parts of the fender in tripped position; Fig. 7 is a similar view showing the parts in their normal positions; Fig. 8 is a transverse section showing certain constructive details; Fig. 9 is a similar view showing other details; and Fig. 10 is a plan view of a part of the car platform, showing certain of the fender-controlling devices.

Before proceeding to a more detailed explanation, it should be clearly understood that the fender can be used with different kinds of street railway or other cars, and while it is useful as a wheel guard it also serves to catch and hold the body of a person in danger of being injured by the wheels of the car, and thus acts not only as a guard, *i. e.*, to thrust the body aside and out of the path of the wheels. The fender is gate-controlled; that is, it is released by the engagement of a swinging gate under the platform with the body of the person in danger. I also provide means whereby the motorman of the car, or some other person, can release the fender before the gate strikes the body. When the fender is released it rests upon the ground, and the device is so constructed that the shaking or vibrating of the fender, due to the engagement thereof with the ground, serves to increase the pressure with which it is forced against the ground. This practically obviates the possibility of the fender passing over the body of the person, and insures that the body is received by the fender and carried safely until the car can be brought to a stop. Certain of the details of construction form no part of this invention, and can be varied in accordance with

special conditions and individual preference, without departing from the spirit of the invention.

Referring more particularly to the drawings, I have shown for example, a street railway car 20, mounted upon wheels 21 and having a floor-frame 22, the front end of which is the usual front platform 23. Under the floor of the car body I mount spaced pairs of keeper guide holders 25 arranged at opposite sides of the car, and of any suitable form; as shown for example herewith, they may consist of hollow members of rectangular cross-section, which at each side of the car are alined. Slidable keepers 26 are movably arranged within the guide holders, and likewise preferably consist of hollow members; they have suitable stops 24. At the front ends they are connected by a yoke bar 27 riveted or bolted at the extremities of the keepers. Between the holders, at each side of the car, are brackets 28 having rollers 29 which assist in slidably supporting the keepers. The holders have at the under sides, cutaway parts 30, adapted to register with correspondingly cutaway parts 31 of the keepers, in predetermined positions of the latter.

The platform 22, at the under side and in front of the keepers, has hanger brackets 32 in which is journaled a shaft 33, carrying the gate 34. The latter may be of any suitable form, and as shown for example herewith, comprises vertical bars 35 and cross-bars 36. The upper ends of the vertical bars 35 extend upwardly, beyond the shaft 33, and are connected by means of links 37 with the yoke bar 27. The shaft also has an upwardly and laterally disposed arm 38 rigid therewith, to which is fastened a push rod 39 extending upwardly through a sleeve 40 of the platform, so that the motorman can depress it by placing his foot upon the upper end, thereby to release the gate. Downward pressure upon the rod 39 swings the gate inward as is shown most clearly in Fig. 2, and pulls the keepers forward, for a purpose to appear hereinafter. Springs 41 are secured to the yoke bar 27 and to the under side of the car platform, and tend to hold the gate and the keepers in normal positions.

I provide a head member or plate 42 positioned under the guide holders and keepers, and having secured at the under side thereof, the fender 43. The fender is secured to the head member by means of carrier arms 44, the upper ends of which are laterally disposed and bolted to the head member. The fender comprises curved bars 45 having a cross rod 46, and at the lower end parallel rods 47 upon which are journaled rubber rollers 48 and 49. The rollers are spaced slight distances apart and are of different sizes. They may be fashioned

from any other suitable material, and serve to engage the ground when the fender is released. The forward rollers 48 are preferably corrugated; the rollers serve to prevent injury to the body of the person being caught by the fender. Chain guys 50 are secured to the fender near the upper part thereof, and at the front of the head plate, and assist in holding the fender in place against the impact of a body against it.

