

EXTRACT

The invention is intended for persons who voluntarily or involuntarily for an approaching train on the train tracks are located, by means of an airbag system on the front of a train to the right or left of the track to throw.

This will in most cases prevent persons run over, severely maimed and often no longer recognizable. For family, it is often not possible to personally say goodbye. Those directly involved surrounding the accident as conductor, engineer, professionals such an accident is a traumatic experience because of the mutilated state of the victim.

Given the size of the various trains and other vehicles, the airbag system with remote sensors contained in units. Depending on the size of the front of the train or other vehicle can then be placed two or more units ..

If a person is at least partially on track gets it provides a bracket system on the front of the train that person still left or right of the train arrives.

Regardless of the airbag system can be used to handle system inanimate objects to remove the rails.

Airbag system for people who come by train from the track shed.

The invention relates to an airbag system on the front of a train that persons who voluntarily or involuntarily on the train tracks are located, to the right or left of the track casts. In this way, people in most cases no longer run over by a train.

By using this airbag system can prevent people seriously maimed are, often no longer recognizable making a personal farewell to the victim's family is not possible. Those directly involved surrounding the accident as conductor, driver and helpers such an accident is a traumatic experience because of the mutilated state of the victim.

For persons who are voluntarily or involuntarily on the rails are removing uses an infrared sensor and ultrasonic systems. Two systems for precise operation The infrared sensor system is established to identify individuals, the ultrasonic sensor system to determine the exact distance between person and train. Sensing by the sensors of the distance between person and train depends on how fast the train goes. The speed is low then the short distance to the person that the airbags are activated at high speed and distance to the person that the larger airbags are activated. The airbag system includes four airbags angled inside and around it angled out four more airbags. In operation, first the airbag is filled in, touches the person fills the air than the larger outer bag and immediately throws the person to the right or left of the track. When the train stopped the system switches itself off.

The operator can, for whatever reason, turn off the system by means of a button.

Which is described above is contained in a unit comprising an air bag and sensor system. Each unit can consist of a single air bag and sensor system is a dual airbag and sensor system. A sensor or sensors in the unit (s) to clean of dust, insects, leaves, rain, snow, etc. and at a moving vehicle using a constant airflow around the front of the sensor (s) flows. At temperatures below freezing, the hot air to freeze on the front of the sensor (s) to occur. This airflow can come from a central compressor that provides all units of a flow or a built-in fan in the unit itself.

Depending on the size of the front of the train, four or more units be installed. As a unit system can be installed on trams, buses or other vehicles. These two units will probably be sufficient.

A bracket system under the front of the train makes a person associated with the disposal by the airbag system still partly on the track ends up being removed by an attachment which, immediately after the air bags are opened, opens. Regardless of the airbag system can handle the system is activated if there is no living things on track by the sensors of the lower units are identified.

The bracket system includes a locking system both left and right in front of the train which also can pivot about an axis to the frame of the train attached. Indicates the sensor in the lower right unit is a non-living object, then the lock on the left off and fold the bracket by repulsion of magnets, both the bracket and to the train attached, by exchanging poles north For example, south-to north-north right open. Indicates the sensor from the lower left unit is a non-living object, then the latch on the right off and fold the bracket by repulsion of magnets, both the bracket and to the train attached, by exchanging poles north For example, south-to north-north left open. Signalling the sensors of both the lower left and right unit is not a living object, then the pre-open bracket.

Pressure on the bracket that causes unfolding, as described by magnets, can also be reached by air or oil.

The invention will be put in greater detail by means of figures that the operation and performance capabilities of the invention display.

Figure 1 shows a top view back from the front of a train with a device consisting of infrared sensors 2 which when using the beam 3 is a living object, four signals then with the ultrasonic sensor 2a and the radius of this 3a exact distance to the object scanning and depending on the speed of the train determines when the air bag in an opening. If the object is 4 living inside a bag fills directly affects the outer bag 1a and the four living object to the right or left of the rails thrown.

Figure 2 shows a side view of the front of a train showing visible airbag sensors 1 and 1a and 2a and 2 height position. 5 posted with button on the dashboard allows the operator to turn off the system.

Figure 3 shows a front view, side view and a detail of the airflow that a sensor is a unit 6 with the unit, the indoor air bag 1 and outer airbag 1a and a recess 7 so that an airflow 8 for the sensors 2 and 2a are.

Figure 4 shows a side and top view back from the front of a train on the way the units 6 to train placed, and a section of the airbag operation with filling of the airbag 1, and there go around the bag 1a and a section where the air is also filled 1a.

