

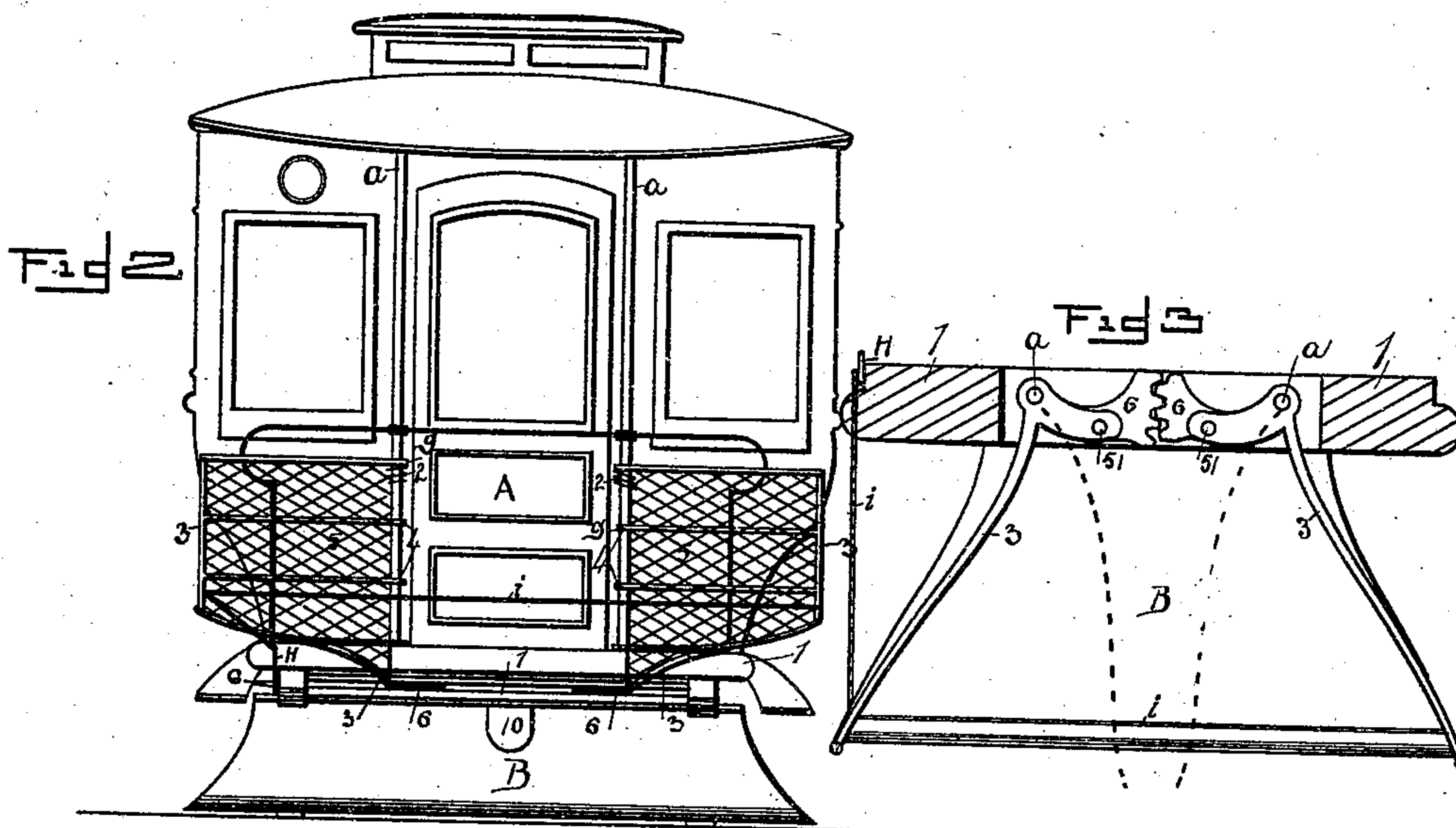
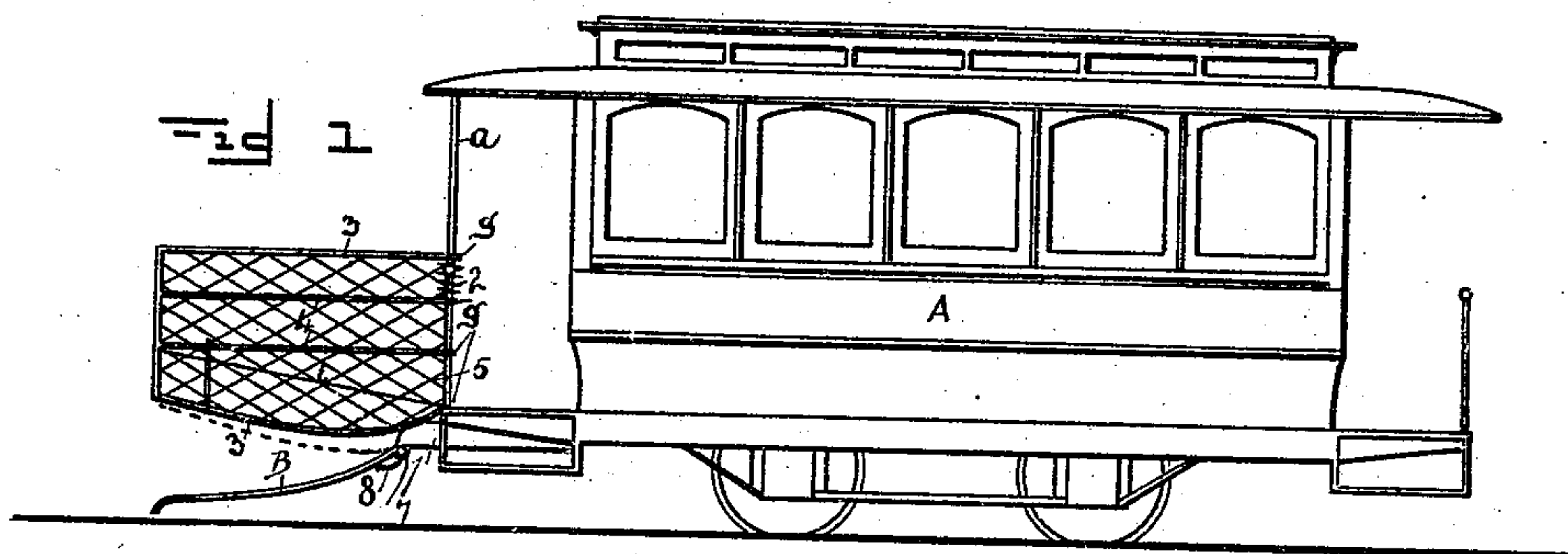
(No Model.)

