Oct. 21, 1924. 1,512,632

M. S. S. O'CONNOR

FASTENING MEANS FOR RAILWAY WAGON DOORS AND THE LIKE

Filed May 3, 1922 4 Sheets-Sheet 1

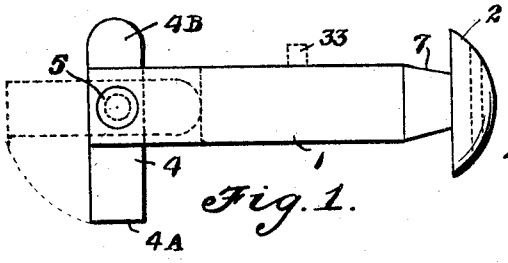


Fig. 1.

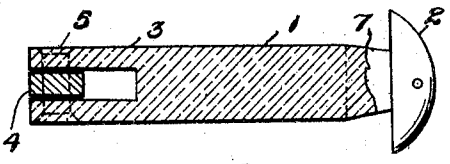


Fig. 2.

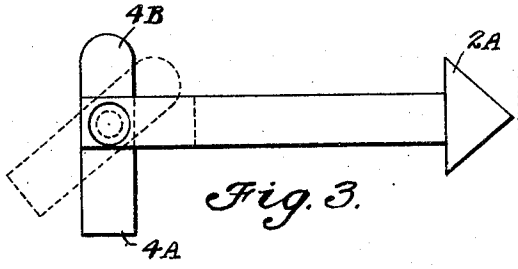


Fig. 3.

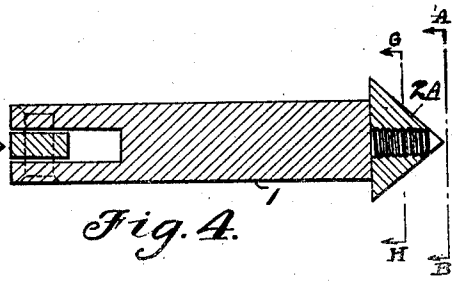


Fig. 4.

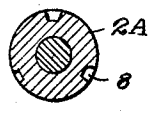


Fig. 6.

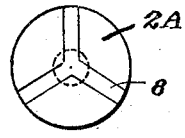


Fig. 5.

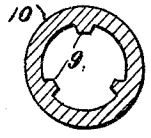


Fig. 10.

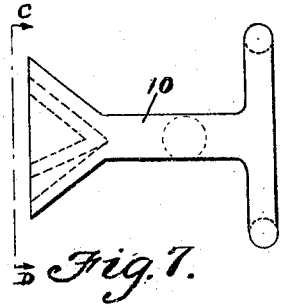


Fig. 7.

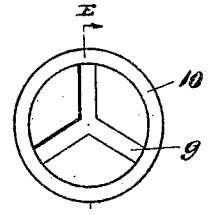


Fig. 8.

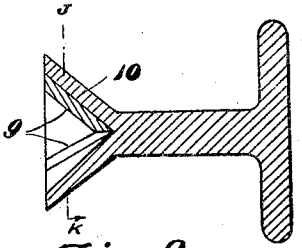


Fig. 9.

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FASTENING MEANS FOR RAILWAY WAGON DOORS AND THE LIKE

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Fig. 11.

