(No Model.)

F. D. GILDERSLEEVE.

EXPRESS CAR.

No. 516,007. Patented Mar. 6, 1894.

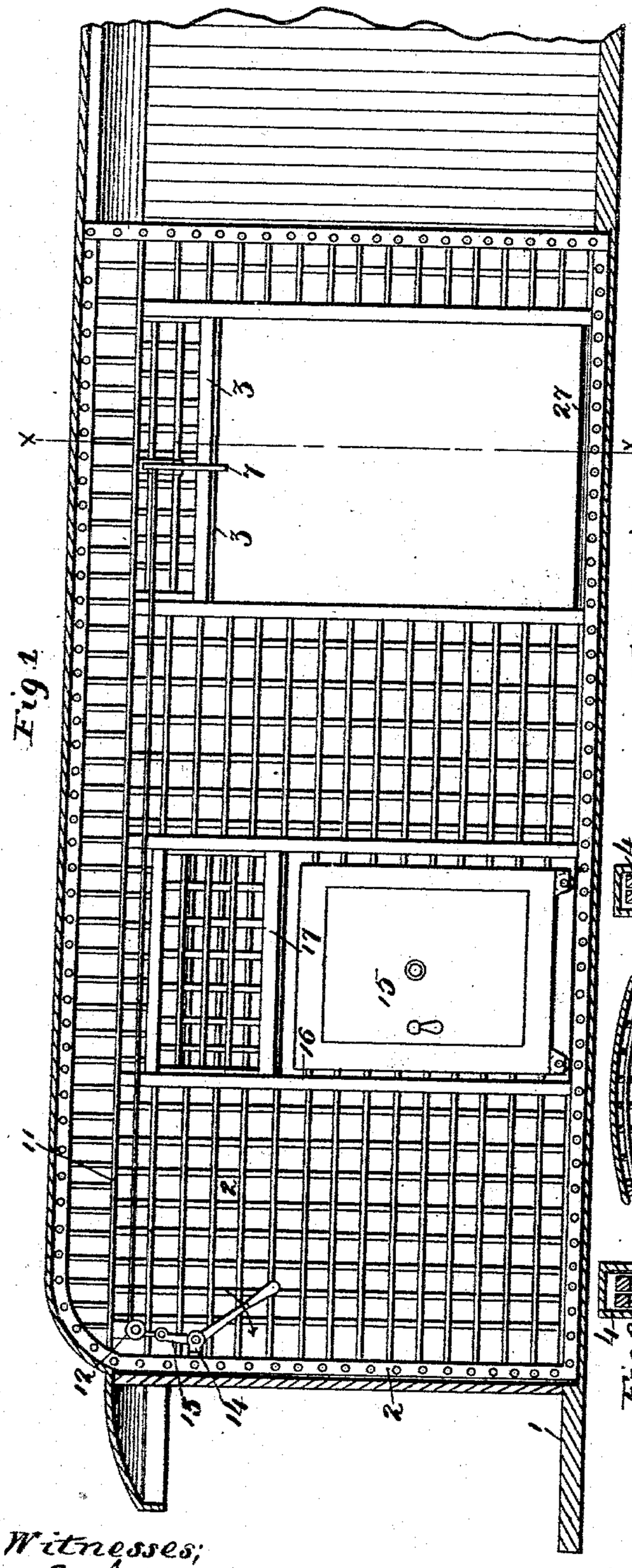

Fig. 1.