2 Sheets—Sheet 1.

J. GRANT.
CAR FENDER.

No. 551,585.

Patented Dec. 17, 1895.



WITNESSES:

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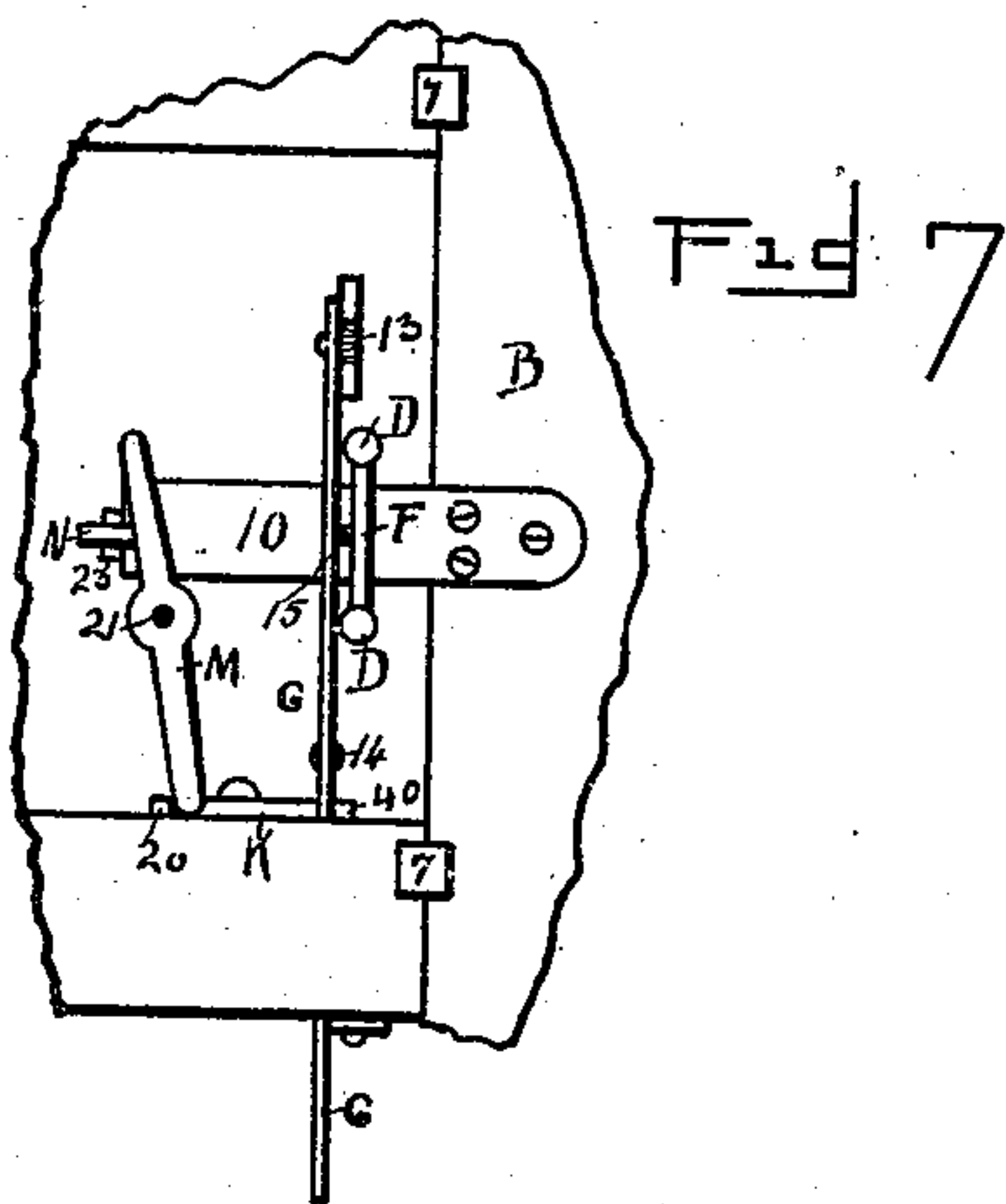