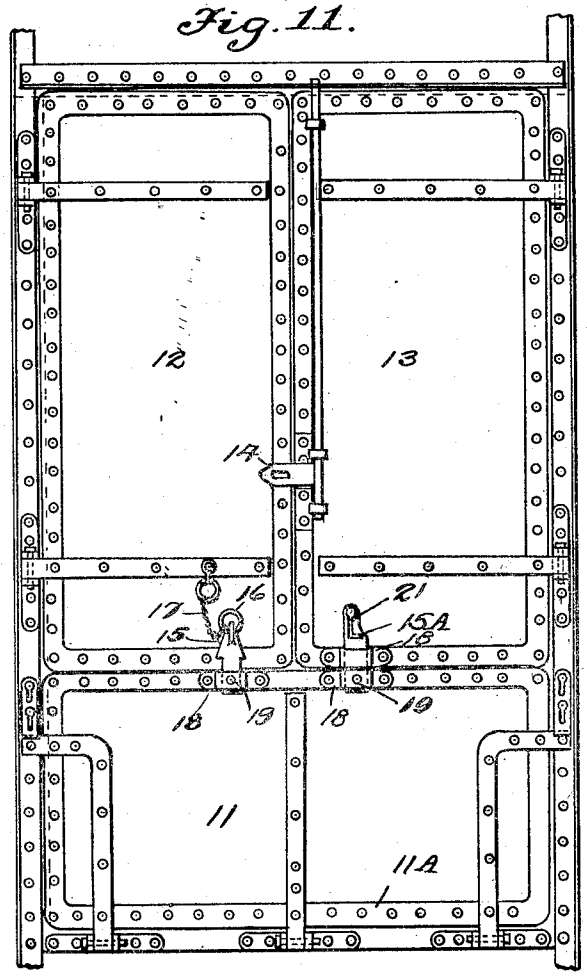


Fig. 12.

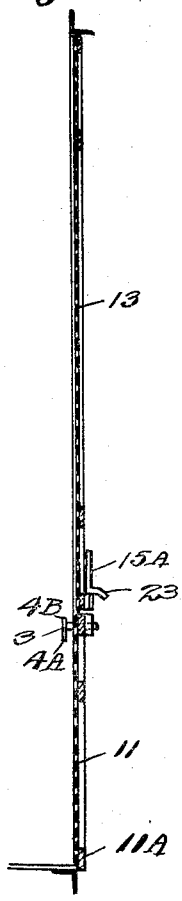


Fig. 13.

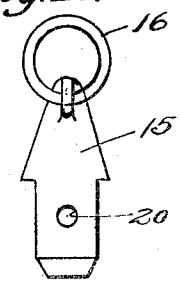


Fig. 14.

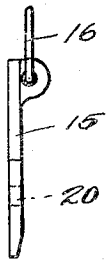


Fig. 15.

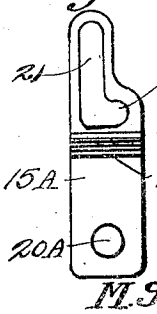
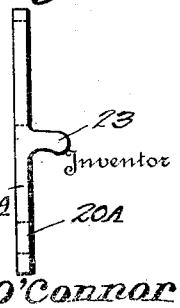


Fig. 16.



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FASTENING MEANS FOR RAILWAY WAGON DOORS AND THE LIKE

Filed May 3, 1922 4 Sheets-Sheet 3

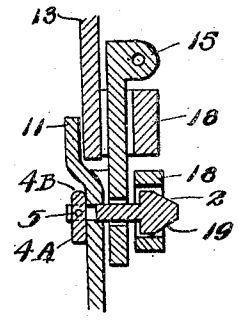


Fig. 17.

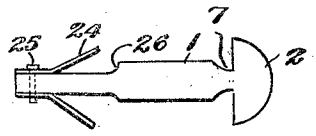


Fig. 18.

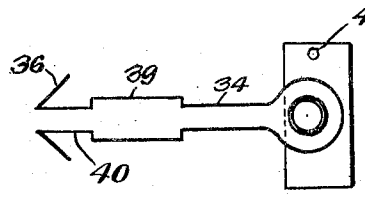


Fig. 19.

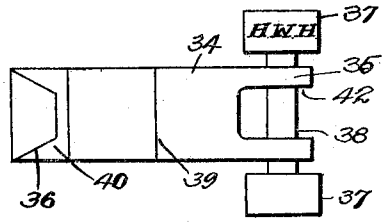


Fig. 20.

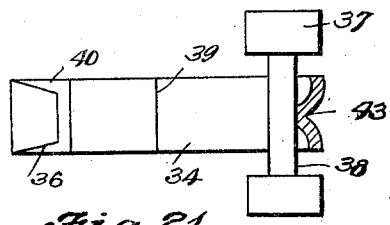


Fig. 21.

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FASTENING MEANS FOR RAILWAY WAGON DOORS AND THE LIKE

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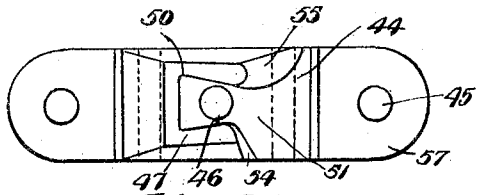


Fig. 22.

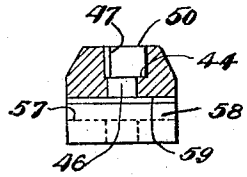


Fig. 23.