Figure 5 shows a side view, top view and a detail of a bracket system under the front of a train attached. The bracket 8 has been on both ends of a U-shaped recess 16 containing four holes 15 on both sides. The bracket 8 is attached to an axle on each side 10 attached to a frame 9 at the front of the train by two standing on either side lock 11. This lock is inserted into the holes 15 of the bracket 8. By the latch 11 on one side open to slide out of the holes 15, the bracket 8 on the other side to the hinge axis 10.

If an object on the right hand 14 detected by the beam of an ultrasonic sensor 2a 3a in the lower right unit 6, the locking slide 11 in the holes 15 to the left of the open bracket. By the repulsion of the magnets 12 mounted on the frame of the train, and the magnets 13 attached to the inside of the bracket 8, folded the bracket 8 hinged to the right axis 10 right open and emits thus the object 14 of the rails.

Conclusions

1. Device to the front of a train to individuals who voluntarily or involuntarily on a train track for an approaching train there, right or left of the rails to throw through an infrared sensor that detects whether on the track is a living object and after that this signal with the ultrasonic sensor, the exact distance of the object determines living and depending on the driven speed of the train inside the bag into production. By the living object inside the bag then hit the airbag is filled out and throws the tilt of the airbags the living object to the right or left of the track.

2. Device according to claim 1 that the system on or off automatically when driving or stop the train or the driver of this one button to turn the system off.

3. Device according to claim 1 which is contained units with each unit in a single or dual airbag airbag system, one or two distance sensors and an air flow system to the remote sensors clean from dust, insects, leaves, rain and snow. At temperatures below zero, the flow of the heated air flow system to prevent freezing of the distance sensors to avoid.

The unit with the dual airbag system is triggered by signaling a living object by the sensor which first inner bag is filled with around off the second air bag directly filled as the first airbag the living object touched and the second air bag during the filling and tilt the living object left or right of the track casts.

The air supply to the sensors clean comes from a central compressor or fan in the train all the units on the front of the train with air or by means of a fan in each unit separately. Besides installing these units on the front of trains, including at least two left and two right and left and right above the individual level, these also on the front of trams and buses and other vehicles mounted.

4. Device according to claim 1, 2 and 3 that a living object with the disposal by the airbag system still largely on track ends, remove a bracket at the front of the train in a bracket system confirmed that, immediately after the airbags open its open position.