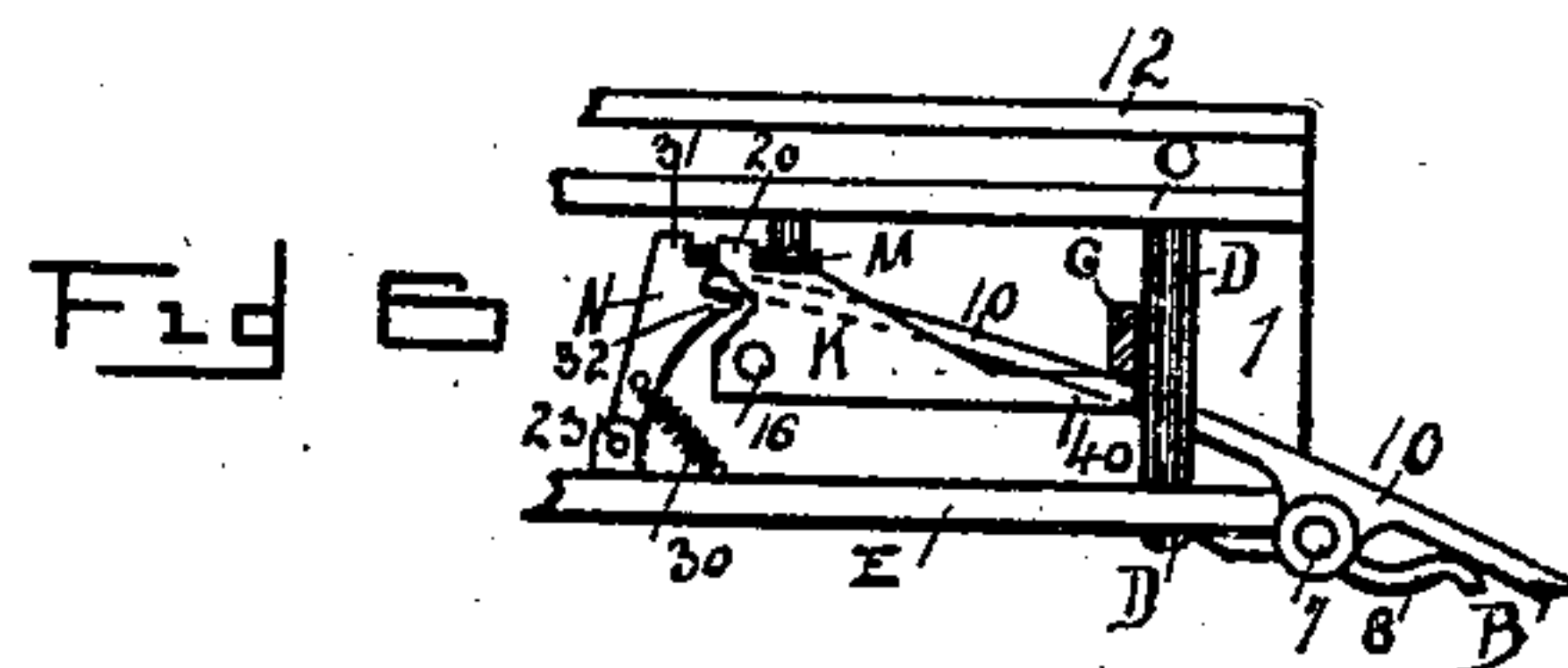
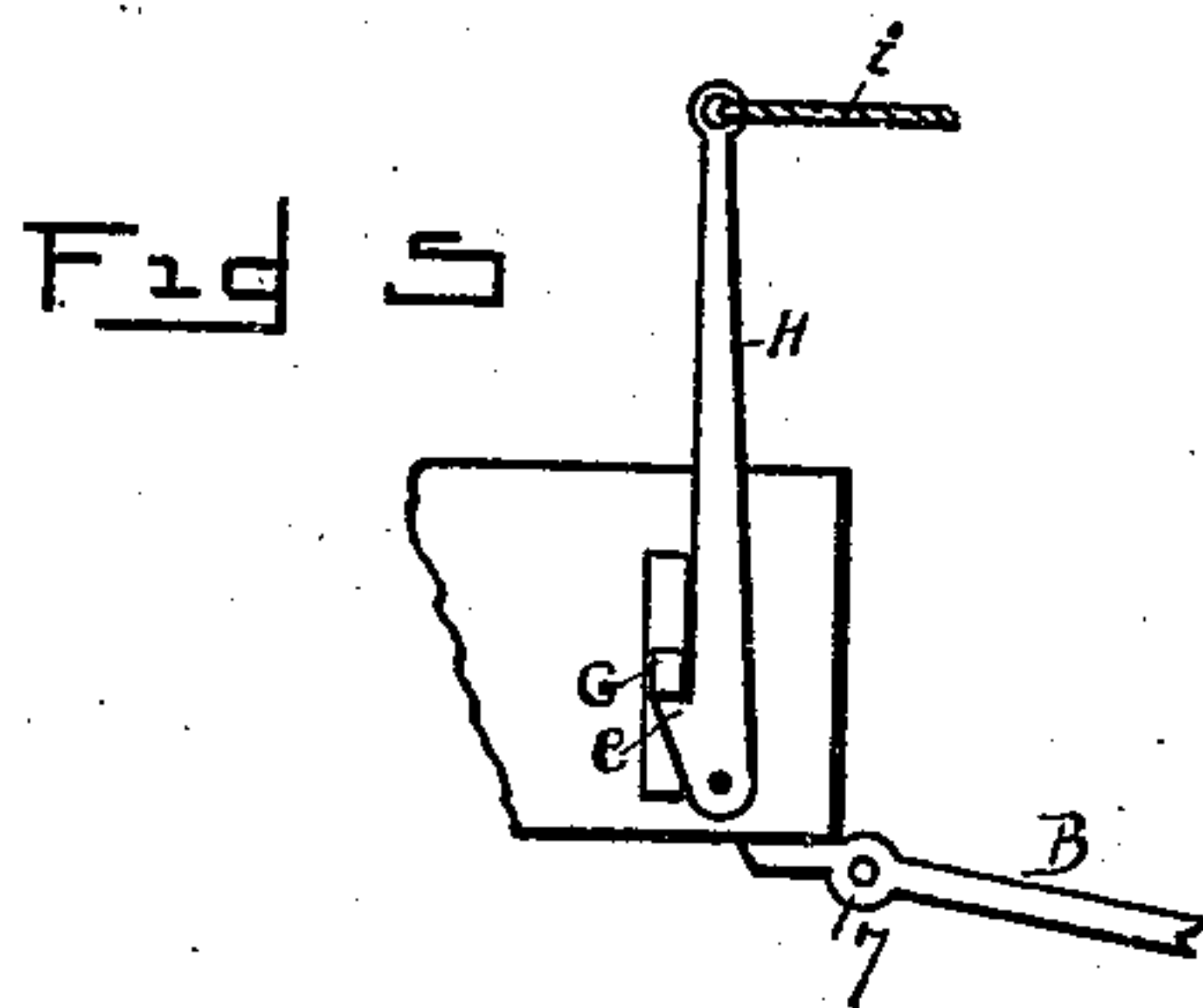