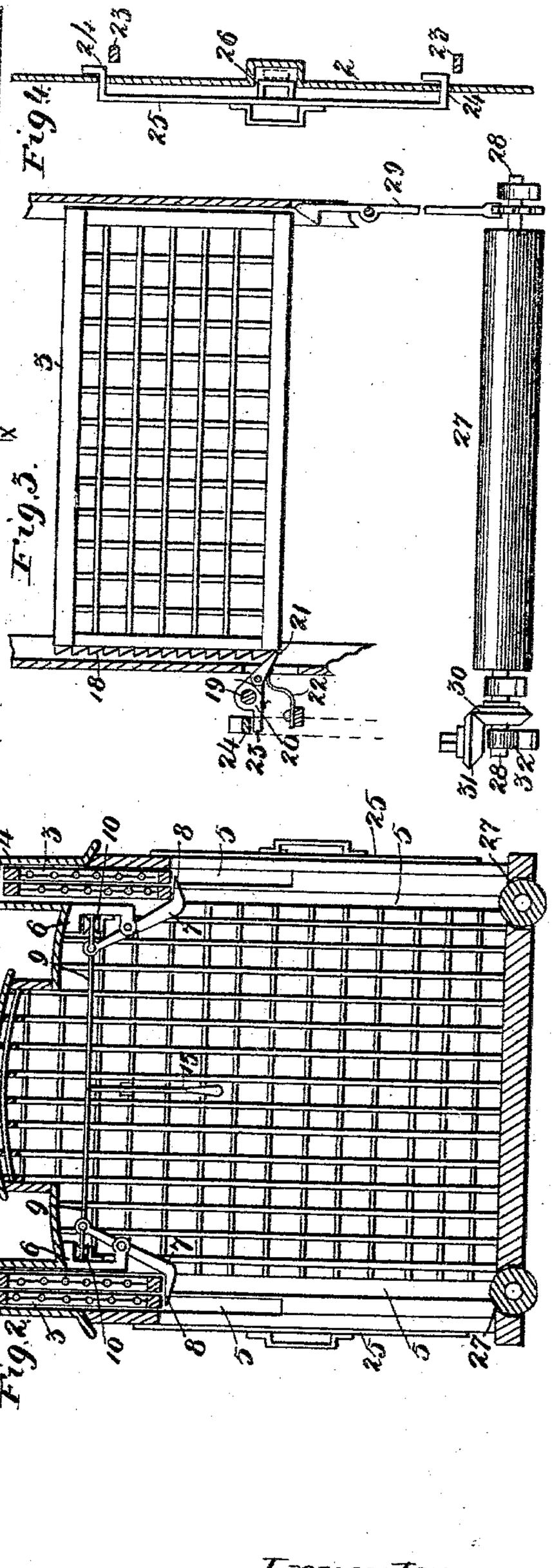

Fig. 3.

Fig. 4.

Fig. 2.

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FRANK D. GILDERSLEEVE, OF ST. LOUIS, MISSOURI.

EXPRESS-CAR.

SPECIFICATION forming part of Letters Patent No. 516,007, dated March 6, 1894.

Application filed December 6, 1893. Serial No. 492,895. (No model.)

To all whom it may concern:

Be it known that I, FRANK D. GILDERSLEEVE, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Express-Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My improvement relates to the construction of express cars and consists in the novel arrangement and combination of parts as more fully hereinafter described and designated in the claims.

In the drawings, Figure 1 is a vertical longitudinal section of a car containing my improvement. Fig. 2 is a vertical transverse section taken on the line *x*—*x* of Fig. 1 with the doors in an open position. Fig. 3 is a plan view of one of the doors, mechanism for locking the same and means actuated by the dropping of the door for releasing the spring roller journaled in the floor of the car; and Fig. 4 is a detail in section showing the mechanism which co-operates with the spring pawl for locking the door and the bolt of an ordinary combination lock (not shown).

The invention consists generally of a railway car constructed in the form of a cage and composed of a series of metallic bars of jail construction. This construction may be carried out at one end of the car only or that portion used by an express company, or the entire car may be composed of a frame of this character and the casing or wood work secured to the bars in any mechanical manner.

The invention further consists of metallic doors all of which are to be closed simultaneously by the manipulation of a single lever which may be located at any convenient position within the car and within easy reach of the express messenger. If found desirable a safe located within the car may be incased in a suitable metallic cage the front of which may be closed by suitable metallic doors which are also operated simultaneously with the closing of the doors previously referred to.