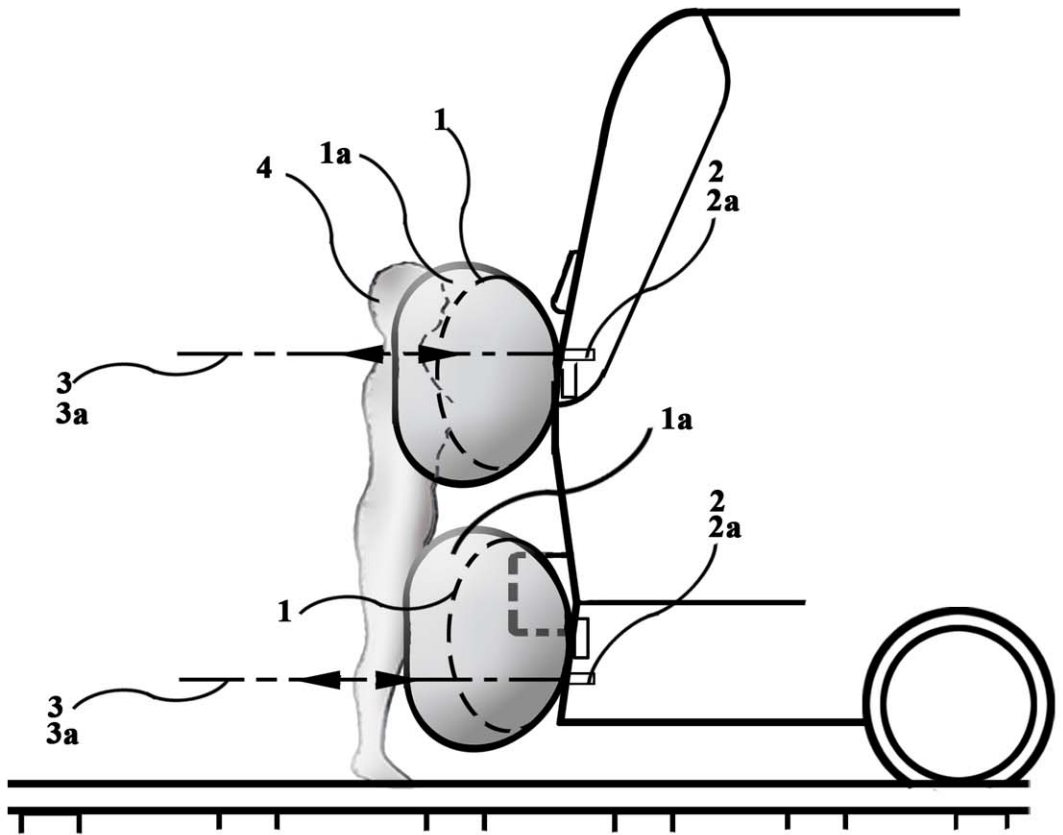
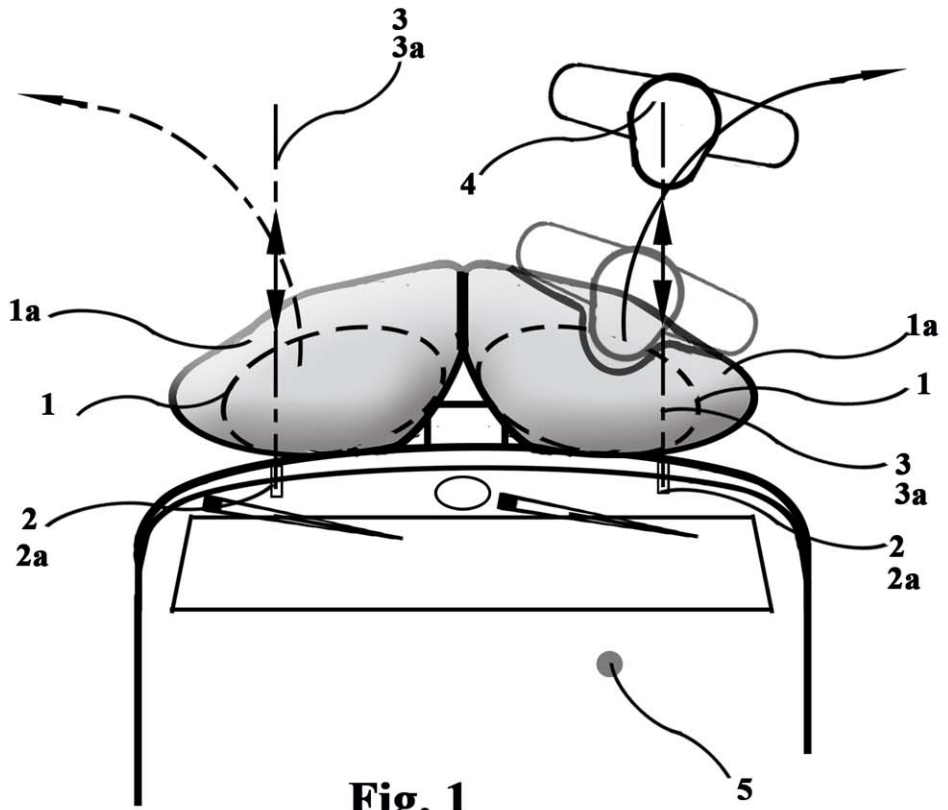
5. Device according to claim 4 comprising a bracket system which is independent of the airbag system into operation as inanimate objects on the rails by the ultrasonic sensors of the lower units are identified.

6. Device according to claim 4 and 5 consisting of bracket system under the front of a train attached. The bracket at each end with a U-shaped recess containing both sides four holes is attached to either side axle attached to a frame at the front of the train by two on each side standing lock. This lock is inserted into the holes of the bracket and the latch on one side open to slide the bracket out of the holes on the other hand, the hinge axis that is attached to the frame of the front of the train.

If, on the right side of the train, an object is detected by the beam of an ultrasonic distance sensor in the lower right unit, slide the lock into the holes on the left side of the bracket open. By the repulsion of the magnets for example the polar north-north-mounted on the frame of the train, and the magnets attached to the inside of the bracket, pull the bracket hinged to the right axis to the right open and emits thus the object of rails.

If, on the left side of the train, an object is detected by the beam of an ultrasonic distance sensor in the lower left unit, slide the lock into the holes on the right side of the bracket open. By the repulsion of the magnets for example north-north poles mounted on the frame of the train, and the magnets attached to the inside of the bracket, the bracket hinged to fold the left axis and emits thus left open the object of rails.

When the distance sensors of the two lower units together identify the item then the pre-open bracket.