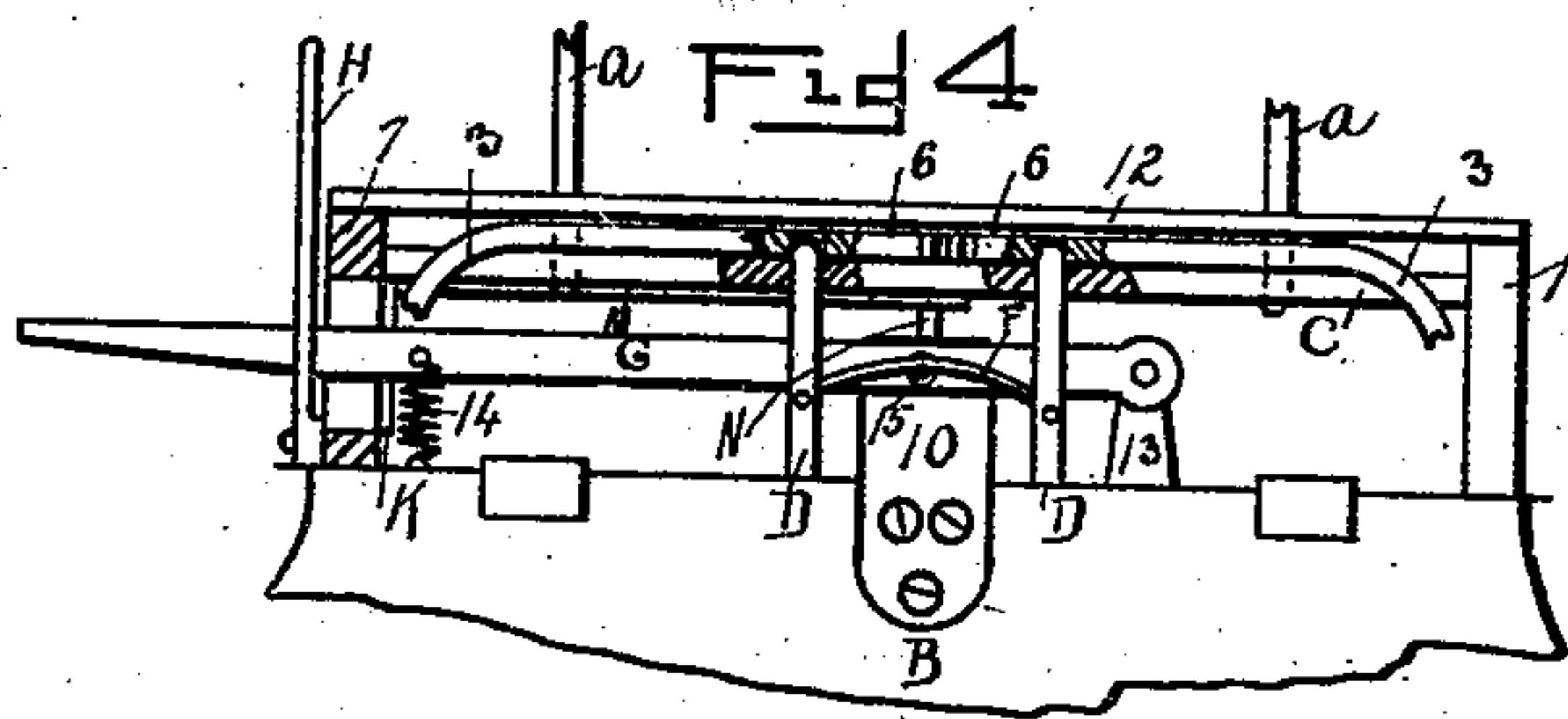
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2 Sheets—Sheet 2.