The object of the invention is therefore to allow the robbers access into the car and securely cage them within the same by the manipulation of the lever before referred to.

Referring to the drawings, 1 represents an ordinary express car within which a metallic cage 2 is built of any well known construction. In addition to the ordinary sliding doors usually employed, two or more metallic doors 3 are used, which when in an open position are partially located within boxing 4 projecting beyond the roof of the car. The doors 3 as before stated are also metallic and of such a weight as to fall instantly by gravity when released by the mechanism hereinafter to be described, said doors moving freely within metallic guides 5. Secured to the roof of the metallic cage are brackets 6 the lower ends of which form bearings for the lever 7. The lower ends of the said levers are hooked shaped as shown at 8 upon which the doors 3 rest when the same are in an open position. Attached to the upper or free ends of said levers are wire ropes 9 which pass over pulleys 10 journaled in the brackets 6 and said ropes lead to the center of the car and are attached to a single rope or rod 11 which passes over the pulley 12 the free end of which is attached to the upper end of a lever 13 which lever is pivoted to a bearing 14 attached to the cage. It will thus be seen that by operating the lever 13 in the direction as shown by the arrow in Fig. 1, the hooked ends 8 of the lever 7 will be moved from under the doors 3, thus releasing them from their elevated position and allowing them to instantly fall by gravity.

15 represents an ordinary safe which is partially inclosed by a metallic cage 16 the same being wholly inclosed by dropping the metallic doors 17 in a similar manner to the doors 3, the same being actuated by the lever 13 simultaneously with the dropping of the doors 3, similar mechanism being employed and co-operating with the rope 11.

Referring to Fig. 3 it will be seen that one edge of the doors is provided with a rack bar 18, and secured within the stationary part of the car and suitably incased are spring-actuated pawls 19 to which are fixed spindles 20 which project either inside or outside of the car whereby they may be rotated in the direction as shown by the arrow when the same are released from a locked position and thus allow the door to be elevated or opened. The engaging ends 21 of the pawls 20 are movably secured to the pawl proper and bearing

against said ends are springs 22 for holding the same in engagement with the rack bars 18, thus allowing the doors to drop but preventing the same from being elevated without rotating the entire pawl. From the pawls 20 are extensions 23 with which co-operate the extensions 24 of a plate 25. Said plate 25 is movably secured to that portion of the cage adjacent to the edges of the doors and when pulled out in position as shown in Fig. 4 the extensions 24 forming a part thereof are moved from over the extensions 23 of the pawls 20, thus allowing the pawls to be turned for releasing the doors from their locked position, but when said plate is shoved in so as to bring the extensions 24 in contact with the extensions 23 of the pawl 20 as shown in Fig. 3, said pawls cannot be rotated and consequently the doors 3 will be held in a locked position. In order to prevent the plate 25 from being pulled out for releasing the pawls 20, a staple 26 is secured to the same which receives the bolt of an ordinary combination lock (not shown), and therefore the extensions 24 of said plate are caused to remain over the extensions 23 of the pawls 20. In practice the plate 25 is shoved in and the bolt of an ordinary combination lock passed into the staple 26 forming a part thereof, and the pawls 20 will then be in a position to cooperate with the rack bars 18 of the doors 3 when the same are dropped from their elevated position by the manipulation of the lever 13. It is supposed that the combination is only known at the terminal stations, and therefore should robbers enter the car the messenger on throwing the lever 13 will lock himself within the car as well and neither the robbers nor the express messenger can be released until the car has arrived at such station.

