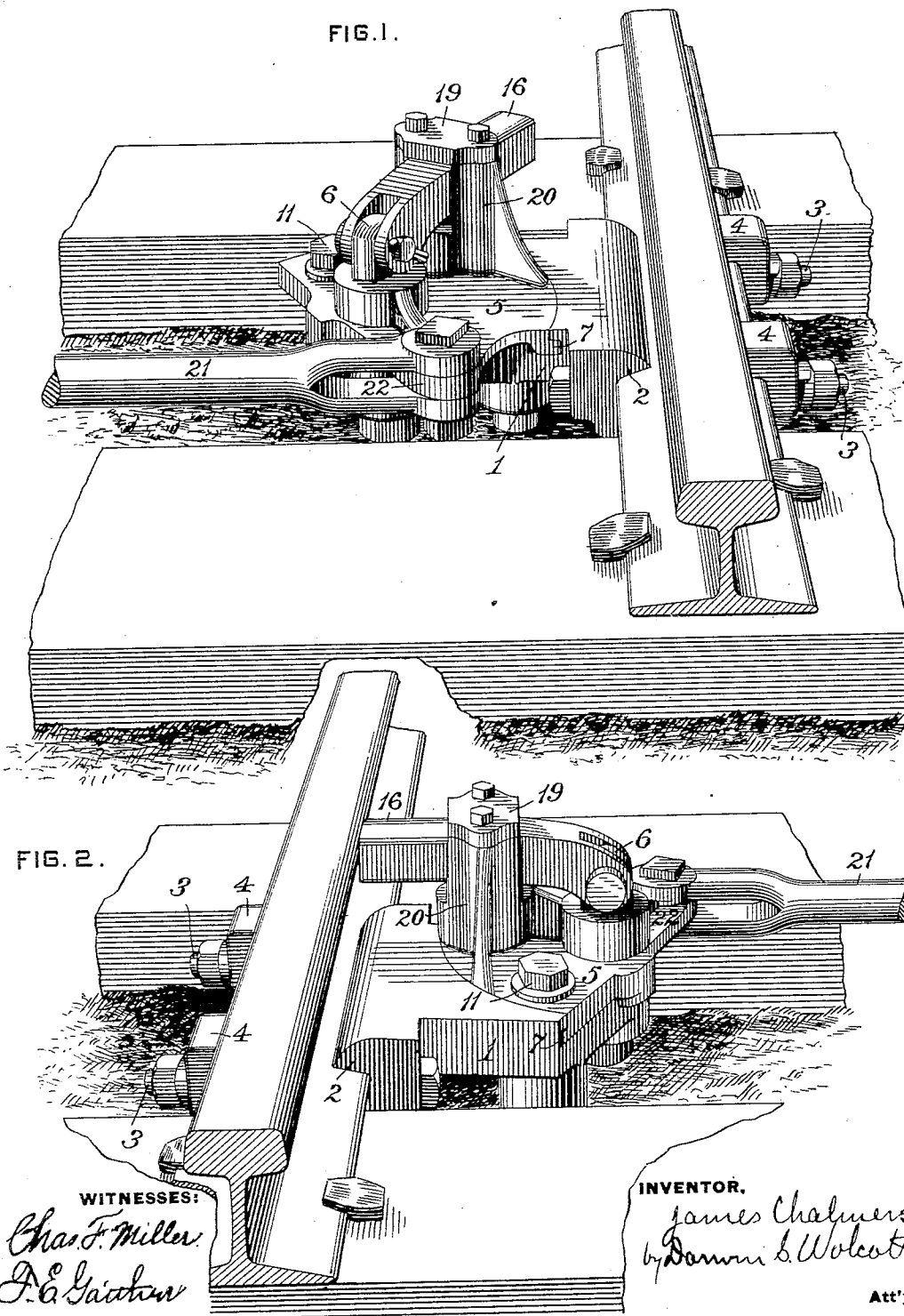


3 Sheets—Sheet 1.

No. 580,304.

Patented Apr. 6, 1897.

FIG.1.



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TORPEDO MECHANISM.

No. 580,304.

Patented Apr. 6, 1897.

FIG. 3.