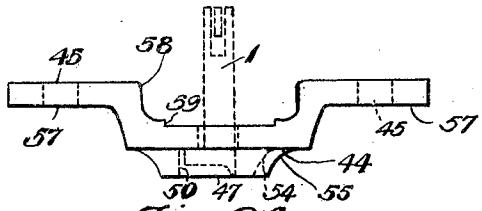


Fig. 24.

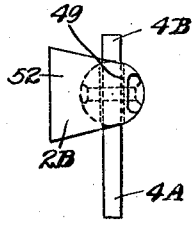


Fig. 25.

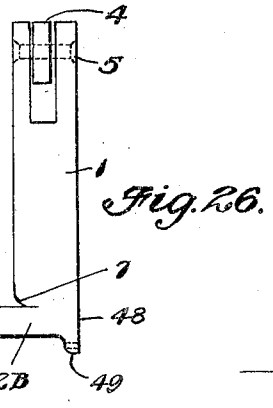


Fig. 26.

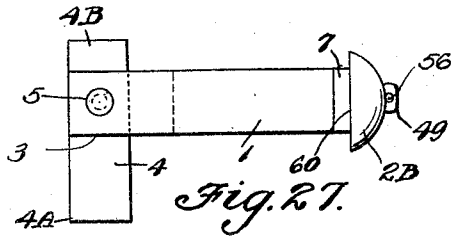


Fig. 27.

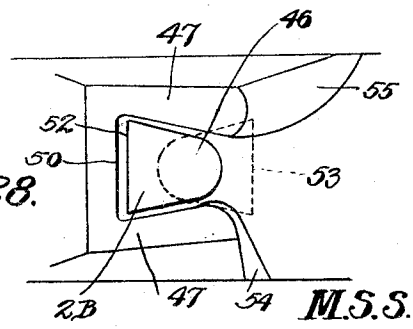


Fig. 28.

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Patented Oct. 21, 1924. 1,512,632

UNITED STATES PATENT OFFICE.

MALCOLM STUART SCOTT O'CONNOR, OF LUCKNOW, UNITED PROVINCES, INDIA.

FASTENING MEANS FOR RAILWAY-WAGON DOORS AND THE LIKE.

Application filed May 3, 1922. Serial No. 558,279.

To all whom it may concern:

Be it known that I, MALCOLM STUART SCOTT O'CONNOR, a subject of His Majesty King George V, and whose address is at Lucknow, Oudh & Rohilkhand Railway, United Provinces, India, have invented Improvements in or Relating to Fastening Means for Railway-Wagon Doors and the like, of which the following is a specification.

The object of this invention is to provide improvements in or relating to fastening means specially applicable to the doors of railway wagons. The invention may be applied to other doors as well as railway wagon doors.

The fastening means according to this invention is one which is applied to the door from the outside and which, partly passing through an aperture in the door, automatically locks the same on the inside, either by means of a device actuated by gravity or by a spring controlled means, in such a way that the door cannot be opened until the head of the fastening means, which is on the outside of the door, is removed.

The fastening means consists essentially of a bolt, rivet-like member or a spring, having a head adapted to remain on the outside of the door, a shank extension or body which passes through the door and an engaging device pivoted at, fixed near, or forming part of the point of the said shank, extension or body. The engaging device generally is one which is actuated by gravity, but may be operated by or be a spring.

Two general modifications of the fastening "bolt" are used. In the first the head of the bolt is made integral with the shank and has to be broken off to open the door when it has once been used. This type is applicable in railway practice for use with through wagons i. e. wagons which are booked from their despatching stations to a definite destination and which do not have to be opened in transit.

In the other modifications a removable head is used, which head requires the use of a key or appliance specially shaped to fit the head in order to remove it.

The invention will be described with reference to the accompanying drawings in which like numbers of reference indicate like parts throughout, and in which:—

Figure 1 is a side elevation of a fastening means having a head integral with the shank;

Figure 2 is a section of the same;

Figure 3 is a side elevation of a fastening means having a removable head;

Figure 4 is a section of the same;

Figure 5 is an end elevation of the head on line AB;

Figure 6 a cross section on line GH;

Figure 7 is an elevation of a key for operating a bolt head as shown in Figures 3 to 6;

Figure 8 is an end elevation of the key on line CD;

Figure 9 is a section on line EF of Figure 8;

Figure 10 is a section on line JK;