Thrust bars 51, having the lower ends 52 provided with teeth, are pivotally mounted in brackets 53 at the under side of the car body, between the holders and keepers. They are inclined to engage ratchet bars 54 carried by a central plate 55, positioned under the head plate 42, and at a central cutaway part 56 of the latter. A cross-bar 57 is secured by means of bolts 58, underneath the head plate, and has a centrally threaded hub 59 in which is located a threaded stem 60 having a head 61 engaging the ratchet-bar plate 55. The threaded stem has the lower end 62 formed of angular cross-section, so that it can be rotated by a wrench or other suitable tool, to adjust the ratchet-bar plate 55.

Springs 63 engage the thrust bars 51 and tend to hold them normally in engagement with the ratchet-bars 54, and thereby to force the head member and the fender toward the ground. Toggle links 64 are pivotally secured to the head plate and to the under portion of the car, and assist in movably holding the head plate in position. Limiting chains 65 are also secured to the head plate and the car body, and prevent the downward movement of the head plate beyond a certain predetermined position.

Guide brackets 66 having rollers 67 are secured to the under portion of the car body, between the holders and keepers, and slidably position a releasing bar 68. A spring 69 fastened to the releasing bar, at the rear end thereof, and to the car body, tends to hold the releasing bar in a normal position. A chain or other line 70 is attached at the front of the releasing bar, and wound upon a drum 71 journaled in a bracket 72 at the front of the platform, and having a spindle or stem 73 extending through an opening in the platform, to the upper side thereof, where it is provided with a portion of angular cross-section, adapted to be engaged by a wrench or other tool, to permit its manipulation. It is provided with a ratchet 74 and a dog 75, so that the releasing bar can be held in any desired position against the tension of the spring 69.

The releasing bar has downward extensions 76, which carry rollers 77 adapted to engage the thrust bars 51. The extensions also have arms 78 to which are attached chains 79, or other flexible members, passing over pulleys 80, and secured to the head member or plate 42. The pulleys, like the

springs 63, are preferably mounted in recesses 81 formed in the under side of the car floor or body.

The head member or plate has secured thereto, hangers 82 which are substantially of Z-form and are bolted or otherwise secured in place. At the upper, free ends the hangers have rollers 83, which are adapted to project through the cutaway parts 30 and 31, into the keepers. When the keepers are in their retracted, normal position, as is indicated in Fig. 5, they engage under the rollers 83 and thus hold the hangers, and consequently the head member and the fender, in their normal, elevated positions.

When the fender is released by a movement of the gate 34, or by a person on the car, the keepers are pulled forward against the tension of the springs 41, until the openings 31 register with the openings 30, the keepers sliding under the hanger rollers 83. The weight of the head member and the parts associated therewith, together with the thrust of the springs 63 against the bars 51, forces the fender bodily downward in a substantially vertical direction, toward the ground. Owing to the engagement of the fender with the ground, and the forward movement of the car, the tendency is to force the fender backward, and the thrust bars, owing to their engagement with the ratchet bars 54, cause the fender to be brought more firmly into engagement with the ground. Any oscillatory or backward and forward movement of the fender, due to the sliding thereof over the ground, merely tends to force it more firmly against the ground, as each forward movement permits the thrust bars to engage the ratchet bars farther toward the rear thereof, and consequently, the next backward movement of the fender tends to bring the thrust bars into more nearly vertical positions. When the car is brought to a stop, and it is desired to return the fender to a normal position, it may be found that the fender is so firmly pressed against the ground that it is almost impossible to release it by means of the releasing bar. The threaded stem 60 can then be operated to lower the ratchet bar plate, to release the thrust bars. When this has been done the spindle 73 can be turned to pull the releasing bar forward against the tension of the spring 69. This movement of the releasing bar brings the rollers 77 into engagement with the thrust bars and swings these upward against the tension of the springs 63. At the same time, the head member 42 and the fender are raised by means of the lifting chains 79 which pass over the pulleys 80 and are secured to the head member. At this time the gate should be so disposed that the openings 30 and 31 register, to permit the hangers 82 to enter

the keeper. When the head member has been returned to its normal position, the gate is released and the keepers then slide underneath the rollers 83 and the fender is again located in its normal position.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent:

1. In a device of the class described, a member adapted to be movably associated with a car, a fender carried by said member, a thrust bar adapted to be movably secured to the car and to engage said member, a keeper for holding said member in a normal position, and means for releasing said keeper, said thrust bar being normally disengaged from said member.