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JOHN GRANT, OF OMAHA, NEBRASKA.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 551,585, dated December 17, 1895.

Application filed September 19, 1895. Serial No. 563,048. (No model.)

To all whom it may concern:

Be it known that I, JOHN GRANT, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain useful Improvements in Car-Fenders; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention has relation to a new and novel improvement in car-fenders, more particularly adapted to be used in connection with street and railway cars.

The object of my invention is to provide a fender that shall be so arranged that any object in the path of a car provided with my improvement will be caught, held, and lifted above the rails.

In the accompanying drawings, I have shown in Figure 1 a car equipped with my improved car-fender. Fig. 2 shows a front view of a car provided with my improved fender. Fig. 3 shows a top view, with portions removed, of the lower hinged apron and the sectors connected to the swinging frames. Fig. 4 shows an open front view of the working elements as exposed. Fig. 5 shows a broken detached detail of the main trigger-lever. Fig. 6 shows a broken detached detail disclosing a side view of the working parts, while Fig. 7 shows a broken detached top view showing the arrangement of the main operating-lever.

A in the drawings represents an ordinary car, to one end of which I have secured my improved fender, it being understood that one of my improved fenders could be secured at each end of the car or train.

My fender comprises essentially a hinged spring-actuated apron reciprocating in a horizontal plane, two pivoted spring-actuated wings or side fenders reciprocating in a vertical plane and being adapted to work in conjunction with the apron.