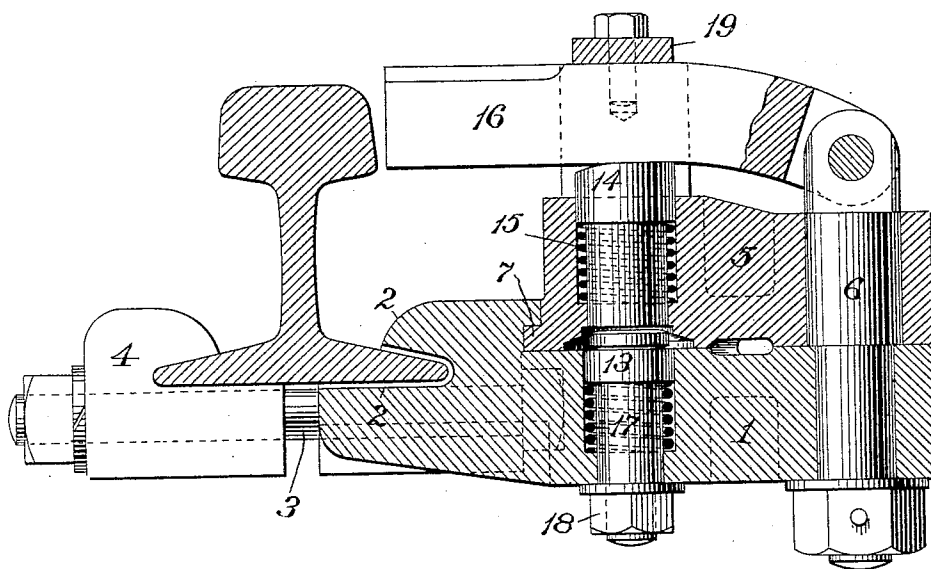
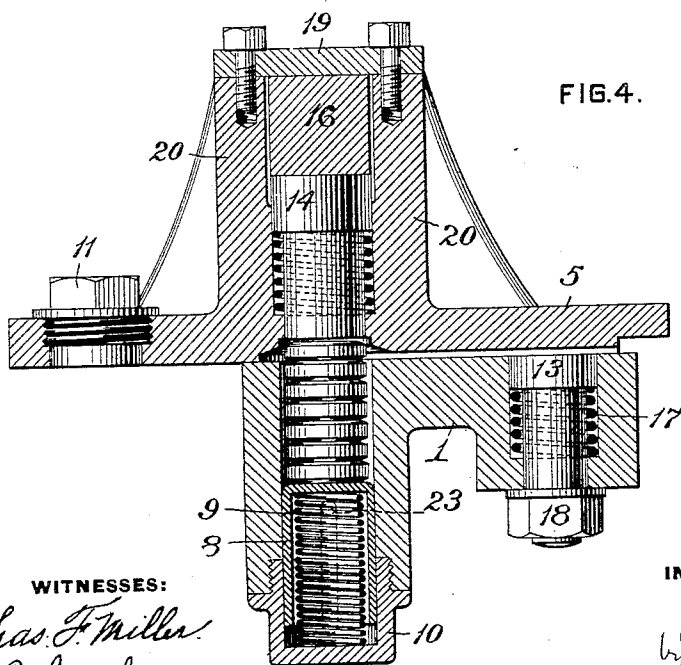


FIG. 4.



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No. 580,304.

Patented Apr. 6, 1897.

FIG. 5.