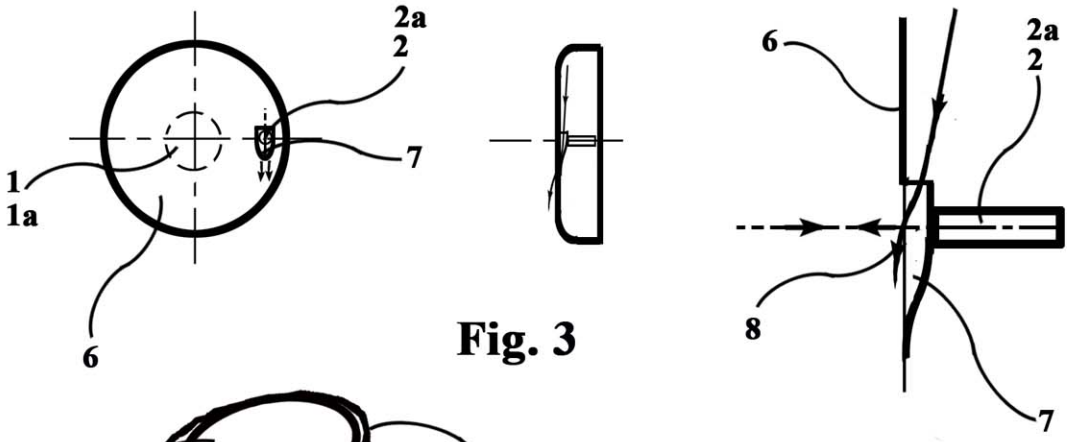


Fig. 3

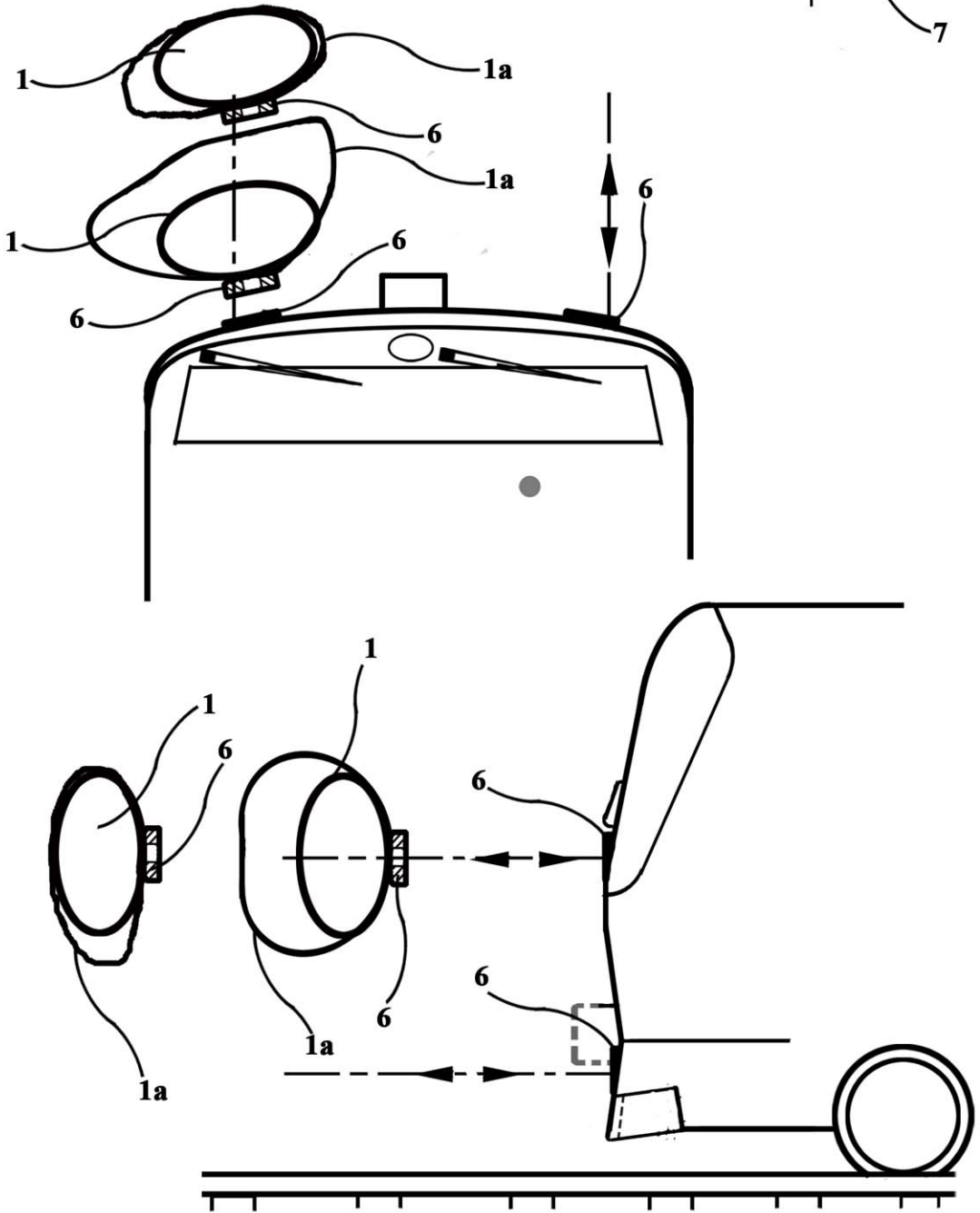


