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# EUROPEAN PATENT APPLICATION

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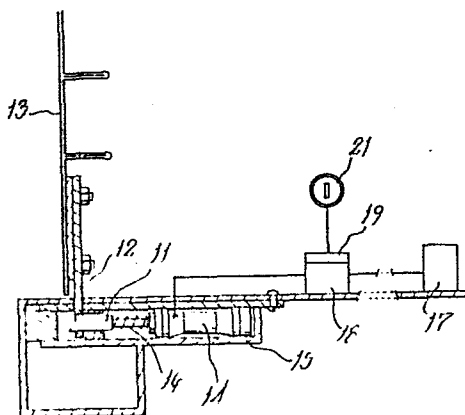
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(54) Goods vehicle locking arrangement.

(57) A locking arrangement for goods vehicles comprises a pneumatically actuated bolt (11) cooperating with an apertured member to secure the vehicle closed, said bolt (11) being pneumatically retractable to unlock the vehicle by a secure valve (18) and powered from the vehicle's pressure air supply (17).



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GOODS VEHICLE LOCKING ARRANGEMENT

This invention relates to locking arrangements for goods vehicles.

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Goods vehicles such as delivery vans which have roller shutter rear doors are usually secured by a padlock arrangement. This, being external, is relatively easy to defeat, but perhaps as serious a disadvantage is that the padlock being troublesome to apply and remove a driver will frequently leave the vehicle unlocked.

10

The present invention provides a locking arrangement which does not have these disadvantages.

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The invention comprises a locking arrangement for goods vehicles comprising a pneumatically actuated bolt cooperating with an apertured member to secure the vehicle closed, said bolt being pneumatically retractable to unlock the vehicle by a secure valve and powered from the vehicle's pressure air supply.

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US Patents Nos. 3601453 and 3624761 relate to trailer locking arrangements which are similarly pneumatically actuatable only when the tractor is attached. A disadvantage of those arrangements,

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however, is that the pneumatic unlocking is relatively, easy to achieve when the trailer is disconnected (or even when it is connected, but unattended, so that it is surreptitiously disconnectible) by attaching a pressure  
5 air supply to the disconnected air hose connections of the trailer. Perhaps because these arrangements are easily defeated, however, they have not apparently found favour among owners of goods vehicle fleets.

10 We have found, however, that such arrangements, suitably modified, are in fact very suitable for vehicles which are not articulated, so that there is no access to the air hose.

15 Said secure valve may be operated by a security key and may be electrically operated so that a lock can be remotely situated from the valve, for example in the driver's cab or at a convenient location close to the vehicle door or shutter.

20 Said bolt may be biased towards the locking position, and may be retractable against the bias by said apertured member for automatic locking on closure. Said apertured member and bolt may have a camming  
25 action, after the fashion of a Yale lock.

Said bolt may be held retracted from said

aperture member on actuation for a short time interval -  
for example by a dashpot arrangement - before  
automatically returning to the locking position. If the  
lock is in the cab, for example, the time interval may  
5 be selected to be, say, thirty seconds, to give the  
driver time to reach and open the door.

The bolt and associated actuating means and said  
apertured member - which may be a lug fixed to the lower  
10 edge of a roller shutter - when in the closed position  
are desirably securely concealed. They may of course be  
mounted internally of the vehicle in suitable cases, but  
should be covered or boxed into a suitably secure  
location if mounted externally.

15 One embodiment of a locking arrangement  
according to the invention applied to a delivery van  
with a roller shutter door will now be described with  
reference to the accompanying drawings in which the  
20 single Figure is a diagrammatic illustration.

The locking arrangement illustrated in the  
Figure comprises a pneumatically actuated bolt 11  
cooperating with an apertured lug 12 fastened to the  
25 inside of the lower edge of a roller shutter rear door  
13 of the van.

The bolt 11, lug 12 and the pneumatic actuating cylinder 14 are concealed in a hardened box arrangement 15.

5           The bolt 11 is biased by a spring 16 to the locked position where it engages the apertured lug. . The lug 12 and bolt 11 have a camming action however, so that on closure of the door the bolt will move back on being contacted by the lug after the fashion of a Yale  
10 lock.

Air from the vehicle's pressure air supply 17 is admitted to the cylinder 14 to cause the bolt 11 to retract by a secure valve 18 which has an electric  
15 actuator 19 to which current is supplied from a remote lock 21 operated preferably by a security key. The lock 21 can be located in the driver's cab or at a convenient position at the rear of the vehicle. Either valve 18 comprises a dashpot arrangement, or the system is  
20 arranged electrically by a timer, to maintain pressure to the cylinder 14 only for a short time interval after actuation so that the bolt automatically returns to the locked position - the time interval will of course be sufficient to allow the driver to reach and open the  
25 door.

The valve 18 is securely contained like the bolt 11, lug 12 and cylinder 14, and located close to these

members so as to avoid the possibility of unauthorised access to the air supply line between valve 18 and cylinder 14.

5           The arrangement described with reference to the drawing is by way of example only, many modifications being possible while retaining the advantages of the invention. Thus instead of a Yale-type camming action to retract the bolt on closure, the cylinder 14 could be  
10 double acting and the valve 18 controlled to engage the bolt 11 automatically on closure, for example by a proximity switch actuated by the bottom of the door. The arrangement may also be mounted at the top of the door rather than at the lower edge as illustrated,  
15 rendering it less accessible to those intending unauthorised entry.

          The arrangement can be coupled to other security systems, for example to a security alarm so that an  
20 alarm is raised if the valve 18 is actuated without the lock 21 being properly operated.

          Because there is no access to the pressure air supply in a non-articulated vehicle such as a delivery  
25 van, without actually entering the van, the arrangement is secure against the unauthorised use of pressure air from an external source to release the lock.