Figure 11 is a general elevation of a railway wagon door fitted by way of illustration with two locking means;

Figure 12 is a cross section of the same;

Figures 13 and 14 are a front and side elevation of a cotter used in fastening the three parts of a door;

Figures 15 and 16 are similar views of another type of cotter;

Figure 17 is an enlarged section showing the fastening means applied to a door;

Figure 18 is an alternative type of fastening means;

Figures 19, 20 and 21 are a side view, plan and section of modified fastening means;

Figure 22 is a front elevation of a cotter bracket with a guard attached according to this invention;

Figure 23 is a top view of same showing in dotted lines a fastening means as fixed in securing position;

Figure 24 is a section on line LL of Figure 1;

Figure 25 is a plan and Figure 26 a side elevation of a fastening means with certain improvements added to admit of its co-operating to the best advantage with the above cotter bracket;

Figure 27 is an end view of the fastening device; and

Figure 28 a diagram explaining one of the points in which improvement has been effected.

In these figures the fastening bolt in its simplest form consists of a shank 1 and a head 2. The shank will preferably be made rectangular in section or have its sides flattened to prevent the bolt being rotated

in the hole through which it is passed to fasten a door. The point of the shank may be forked at 3 and have the engaging device 4 pivoted therein. This engaging device consists of a cross arm pivoted on pin 5, one end 4^A of the arm being considerably longer and heavier than the other end 4^B with the object that when the point of the shank 3 carrying the cross arm is passed through the aperture in the door with the pivot pin 5 horizontal the longer end 4^A of cross arm will cause such arm to take up a vertical position. In such position the cross arm will prevent the fastening means being withdrawn as both ends of the arm will engage the inner side of the door 6 on an attempt to withdraw the bolt being made.

The embodiment shown in Figures 1 and 2 is adapted to be only used once and to be destroyed when the wagon door is to be reopened, to effect which purpose the head 2 of the bolt is struck off. To enable this to be done by a sharp blow from a hammer or by the use of a hammer and chisel the shank of the bolt just behind the head may be reduced as shown at 7 so that the reduced section at this point may be broken through without an excessive application of force.

In certain cases where it is desired to fasten a wagon door in such a manner that the same may be opened at wayside stations the head 2^A of the bolt is made to screw onto the shank as shown in Figures 3 and 4. In such case it is essential that the head should not be capable of being unscrewed by means of an ordinary spanner or wrench which might be in the hands of unauthorized persons and railway thieves. The head is accordingly made of such a shape that the use of a key shaped to fit the head is needed to unscrew the same.

In the embodiment shown in Figures 3 to 9 the head 2^A is made conical in shape so that it will be difficult to grip the same with an ordinary spanner or wrench. Grooves 8, 8 are made in this conical surface adapted to be engaged by corresponding ridges 9, 9 on the inner surface of the key 10.

In Figures 11 and 12 a wagon door is shown and the means whereby the wagon may be completely closed and securely fastened by means of a single fastening bolt of the kind herein described.

The wagon door consists of three parts. The flap 11 hinged along its lower horizontal edge 11^A and the two leaves 12 and 13. Of these it is assumed that the flap is constructed to close first, then the leaf 12 and finally the leaf 13.

After the parts of the door are closed in this order a single cotter 15^A dropped into the staples 18, 18 fixed to the leaf 13 and flap 11 as long as such cotter is in place effectively secures the whole door.

As the door on the further side of the wagon can be closed and fastened on the inside (wagon doors being fitted with bolts on the inside for this purpose) it then follows that a single cotter dropped into the staples on the near side will secure the wagon.

Now according to this invention the cotters used have a hole, notch or slot therein for the passage of the fastening bolt 1. When a cotter is in position to hold the door closed the hole in the cotter registers with a hole in the door, and a fastening bolt being pushed through these holes will secure the cotter in place because directly the point of the shank of the bolt has passed sufficiently far through and beyond the inner side of the door the engaging device operates. As long therefore as the cotter is in place the door will be securely locked.

The distance between the back of the head of the bolt and the engaging arm in its operative position may exceed the thickness of the cotter and the door by slightly more than the length of projection of the shorter end of the engaging arm to enable the shank of the fastening bolt to be pushed in sufficiently far to allow the engaging arm to fall.