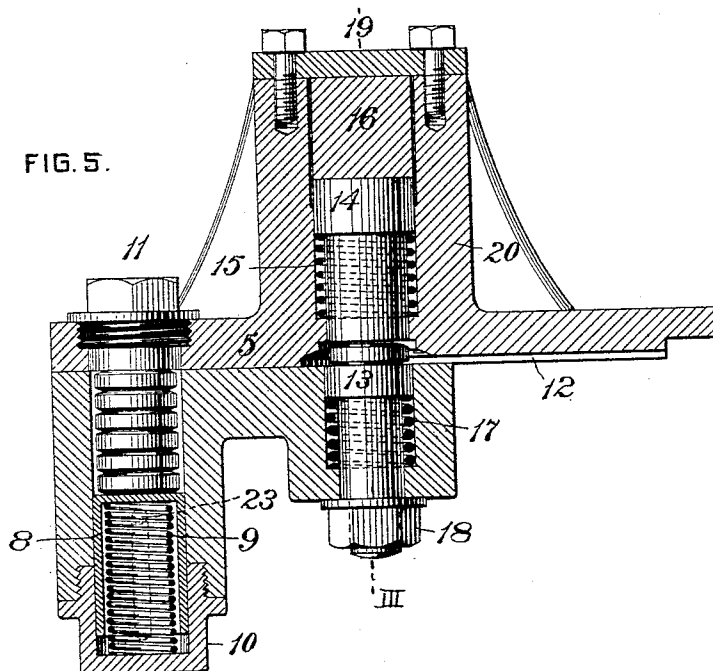
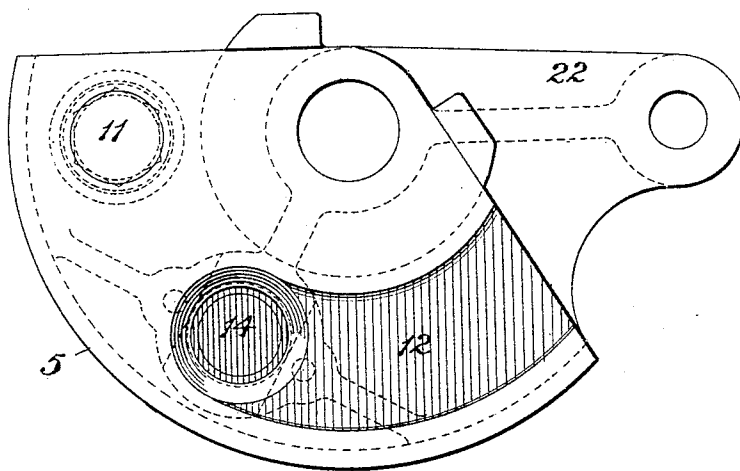


FIG. 6.



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UNITED STATES PATENT OFFICE.

JAMES CHALMERS, JR., OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO
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TORPEDO MECHANISM.

SPECIFICATION forming part of Letters Patent No. 580,304, dated April 6, 1897.

Application filed January 7, 1897. Serial No. 618,275. (No model.)

To all whom it may concern:

Be it known that I, JAMES CHALMERS, JR., a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Torpedo Mechanism, of which improvements the following is a specification.

The invention described herein relates to certain improvements in mechanism for bringing torpedoes singly from a magazine into such position that they will be exploded by the wheels of a train.

In general terms the invention consists in the construction and combination substantially as hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view showing the position of the torpedo mechanism corresponding to clear position of a signal. Fig. 2 is a similar view showing torpedo mechanism in position corresponding to danger position. Fig. 3 is a sectional elevation, the plane of section being indicated by the line III III, Fig. 5. Fig. 4 is a sectional view, the section being made in a plane passing through the axes of the magazine and anvil, the several parts being in the position shown in Fig. 1. Fig. 5 is a similar view, the parts being in the position shown in Fig. 2; and Fig. 6 is a plan view of the under side of the cap-plate.

The base 1 is preferably formed with jaws 2, adapted to fit in opposite sides of the rail-flange, and is held in position by bolts 3, passing under the rail and through blocks 4, provided with jaws to engage the opposite flange of the rail. This construction insures the retention of the mechanism in proper relation to the rail.

The upper face of the base is cut away or recessed to form a seat for the movable cap 5. This cap and its recess are preferably constructed so that the former will move in the arc of a circle on a pin 6, passing through the cap and base and serving to hold said parts together at one corner. The cap is provided along one edge with a lip 7, adapted to enter a groove in the wall of the recess in the base. A cavity or opening is formed in the base near one edge, of cross-sectional size

and shape, adapted to receive railroad-torpedoes. A follower 8, preferably in the form of an inverted cup, is placed in this opening and is forced upward by a spring 9, bearing against the follower, and a cap-nut 10, closing the lower end of the opening. Torpedoes are forced into this magazine through an opening in the cap, which is in line with the magazine when the cap is in the position shown in Figs. 2 and 5. The feed-opening in the cap is closed by threaded plug 11, of such a length that its lower end will be flush with the under side of the cap.