CLAIMS

1. A locking arrangement for goods vehicles comprising a pneumatically actuated bolt cooperating  
5 with an apertured member to secure the vehicle closed, said bolt being pneumatically retractable to unlock the vehicle by a secure valve and powered from the vehicle's pressure air supply.
- 10 2. A locking arrangement according to claim 1, said secure valve being operated by a security key.
3. A locking arrangement according to claim 1 or claim 2, said secure valve being electrically operated.  
15
4. A locking arrangement according to any one of claims 1 to 3, said bolt being biased toward the locking position.
- 20 5. A locking arrangement according to claim 4, said bolt being spring biased toward the locking position.
6. A locking arrangement according to claim 4 or claim 5, said bolt being retractable against the bias by  
25 said apertured member for automatic locking on closure.

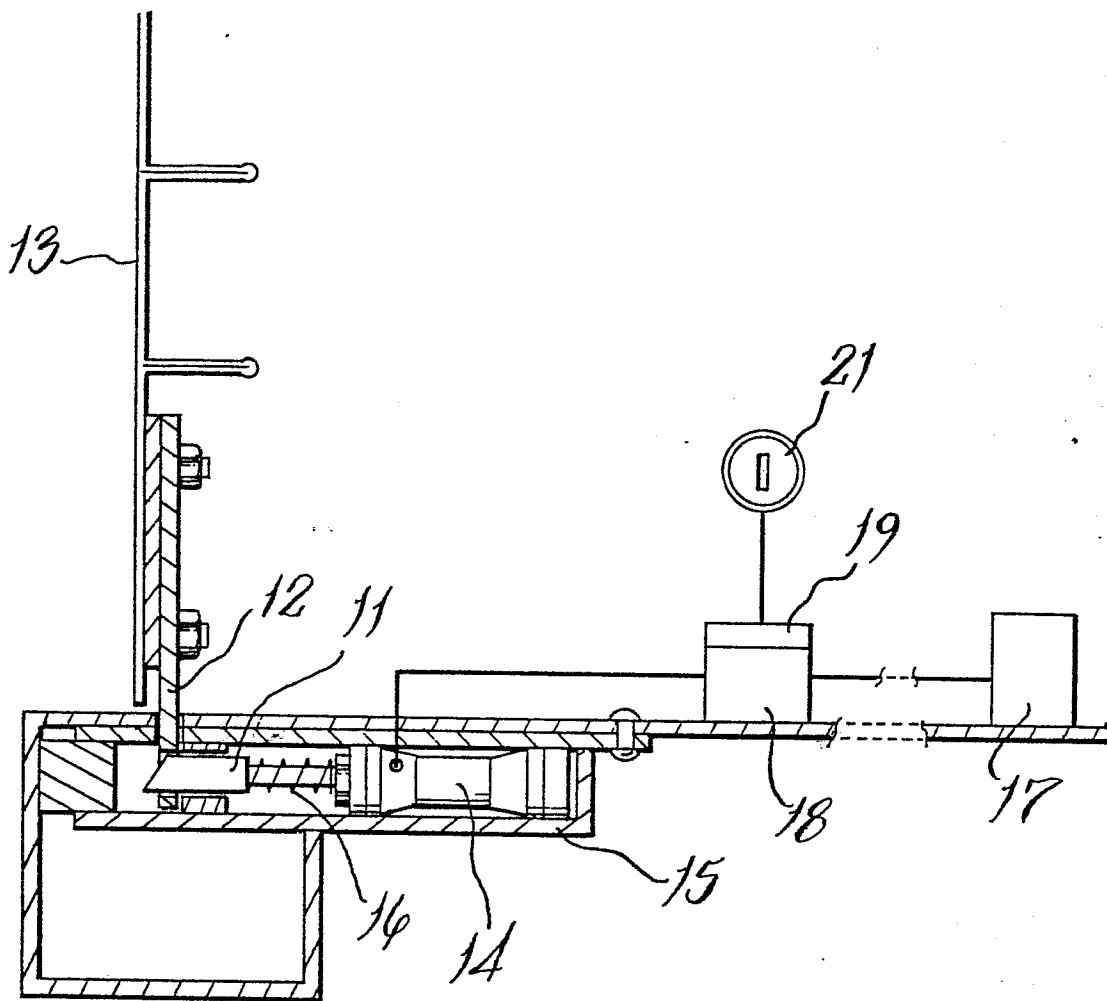
7. A locking arrangement according to claim 6, said apertured member and said bolt having a camming action.

8. A locking arrangement according to any one of  
5 claims 1 to 7, said bolt being retracted from said apertured member on actuation for a short time interval before automatically returning to the locking position.

9. A locking arrangement according to any one of  
10 claims 1 to 8, said bolt and associated actuating means and said apertured member when in the closed position being securely concealed.

10. A locking arrangement according to any one of  
15 claims 1 to 9, said aperture member being on a roller shutter door.







European Patent  
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# EUROPEAN SEARCH REPORT

0152277

Application number

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 85300805.0
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int Cl 4)
D,A	<u>US - A - 3 624 761</u> (R.F.KOHN) * Fig. 1-5 * --	1,3,4, 6,7	E 05 B 65/12 B 62 D 53/06
D,A	<u>US - A - 3 601 453</u> (S.SILVERMAN) * Fig. 1-3 * --	1,6,7,8	
A	<u>DE - B - 1 120 929</u> (DAIMLER-BENZ AG) * Fig. 1,2 * ----	1,4,5,6 7,8,9	
			TECHNICAL FIELDS SEARCHED (Int Cl 4)
			E 05 B B 60 J B 64 C B 62 D
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 29-04-1985	Examiner CZASTKA
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	