It is necessary for the fastening bolt to be inserted with its pivot pin 5 horizontal. The bolt shank may be made rectangular in section so as to assist in locating the direction of the pin. The hole in either the door itself, the cotter or the staple—or in any one or all of these parts may with advantage be made of a similar shape to fit the shank closely and to obviate any possibility of a wire or feeler being passed in.

The fastening pin may or may not pass through the staple.

In Figures 13 to 16 two usual types of cotters are shown which can be used. Figures 13 and 14 show a cotter 15 attached to the wagon in a usual way by means of a ring 16 and chain 17. The cotter is passed into or through staple 18 so that the hole 20 in the cotter registers with the hole 19 in the staple and also with the hole below through the door. In this instance the hole 20 in the cotter is made rectangular to fit closely a fastening bolt with a similar shaped and sized shank. The hole 19 in the staple 18 may be similar.

It will however be obvious that cotters used on railways are rather rough and heavy and do not fit with exactitude. It is therefore preferable that the hole 20 in the cotter should be of ample dimensions so that no nicety of adjustment will be called for, the hole in the wagon door being the one which fits the shank of the fastening bolt with substantial accuracy.

The hole 19 in the staple, if the fastening pin is adapted to pass through the staple also, may be made to fit the shank of the

fastening bolt with accuracy because this hole will not move relatively to the hole in the door itself being made in a part which is firmly riveted to the door.

In Figures 15 and 16 another and more recent type of cotter 15A is illustrated in which the ring and chain fastening is replaced by an L shaped slot 21 notched at 22 to be hooked upon a rivet connected to the door. In this case a larger hole 20A is shown in the cotter allowing of greater play. The lug 25 supports this cotter in its proper position.

In Figure 11 two sets of cotters are illustrated by way of example but it should be clearly understood that one set would be sufficient—being that set which secures the leaf of the door constructed to be closed last. Assuming that this leaf is the one marked 13 only cotter 15A (shown on the right) would be needed in actual practice. The extra fastening means shown on the left is only by way of illustration.

Two staples 18, 18 as shown on the right of the Figure 11 may be used or if preferred only one staple as shown on the left.

In Figure 17 another modification of the fastening means is shown in section, in which the cotter 15 passes through two staples 18, 18.

The hole 19 in the lower staple is, in this embodiment, made sufficiently large to allow the head 2 of the fastening bolt to enter. One object of this is to make it more difficult to tamper with the fastening device. In Figure 17 such play is insufficient for the head 2 of the fastening bolt to clear the hole 19 in the staple 18. As the head may be made to fit the hole 19 fairly closely a wire or feeler could scarcely be forced in as it would have to negotiate several corners. It will be noted in this figure that the clearance in the hole in the cotter itself may be made relatively large without danger. The head of the bolt in this last case should project sufficiently far beyond the outer surface of the staple to allow of the head being broken off with a sharp blow from a hammer, and to facilitate this the shank adjacent to the head may be conveniently reduced in section as shown at 7 in Figure 1.

Figure 18 shows an alternative type of fastening bolt. In this the cross head 4 is replaced by a spring means. In the embodiment shown two springs 24, 24 are connected by rivet 25 to the shank. A depression 26 in the shank may allow the springs to lie close to the shank while the fastening means is being forced into position. In this type the head 2 is adapted to be broken off to reopen the door. When spring means are used no longitudinal play need be allowed for.

Figures 19, 20 and 21 show a further embodiment in which a single piece of spring steel 34 is used. This spring has its two ends 36, 36 turned back and so fashioned that after closing flat against the body of the spring in being forced through the opening in the door they will again fly out when beyond the hole and engage the inner side of the door.

The spring may have a part 35 rounded or shaped to fit the reduced central portion of a cross head or equivalent 38, said cross head or the like being a separate piece having two enlarged ends 37, 37 connected by a reduced central portion 38. The construction may be such that these cross heads may be renewed, the spring having sufficient flexibility to allow of this. In use then the spring fitted with a cross head is forced through a hole in the cotter and door (or through staple, cotter and door if preferred) and engages in the obvious manner. Such spring when once in place cannot be removed by anyone operating from the outside of the door until the cross head is broken and withdrawn. To facilitate the removal of the cross head the spring may have a slot 42 adapted to allow a chisel to be used to cut through the reduced central part 38 of said cross head permitting same to be removed in two parts. The spring part may thus be used again and again, each time a relatively cheaply made cross head being supplied and destroyed. To fit the sides of the hole conveniently closely the spring may have a bulge or be suitably shaped as at 39—the sides of this bulged portion fitting the sides of the hole closely.