2. The combination, with a car, of a fender, a member supporting said fender, a thrust-bar pivotally secured to said car and normally inoperative with respect to said member, said thrust bar when operative, being inclined downwardly and forwardly to engage said member, and a flexible connection between said member and said car.

3. The combination, with a car, of a member supporting a fender, a flexible connection between said member and said car, a thrust bar pivotally secured to said car and inclined forwardly and downwardly to engage said member, a keeper for holding said member in a normal position, and a gate controlling said member.

4. The combination, with a car, of a member supporting a fender, a flexible connection between said member and said car, a thrust bar pivotally secured to said car and inclined forwardly and downwardly to engage said member, a keeper adapted to engage said member to hold said fender elevated, a swinging gate, an operative connection between said gate and said keeper, and means for raising said member.

5. The combination with a car, of a guide, a keeper slidably associated with said guide, a member adapted to be held in an elevated position by said keeper, in a predetermined position of said keeper, a fender carried by said member, and a thrust member normally tending to force said first-mentioned member toward the ground.

6. The combination, with a car, of a guide, a keeper slidably associated with said guide, a gate controlling said keeper, a member having a hanger adapted to be engaged by said keeper, in a predetermined position thereof, to hold said member in a normal, elevated position, a fender depending from said member, and a thrust bar engaging said member and tending to depress the same.

7. The combination with a car, of a guide, a keeper slidably associated with said guide, a gate controlling said keeper, a member having a hanger adapted to be engaged by said keeper, in a predetermined position

thereof, to hold said member in a normal, elevated position, a fender depending from said member, a thrust bar engaging said member and tending to depress the same, a spring tending to hold said keeper in a normal position, and means for elevating said member, said last-mentioned means including means for disengaging said thrust bar from said member.

8. The combination with a car, of a guide, a keeper slidably associated with said guide, a member having a hanger adapted to be engaged by said keeper to hold said member elevated, a fender depending from said member, a pivoted thrust bar engaging said member and tending to depress the same, and a manually-operable releasing device controlling said thrust bar and serving to elevate said member.

9. The combination with a car, of a movable keeper, a gate controlling said keeper, a fender having a hanger associated therewith, said keeper serving to hold said hanger in an elevated position when said keeper is in a predetermined position, a movable thrust bar controlling said fender, and tending to depress the same, and a releasing device controlling said thrust bar, and including means for elevating said fender.

10. The combination with a car, of a movable keeper, a gate controlling said keeper, a fender having a hanger associated therewith, said keeper serving to hold said hanger in an elevated position when said keeper is in a predetermined position, a movable thrust bar controlling said fender and tending to depress the same, a releasing device controlling said thrust bar, and including means for elevating said fender, a spring tending to hold said thrust bar operative, a second spring tending to hold said releasing device inoperative, and means for limiting the movement of said fender.

11. The combination with a car, of a fender having a limited movement with respect to said car, a downwardly and forwardly inclined thrust member controlling said fender, whereby a rearward movement of said fender tends to depress the same, a spring engaging said member, and a flexible connection between said fender and said car.

12. The combination with a car, of a fender, a ratchet bar associated with said fender, a pivoted thrust bar having teeth engaging said ratchet bar, said thrust bar being mounted upon said car, and normally inclined downwardly and forwardly, and a flexible connection between said fender and said car.