Fig. 4

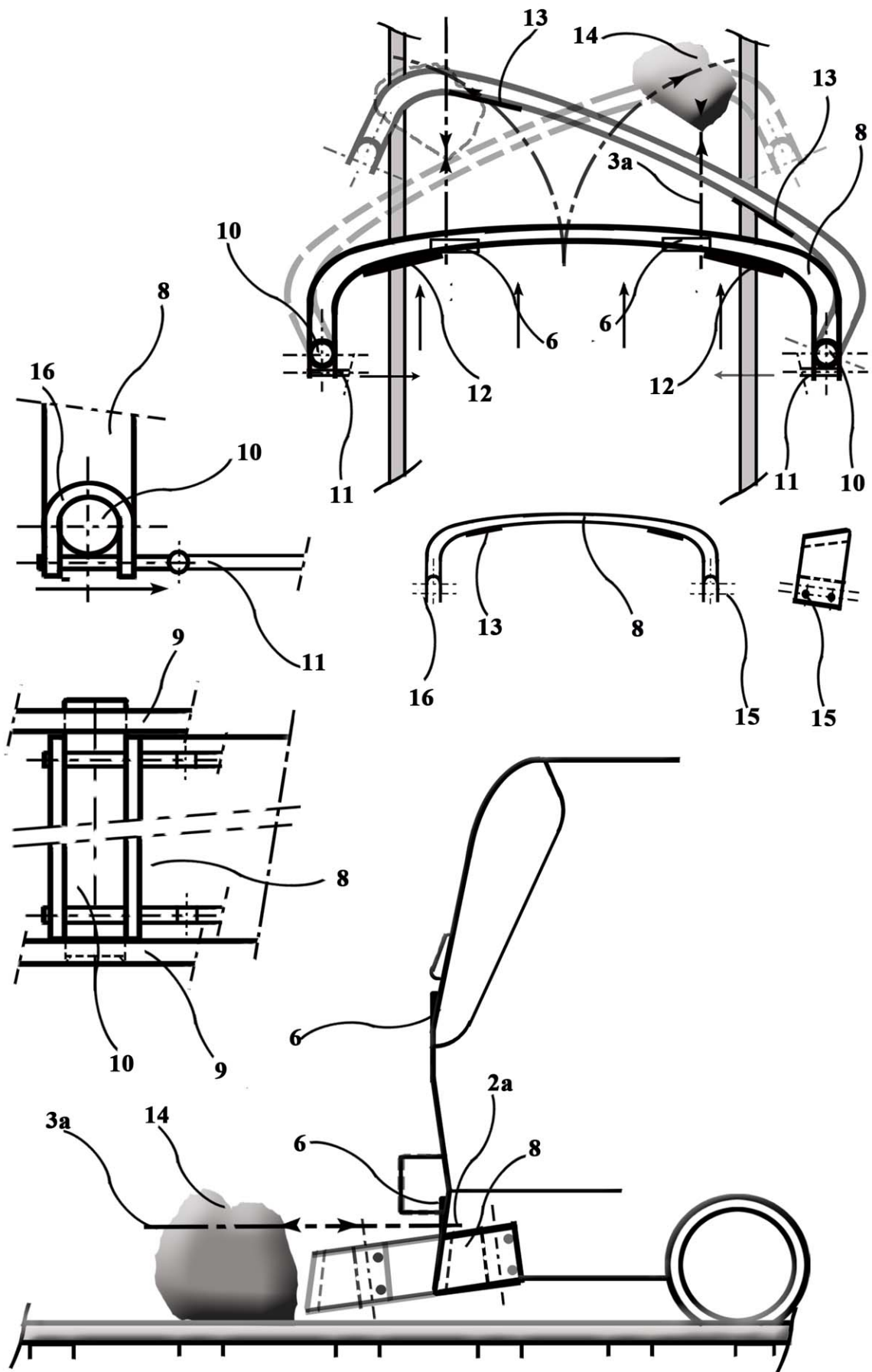


Fig. 5