Beyond said bulged portion 39 may be a recess 40 in the outside contour of the spring into which recess the spring ends 36 are depressed when the fastening means is being pushed into position.

It will be seen that the part which is destroyed each time the door is fastened is the cross head 37, 38 which is relatively cheap to make. This cross head may have a hole or holes 41 made in some convenient part or parts of it to enable a label to be fastened to the same. Further as these cross heads will be issued to despatching stations by thousands it will be possible to stamp each cross head with the code initials of the despatching stations to which it is issued, or they may be otherwise stamped or marked for identification purposes. This will itself be a safeguard helping to furnish a clue if any fastening is found to be tampered with.

It will be seen that in this embodiment to open the door the relatively thin neck 38 has to be broken. In Figure 23 a modification of the spring is shown in section wherein the material forming the spring is depressed at 43 so as to be of V shape. This metal being of hard, tempered spring-steel the sharp V will break through the neck 38 of the cross head on being struck sharply

with a light hammer and the wedging action of the V will cause the two ends 37, 37 to be ejected to disengage the fastening means without further trouble.

In the modifications shown in Figures 24 to 30 the cotter bracket has a raised central part 44 adapted to embrace and form the socket for the cotter. The bracket is provided with two holes 45, 45 for riveting or bolting it to some convenient part of the door or wagon.

A hole 46 is provided through the bracket which registers with a corresponding hole in the cotter itself (when the same is in place) and in the door or part of the structure to which the bracket is fixed. This hole is for the purpose of passing the shank of the fastening means through—such shank passing in turn through the cotter bracket, cotter and door, part or structure beyond, and its point thereafter projecting sufficiently far beyond the further side of said door or part that the pivoted cross head will by gravity take up a perpendicular position and automatically secure the fastening means on the inside of the wagon. Where the pivoted cross head is replaced by a spring or spring actuated engaging means such embodiment can equally well be used.

To protect the head of the fastening means projecting guard walls are provided preferably integral with the bracket. These guard walls comprise two side walls 47, 47 and an end wall 50, the fourth side being left open at 51 to enable the head of the fastening means to be severed by the use of a hammer and narrow-edged chisel.

Where the two side walls join the end wall 50 the clear distance between the walls is greatest, and these side walls approach each other so as to be slightly more than the width of the shank of the bolt apart opposite to section LL, and to approach slightly closer still to the right of this section. The object of this is that a recess may be formed the sides of which will closely embrace the head 2^B of the fastening means, which head is conveniently shaped as clearly seen in Figures 25 to 27. In inserting the fastening means in position the head must be turned with its projecting end 52 facing to the left as viewed in Figures 22 and 23.

The projection of the side walls 47, 47 beyond and to the right of section line LL in Figure 22 is for the purpose of preventing a fastening means being inserted with its projecting head facing in the opposite direction (as shown dotted at 53 in Figure 28) the construction being such that if an attempt be made to insert the fastening means with the head projection facing to the right the said head will either foul the side 54 or side 55 and will thus prevent the said means being inserted far enough for the underside 60 of its head to come into contact with the surface 44 of the bracket which penetration is necessary before the cross head 4 will be able to drop into place.

From the foregoing it will be seen that the recess formed by the walls 47, 47 and 50 make it certain that the fastening means must be inserted into place with its projecting head facing to the left as shown in the Figures 23 and 28. The walls of the recess closely embrace the head of the means so that no chisel can be brought to work on the shank except from the direction indicated by the arrow in Figure 24. These walls also will be conveniently of such a height that they will protect the said head from receiving a blow direct from a hammer. This is clearly seen in Figure 23. By closely fitting the shape of the head 2^B to the shape of the inside of the recess no feeler can be inserted into the hole 46 alongside the shank 1 of the fastening means in such a way as to operate on the cross head 4.

The fastening means illustrated in Figures 25, 26 and 27 show certain improvements. The shank 1, being prevented from turning by the fitting of the head 2^B into the recess in the bracket, may now be made circular in cross section which makes it slightly less expensive to manufacture.

The cross head 4 is pivoted at 5 in the ordinary manner, and in order to allow of the head being conveniently removed when necessary, a depression, nick, notch or reduction of the cross section of the shank may conveniently be made at 7 just below the head. This notch or the like will be on the side under the projecting bead 2^B so that the back of the shank and the back of the head present an unbroken surface as shown at 48, so that when the fastening is in place no lever means can be inserted to operate on the head from the right.