13. The combination with a car, of a thrust bar pivotally carried by said car, a fender controlled by said thrust bar, said thrust bar being normally inclined downwardly and forwardly, whereby a rearward movement of said fender causes said thrust

bar to depress said fender, said fender having an adjustable part engaging said thrust bar.

14. The combination with a car, of a member positioned under said car and having an adjustable ratchet plate, a pivoted thrust bar having teeth adapted to engage said ratchet plate, a fender carried by said member, and means for adjusting said ratchet plate to release said thrust bar.

15. The combination with a car, of a hollow guide having an opening, a hollow keeper slidably mounted in said guide and having an opening, a hanger adapted to extend through said openings and to be held in an elevated position by said keeper, a fender carried by said hanger, and a pivoted gate controlling said keeper.

16. The combination with a car, of a hollow guide having an opening, a hollow keeper slidably mounted in said guide and having an opening, a hanger adapted to extend through said openings and to be held in an elevated position by said keeper, a fender carried by said hanger, a pivoted gate controlling said keeper, a spring tending to hold said keeper in a normal position, a thrust bar pivotally mounted upon said car and tending to depress said fender, and a manually-operable releasing device controlling said thrust bar.

17. The combination with a car, of guides mounted under said car, keepers slidably associated with said guides, a pivoted gate controlling said keepers, a spring tending to hold said keepers in normal positions, a head member mounted under said car, and having hangers adapted to be engaged by said keepers and to be held elevated thereby, a fender depending from said head member, thrust bars pivotally secured to said car and engaging said head member, a slidable releasing rod having parts adapted to engage said thrust bars, an operative connection between said releasing rod and said head member, whereby said releasing rod serves to elevate said head member, and a spring tending to hold said releasing rod in a normal, inoperative position.

18. The combination with a car, of guides mounted under said car, keepers slidably associated with said guides, a pivoted gate controlling said keepers, a spring tending to hold said keepers in a normal position, a head member mounted under said car, and having hangers adapted to be engaged by said keepers and to be held elevated thereby, a fender depending from said head member, thrust bars pivotally secured to said car and engaging said head member, a slidable releasing rod having parts adapted to engage said thrust bar, an operative connection between said releasing rod and said head member, whereby said releasing rod serves to elevate said head member, a spring tending to

hold said releasing rod in a normal, inoperative position, a flexible connection between said head and said car, springs tending to hold said thrust bars operative, and means for
5 adjusting said head member to release said thrust bars.

19. The combination with a car, of hollow guides mounted under said car, hollow keepers slidably associated with said guides, said
10 guides and said keepers having openings adapted to register in predetermined positions of said keepers, a movable gate connected with said keepers, a spring tending to hold said keepers in normal positions, a head
15 member mounted under said car and having hangers provided with rollers and adapted to extend through said openings, whereby said hangers can be held in elevated positions by said keepers, in predetermined po-
20 sitions of said keepers, a fender depending from said head member, thrust bars pivotally secured to said car and having the free ends provided with teeth, said head member having an adjustably-mounted ratchet bar
25 adapted to be engaged by said thrust bars, a slidable releasing rod having rollers adapted to engage said thrust bars, an operative connection between said releasing rod

and said head member, whereby said releasing rod serves to elevate said head member, 30
a spring tending to hold said releasing rod in a normal position, means for operating said releasing rod, and a flexible connection between said head member and said car.

20. The combination with a car, of a mem- 35
ber supporting a fender, a keeper operative to hold said member in a normal, elevated position, toggles connecting said member and said car, flexible members limiting the movement of said member, and means for 40
operating said keeper.

21. In a device of the class described, a head member supporting a fender, a plate movably associated with said head member, a cross-bar secured to said head member and 45
having a spindle controlling said plate, and a thrust bar adapted to engage said plate to depress said head member.

In testimony whereof I have signed my name to this specification in the presence of 50
two subscribing witnesses.

ANTHONY FIEDLER.

Witnesses:

ALFRED J. BAKER,

JOHN K. BRACHVOGEL.