The operation of my fender in collision with an object would be as follows: The side fenders would be held in open position, as shown in Fig. 3, while the apron B would be in its lowest position, so that its forward end extended but a few inches above the rails, as is shown in Fig. 1. These side fenders, as well as the

apron, would be locked in open position until some obstacle would be encountered, when the collision would unlock the working element to lift the apron B upward, while the side fenders 3 3 would at the same time close, as is shown in dotted lines in Fig. 3. By this means the object would not only have been lifted above the tracks, but would also have been held upon the apron by means of the closing spring-actuated fenders 3 3. This would have been accomplished as follows: Between the forward sills and below the forward end of the car I provide two plates C and E, which could be of metal or any other suitable material and extend in a horizontal plane, the floor of the car being represented by the numeral 12.

In my drawings I have shown my fender as secured to an ordinary street-car, and I shall describe the same so, although my device could, of course, be attached to an ordinary pilot or cow-catcher of a locomotive.

In securing the side fenders 3 3 I provide two stout bars *a a*, which I preferably secure at their upper ends to the deck of the car. To these two bars *a a* I next secure the side fenders 3 3, which preferably comprise a skeleton iron framework having the ears *g*, by means of which said fenders are pivotally secured to the bars *a*, which extend through the bottom of the car 12 and pass into the plate C, as is shown in Fig. 4. These skeleton frames are next provided with some open-work or netting, which can be either of twine or be in the form of what is known as "steel-spring matting". This is done to prevent the object caught from coming into violent contact with the cross-bar of the frame or the fenders 3. Below I secure the end of the frames 3 to the gear-sectors 6, which mesh and interlock, as is shown in Fig. 3. Above I provide the bar *a* with a spring 2, which spring continuously and normally exerts a pressure on these frames to bring them into a closed position, as is shown in the dotted lines in Fig. 3.

The apron B, which comprises a suitable padded frame extending the width of the car and which is hinged to the forward end of the car by means of the hinges 7, is provided below with a bow-spring 8, which normally tends to force this into an upward closed position, as is shown in Fig. 1, where, in dotted lines, is

disclosed the position of this apron in its upper extreme position. This spring 8 is made strong enough so that in its closed position it can carry an ordinary human being. Extending from this apron B is a tongue 10, referring now to Figs. 6 and 7, which tongue, in the rear, is adapted to be engaged by a dog N pivoted in a vertical plane between the ears 23 and being provided with a spring 30 adapted to continuously draw this dog N forward. This dog has two seatings, one marked 32 and another 31, the lower seating being adapted to hold the tongue 10 and the upper the end of a lever M, as shown in Figs. 6 and 7. This lever is pivoted in a horizontal plane and is secured to the lower deck portion of the plate C. In Fig. 7 this plate C is removed, but the lever M is shown in position.

Working upon the side, against one of the sills of the car, is a pivoted approximately triangular-shaped lever K, the forward projecting end 40 of which is adapted to ride below the main operating-lever G, referring to Fig. 6, while the rear upper end 20 of this pivoted lever K is adapted to work in front of one end of the lever M. It is also shown in Fig. 7. The main lever G is pivotally secured to a post 13 and extends beyond the side of the car. This lever is provided with a spring 14, which normally tends to force this lever G downward.

Reciprocating within the upper plate C and the lower plate E are two bars D D. These bars are connected by means of a bow-spring F, which bow-spring in turn is secured to the lever G. The sectors 6 6 are each provided with an opening 51 51 adapted to receive the ends of the bars D D, as is shown in Fig. 4, where the sectors have been broken away to show the entering of these bars.

Positioned upon the outside of the car is a tripping-lever H, which has a nosing e adapted to receive the spring-actuated pivoted lever G, as shown in Fig. 5. Extending from one of the frames 3 through an opening of the opposite frame 3, then being secured to the lever H, is a trigger-cord i, as is shown more clearly in Fig. 3.