To the head 2^B a projection or lug 49 may be fitted having a hole 56 therein for the convenient fastening of a label.

The projection of said lug should not be so much as to show above the level of the walls 47 of the recess.

It will be noted that in the embodiment shown in Figure 22 the upper wall 47 projects a considerable distance to the right of the hole 46 as shown at 55 and thus not only functions to prevent the fastening means being inserted with its head pointing to the right but also is an effective shield against attack from the right hand side from above. The lower wall 47 on the other hand, does not project quite as far as indicated at 54. This therefore allows of a chisel with a narrow cutting edge being inserted in the direction shown by the arrow (in Figure 24) so that the head may be cut off. As the cotter bracket is usually attached at a height of about 5 to 6 feet above the rail

level in ordinary covered goods wagons this direction is a convenient one for a person to use a hammer and chisel.

The bracket is fixed to the wagon or wagon door by its projecting ends 57, 57 being riveted or otherwise secured, and thus leaves a socket or recess 58 into which the cotter slips.

It will be seen that the main objects of these improvements are to provide means whereby the opening of doors secured by devices of the types described will be rendered more difficult so as to discourage robbery. A great deal of the robbery which takes place is due to temptation which is rendered the more irresistible owing to the ease with which the ordinary wagon may be opened. With means of the type first described as ordinarily applied the head can be cut off with a hammer or chisel, levered off with a crow bar, or struck off even in some cases with a hammer. In certain cases the head could be struck off with a brick or large stone which might be found lying handy for the purpose. It is particularly to discourage casual theft that this part of the invention has been developed. The walls 47 are for this purpose so spaced that crow bars, plate laying tools, hammers and ordinary chisels (which usually will have a cutting edge ¾″ wide or more) cannot be used. This makes it necessary for the person opening the wagon to provide himself with a suitable chisel having a narrow cutting edge.

I will now describe the manner in which the invention is applied to the fastening of railway wagons. As above explained two kinds of fastening bolts are used the first kind having a fixed or severable head and the second having a screwed-on head.

The first kind is for use on what are known as "through wagons" that is those which do not need to be opened between the starting station and the destination of the wagon.

The second kind is for use on "road vans," that is wagons which it is necessary to open at one or more stations intermediate between the starting and destination stations, for the purpose of delivering or receiving consignments of goods.

The method of securing the doors of a "through wagon" is as follows:—

The flap and swing doors are pushed to in the usual way. The cotter 15 or 15A is dropped into the bracket or staple 18. This brings the slit or aperture 20—20A in the cotter opposite to a slit in the side of the wagon. The fastening bolt is now passed through the two slits referred to above. As soon as its end passes clear of the slit in the wagons the cross head 4, which while being pushed through these slits is in a line with the shank of the bolt as shown dotted in Figure 1, falls by gravity into a vertical position shown in full lines and secures that end of the bolt, in such a manner that it can not be withdrawn from the outside of the wagon.

The method of securing the doors of a "road van" is as follows:—

The head Figures 3 and 4 is screwed on to the shank of the bolt. The same procedure is then followed as has been described in the preceding paragraph and the same result ensues. The screw head of the bolt is then tightened up with the key in Figures 7 to 10 or other suitable spanner adapted to engage the head.

The method of opening a "through wagon" is as follows:—

The fixed or severable head of the rivet is struck off with a hammer or cut through with a chisel and the bolt is pushed into the wagon with the finger or with the chisel. This releases all doors.

The method of opening a "road van" is as follows:—

The spanner is applied to the screw head of the bolt and it is screwed off. The bolt is then pushed into the wagon as described. This releases all doors. The same procedure may be followed in securing or opening the doors on the other side of the wagon.

It will be readily understood that the use of the invention is not restricted to its use with railway wagon doors.

It may be used with luggage vans. One useful adaptation would be to the fastening of the doors of lady's compartments—particularly at night.

In such a case the second type of fastening means would be most suitable. The guard could apply the same and screw up the head. A lady inside the compartment could at any time release the fastening by lifting the cross head or by compressing the spring means with her fingers.

The fastening could also be applied to other doors as well as railway wagon or carriage doors.