When the torpedo mechanism is in safety position, as shown in Figs. 1 and 4, a torpedo will be forced by the spring 9 into the closed end of a groove 12, formed in the under side of the cap, and as the cap is moved to danger position, as shown in Figs. 2 and 5, the torpedo will be shifted by the end wall of the groove 12 onto the anvil 13. A plunger 14 is arranged in an opening through the cap at the end of the groove 12, so that the plunger will be immediately above the torpedo and anvil when the cap is in danger position. This plunger is normally held in raised position by a spring 15, and is forced down to explode a torpedo by an arm 16, pivoted at one end on the pin 6 and resting on the upper end of the plunger. The arm is made of such a length that when the cap is in danger position the inner end of the arm will be closely adjacent the rail, and its upper side slightly above the surface of the rail, so that the plunger will be forced down by the treads of wheels moving along the rail.

As many wheels become grooved or worn away adjacent to their flanges, and their treads would therefore force the arm and plunger down farther than an unworn wheel, the anvil is formed by a plug passing through an opening in the base and supported with its upper end flush with the surface of the base by a spring 17. The plug is provided at its lower end with a threaded stem, on which is screwed a nut 18, adapted to prevent too great upward movement of the plug. The arm 16 is prevented from being thrown out of position by a bar 19, secured to the upper ends of the side guides 20.

The cap is shifted from charging to exploded

ing position, and vice versa, by any suitable means, as, for example, by signal-operating mechanism which is connected by a bar 21 to an arm 22, formed on the cap.

- 5 When the cap is swung around to safety position, a torpedo is forced up into the groove 12 immediately under the plunger, and when the cap is shifted to danger position the torpedo will be carried into the anvil and there
10 exploded by the wheels of the car operating through the arm 16 and plunger 14. When the cap is again turned to safety position, the shell of the exploded torpedo will remain in the anvil and will be pushed out of the groove
15 by the torpedo, which will be brought into position by the next movement of the cap to danger position.

In order to prevent the follower 8 being forced above the surface of the base 1, the
20 upward movement of the follower is limited by a pin 23, passing through the wall of the magazine and projecting into a slot in the wall of the follower.

It is characteristic of my improvement that
25 the arm or treadle is so mounted on and guided by projections on the cap that it will be moved by the latter outside of the plane of movement of wheels on the rail.

I claim herein as my invention—

- 30 1. In a torpedo mechanism for railways, the combination of a chamber or magazine adapted to hold a number of torpedoes, an anvil, a plunger movable to and from a position adjacent to the rails and adapted to be operated
35 by the wheels of a car, and a movable carrier for shifting the torpedoes from the magazine into position between the anvil and plunger, substantially as set forth.

- 40 2. In a torpedo mechanism for railways, the combination of a base provided with a chamber or magazine, a cap movably mounted on the base and adapted to shift torpedoes from the magazine to exploding position, a plunger carried by the cap and means operative by
45 the wheels of a car for forcing the plunger against the torpedo, substantially as set forth.

3. In a torpedo mechanism for railways, the combination of a base provided with a torpedo magazine or chamber, a cap movably
50 mounted on the base and provided on its under side with a groove or recess for the reception of a torpedo, a plunger arranged in an opening through the cap and an arm pivotally mounted on the cap and adapted to force
55 the plunger against the torpedo when depressed by the wheels of a car, substantially as set forth.

4. In a torpedo mechanism for railways, the combination of an anvil, a plunger and a treadle-arm for operating the plunger, said
60 parts being so mounted as to be capable of being shifted to bring the arm or treadle into and out of the plane of movement of wheels on the rail, substantially as set forth.

5. In a torpedo mechanism for railways, the
65 combination of a base provided with a torpedo magazine or chamber, a spring-actuated follower for forcing the torpedoes from the magazine, a cap pivotally mounted on the base and provided with a torpedo-receiving
70 groove, having an open end, a plunger arranged in an opening in the cap in line with the receiving portion of the groove and a pivoted arm or treadle resting on the plunger, substantially as set forth.

6. In a torpedo mechanism for railways, the
75 combination of a base provided with a torpedo magazine or chamber, a spring-supported anvil mounted in the base, a pivotally-mounted cap, a plunger arranged in an opening
80 through the cap, means for shifting a torpedo from the magazine to position between the plunger and anvil, and means operated by the wheels of a car for forcing the plunger against the torpedo, substantially as set forth.

In testimony whereof I have hereunto set
85 my hand.

JAMES CHALMERS, JR.

Witnesses:

DARWIN S. WOLCOTT,
F. E. GAITHER.