To set my improved car-fender, it is simply necessary to force the apron B downward until the rear tongue 10 has escaped over and found a seating upon the nosing 32 of the dog N, so that this apron would be locked, as is shown in Fig. 1. The spring-actuated lever G would then be carried upward by hand, working against the spring 14, when the lever H would be carried below said lever G, as is shown in Fig. 5. One of the frames 3 would then be carried outward, and this frame 3, being connected to the opposite frame by means of the sectors 6, would also be carried outward until the spring-actuated bars D D would lock within the openings 51, as shown in Fig. 4. In this position it will be noticed the apron B would be pressing against the spring 8, while the springs 2 2 would be exerting a pressure against the frame 3. The

dog N would be spring-actuated by means of the coil-spring 32, while the lever G, working against the levers K and M, would also be spring-actuated. Now, should a car equipped with this open fender encounter a human being, for instance, the minute the trigger-cord i was engaged it would promptly carry the tripping-lever H outward, permitting the dropping of the lever G, which would be drawn down by the spring 14. This drop would first carry the bars D D out of their seatings, permitting the closing of the fenders 3 3, while at the same time the dropping of this lever G would have carried the upper end 20 of the triangular lever K forward, which movement would have been imparted to the pivoted lever M, and this lever in turn would have carried the dog N backward, permitting the dropping of the tongue 10, so that the apron B would have been carried upward with its load, which would have been carried above the rails and have been simultaneously engaged by the fenders 3. It is, of course, understood that all the exposed parts would be padded. By this means it can be readily seen that the obstacle is not only lifted above the tracks, but is held in a secure position until the car can be stopped. By a simple lever arrangement the upsetting movement of the lever H can be imparted to the stopping mechanism of the car, so that whenever this lever H is upset the car mechanism is automatically and instantly reversed. This, of course, would be of great and special benefit in connection with trolley-cars.

Now, having thus described my said invention, what I claim as new, and desire to secure by United States Letters Patent, is—

1. In a fender for cars, the combination of a pivoted, spring actuated apron working in a horizontal plane, of two pivoted, spring actuated side fenders working in a vertical plane, and a tripping mechanism arranged to simultaneously trip said apron and fenders, to carry said apron upward and said fenders inward, all substantially as and for the purpose set forth.

2. In a fender for cars, the combination of a pivoted, spring actuated apron working in a horizontal plane, of two pivoted, spring actuated side fenders working in a vertical plane, inter-locking sectors secured to each of said fenders, spring actuated locking bars adapted to work within openings of said sectors, a pivoted lever secured to said locking bars, a tripping lever adapted to hold said pivoted lever in position under tension, and a trigger cord being secured to said fenders and said locking lever, all substantially as and for the purpose set forth.

3. In a fender for cars, the combination of the following instrumentalities, to wit: a pivoted, spring actuated apron working in a horizontal plane, a pivoted, spring actuated dog adapted to engage one end of said apron, side fenders working in a vertical plane, inter-locking sectors secured to said side fenders,

spring actuated locking bars working within the sectors of said fenders, a spring actuated, pivoted lever secured to said locking bars, a lever connecting said pivoted lever to said spring actuated dog, a tripping lever adapted to lock said pivoted lever in position under tension, and a trigger extending from said side fenders to said tripping lever, all substantially as and for the purpose set forth.

4. In a fender for cars, the combination of the following instrumentalities, to wit: the pivoted fender B provided with the projecting tongue 10, the pivoted, spring actuated dog N adapted to receive said tongue 10, the pivoted, spring actuated fenders 3, 3 provided below with the interlocking sectors 6, 6 the seatings 51, 51 within said sectors, the spring

actuated bars D, D working within said seatings 51, the pivoted lever G secured to said spring actuated bars D, D the spring 14 secured to said lever G, the lever K working in conjunction with said lever G, the lever M working in conjunction with lever K and said dog N, the tripping lever H working below said lever G, in combination with the trigger cord i secured to said fenders 3, 3 and said tripping lever H, all substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN GRANT.

Witnesses:

A. J. WEBB,
R. F. GILDER.