It will be seen that the essential feature of the invention is the use of a fastening means which is applied by passing a part of the same through an aperture in a door and which thereupon automatically engages the inner side of the door in such a manner that the fastening bolt or means cannot be withdrawn unless the head of the bolt is removed.

It will be readily be understood that the drawings only illustrate certain embodiments of apparatus whereby the desired results may be attained and that the structural details may be widely modified without departing from the scope of the invention. The fastening bolt may be applied to the purpose of securing a door by a variety of ways. Although in this specification I have described the shank of the bolt as being pushed through a hole in the door itself it

will be understood that it might pass through a hasp or other fitting fixed to the door and through the door frame or door opening, the engaging device in all cases engaging on the inner side of the door, door frame or door opening.

By the term door other closures such as windows may be included.

It will be noted that when a pivoted cross head is the device used for engaging the inner side of a door there is a considerable advantage in having it arranged so that both arms of the cross head project as shown so as to both engage the sides of the opening—thus preventing any possibility of a sudden jerk disengaging the device.

When a screw-on head is used the object is to select such a shape for the head that it cannot be removed unless a spanner or key constructed for such purpose be used. Although I have shown a conical head for the bolt and slots or grooves in the head as the means by which the head may be removed other shapes of heads may be used and refinements may be introduced into the grooves or the like. For instance, the grooves instead of being continuous might be interrupted. Other means such for instance as projections, holes or the like permitting the head to be turned by a spanner or key of complementary shape might be used.

When a fastening bolt with a screw-on head is used it is inconvenient to always have to push the shank of the bolt through into the inside of the wagon when opening the door as the same may become lost amongst the packages inside. In these cases the shank of the bolt may be fitted with a lug, pin, projection, groove or other device 33 which may enter a groove in the side of the hole through the door or the like. This groove would in this case only continue part of the way through the door and the end of the groove would prevent the shank of the bolt from falling or being pushed inside the wagon. On the door being opened the bolt shank would in such case be pushed out from inside ready to be used again. Other suitable means could be provided to effect the desired result being applied to fastening bolts with fixed heads as well as to those with screw-on heads. In the illustration Figure 1 the projection 33 is shown in a fastening bolt of the fixed head type.

The end of the shank instead of being forked might be halved and the cross arm 4 pivoted to the projecting half.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. Means for fastening the overlapping section of grain or other car doors including in combination keeper brackets secured to the edges of the adjacent door sections one of which is provided with an opening, an apertured cotter pin connected with one of the door sections and engageable with the keeper brackets and a bolt engaged through the apertured keeper bracket the apertured pin and adjacent door section and means on the inner end of the bolt for automatically locking the bolt against displacement subsequent to the application thereof.

2. An arrangement as claimed in claim 1 wherein the head of the bolt is of a substantially triangular configuration and a guard on the apertured keeper plate having a triangular recess for accommodating the head.

3. A means for fastening overlapping sections of grain or other car doors including in combination an apertured keeper plate on one of the sections of the doors, a cotter pin movably connected to the adjacent door section and engageable with said keeper bracket and also provided with an aperture for aligning with the opening in the keeper bracket and a self-locking bolt engageable through the keeper bracket, cotter pin and door section.

4. An arrangement as claimed in claim 3 wherein the bolt includes a shank which is reduced adjacent the head to facilitate removal of the same.

5. An arrangement as claimed in claim 3 wherein the bolt is constructed so that the head may be readily removed.

6. A fastening means for the overlapping sections of grain or other car doors in combination, keeper brackets secured to the edges of the adjacent door sections and the lowermost bracket being provided with an opening, a cotter pin removably connected to one door section and engageable with the keeper brackets and also provided with an aperture for aligning with the opening in the bracket, a self-locking bolt for engagement with the opening in the bracket, the apertured cotter pin and the adjacent door section and a guard for the bolt head on the bracket having the opening.

7. An arrangement as claimed in claim 6 wherein the head of the bolt is of a substantially triangular configuration and wherein the guard comprises an end wall and side walls integral with the bracket and with the end wall and terminating in a restricted opening, substantially as and for the purposes set forth.

8. An arrangement as claimed in claim 3, wherein the head of the bolt is provided with a transverse opening adapted to receive a seal or the like.

In testimony whereof I hereto affix my signature in presence of two witnesses, this 28th day of February, 1922.

MALCOLM STUART SCOTT O'CONNOR.

Witnesses:
A. R. WALLACE,
UMA PELSHAD.