It may sometimes happen that the robbers would place in the doorway of the car and immediately under the dropping doors 3 some obstructing object, thus preventing the doors from closing whereby they would not be secured within the cage; and to overcome this objection I employ the following mechanism: Journaled within the floor of the car immediately below the doors 3 and extending a suitable distance above the floor of the car are rollers 27 to the shaft 28 of which is fixed a toothed wheel with which co-operates the lower end of a pawl 29, said pawl being pivoted to the cage adjacent to the guides 5 for the door. The upper ends of the pawls when in their normal position are in the path of the upper doors 3, whereby the instant dropping of said doors will move the lower end of the pawl out of contact with the toothed wheels. Also fixed to the shaft 28 is a bevel gear wheel 30 which meshes with a similar gear 31 journaled in the floor of the car, said last named gear being turned by a suitable crank for rotating the rollers 27 in one direction. Secured to any stationary part of the car is a volute spring 32 which co-operates with the shaft 28 of the roller 27 and revolves the said roller when released by the pawl 29. In practice the roller is turned to wind up the spring and is held in position by the pawl 29 until the car is attacked by robbers, and thus should an object be placed within the path of the dropping doors, the doors on dropping will release said rollers causing the same to be turned by the springs 32 and thus cast off the said obstruction, allowing the doors to drop to their full extent. In carrying out my invention I do not limit myself to the employment of rollers for the purpose stated as other devices may be used to accomplish the same result, the principal object of the invention being to securely cage the robbers after they have entered the car, and convey them to a suitable point along the road where they may be removed and arrested.

In carrying out my invention it may be found desirable to use a separate rope such as 11 and lever for closing the doors of the burglar-proof inclosure for the safe, which lever can be located in close proximity to the lever 13 for operating or closing the burglar-proof doors of said inclosure independent of the car doors, whereby the safe in the car will be protected in case the express messenger finds it impossible to close the car doors after the robbers have gained access to the interior of the car. The closing of the doors of the inclosure may also be performed by the same lever which operates the car doors, and yet not operate all the doors simultaneously as before stated. For instance a slight movement of the lever will allow the car door to close and a further movement of the lever in the same direction will afterward close the door of the inclosure for the safe. The principal object I have in view is to construct a burglar-proof car, doors of like construction which are normally open whereby the robber is allowed access to the interior of the car, a burglar-proof inclosure within the car for the safe, burglar-proof doors for said inclosure, and mechanism so devised that all the doors may be operated simultaneously or singly for the purposes set forth.

The general construction of the car and all mechanism pertaining thereto may be effectually used in banks or other buildings where valuables are kept.

Having described my invention, what I claim is—

1. An express car composed of a series of metallic bars, vertically operating doors of like construction and normally elevated, suitable mechanism for holding said doors in an elevated position, means for releasing said doors, and a lock for the doors, substantially as set forth.

2. An express car composed of a series of metallic bars, vertically operating doors of like construction and normally opened, suitable mechanism for holding said doors in an elevated position, an inclosure within the car

for the reception of a safe and composed of a series of metallic bars, vertically operating doors for the same, and mechanism co-operating with all of said doors for releasing the same from their elevated positions simultaneously, substantially as set forth.

3. In an express car, of burglar-proof construction, vertically operating doors, a burglar-proof inclosure within the car, vertically operating doors for the same, and means for overcoming an obstruction placed in the path of the first named doors, substantially as set forth.

4. In an express car of burglar-proof construction, like doors for the same, and means actuated by said doors for removing an obstruction located in the path of said doors, substantially as set forth.

5. An express car of burglar-proof construction, like doors for the same, means for closing said doors simultaneously, ratchet teeth forming a part of said doors, spring-actuated pawls movably fixed to the stationary part of the car and co-operating with said ratchet teeth, means also co-operating with said pawls for holding the same against rotation, and a lock, substantially as set forth.

6. In combination with an express car of burglar-proof construction, doors for the same, and a spring-actuated roller mounted in the path of the doors, substantially as set forth.

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

FRANK D. GILDERSLEEVE.

Witnesses:
JAMES J. O'DONOHOE,
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