

PATENT SPECIFICATION

(11) 1 536 626

7

1 536 626

- (21) Application No 21359/77 (22) Filed 20 May 1977
(44) Complete Specification Published 20 Dec. 1978
(51) INT. CL.² E04B 1/347
(52) Index at Acceptance
E1A 703 730

(19)



(54) COVERS AND CANOPIES SUITABLE FOR MOTOR VEHICLES

(71) I, DWIGHT PING KUEN AU, a British subject of Flat 3A, 35 Broadcast Drive, Kowloon, Hong Kong, do hereby declare the invention for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention relates to covers or canopies suitable for covering motor vehicles e.g. motor cars and coaches. In many parts of the world it is the practice to park motor cars and coaches in open car parks. In fine or warm weather, often in summer in temperate climates (and all the year round in climates nearer to the tropics where air temperature usually exceeds 30°C), it often happens that a motor car or coach becomes uncomfortably hot by the time the motorist or passengers return to it. Even where the vehicle has air-conditioning, which gradually reduces the temperature once the engine is running, the high temperature due to standing in the heat or the sun may bring great discomfort for a considerable time.

Covered garages are very rarely available; and the provision of cover in car parks or streets may often be thought to be impracticable on account of the consequent obstruction, and in the context of road and building regulations.

According to the invention, I provide a foldable or retractable cover or canopy suitable for covering a motor vehicle, having a fixed support, a movable support which can be moved along a supporting surface, an extensible framework including a pair of lazy tongs arrangements arranged in horizontally side-by-side substantially vertical planes and interconnecting upper ends only of the supports, and flexible sheet cover or canopy material supported by the extensible framework, the arrangement being such that the cover or canopy is movable between an in-use extended position in which it provides

cover for a vehicle, and a folded or retracted position in which it does not cover the vehicle, by moving the movable support along the supporting surface away from or towards the fixed support.

In a suitable embodiment given in detail below by way of example, the flexible sheet material canopy is generally rectangular and is arranged to fold in a concertina-like manner. At each corner there is provided a support in the form of a leg. The legs at one end of the lazy tongs arrangements are supported in or on the ground or other supporting surface and the legs at the other end are movable along the ground by castors or rollers.

In an alternative embodiment the flexible sheet material canopy can be in the form of a horizontally extensible roller-blind (which can suitably be spring-biased) to be rolled and unrolled as desired.

The fixed legs can for example either be planted directly in the ground, e.g. where the ground is relatively soft, or fixed in sockets bolted to the ground. Alternatively they can be supported by free-standing bases of sufficient weight and suitable shape to provide support and stability, e.g. blocks of concrete.

Suitably, sections of pipe can be embedded in or project from the ground or other surface to receive and support the fixed legs.

The movable support can be arranged to move not only on a castor or castors, but alternatively, as in for example a more permanent arrangement, to slide along a running rail or rails.

It can be seen that such a cover or canopy is capable of providing a convenient collapsible arrangement for protecting motor vehicles from sun (or rain). The arrangement can easily be erected in an open space and can be installed by a building without impeding access (e.g. access required by fire-fighting regulations). The arrangement is also suitable for use as an economical substitute for garage protection at any suitable place, as

50

55

60

65

70

75

80

85

90

8

desired, e.g. in a domestic driveway or garden.

A preferred embodiment of the invention is hereinafter particularly described by way of example only with reference to the accompanying drawings.

Figure 1 of the drawings shows in perspective an embodiment of the invention in an in-use position.

Figures 2 and 3 are respectively a side and end elevation of the embodiment of Figure 1, partly in section.

Figure 4 shows the embodiment of Figures 1-3 in side view in the folded position.

Figure 5 shows a detail of construction of the frame of the same embodiment.

Referring to the drawings Figure 1 shows in perspective view a foldable canopy 1 according to a practical embodiment of the invention.

The canopy is of flexible sheet material 2 generally of rectangular form, (in this case plastics sheet material or heavy-duty cotton, but any suitable material, e.g. any of those generally used for umbrellas and canopies, may be used). The canopy 2 is arranged for concertina-folding and -unfolding and can be moved from the in-use position as shown in Figure 1 to a folded retracted position as shown in Figure 4.

Canopy 2 is supported by a pair of lazy-tongs arrangements, not shown in Figure 1, (one designated 3 in Figure 2), with a pair of fixed legs 4 at one end of the lazy tongs and a pair of movable legs 5 at the other end of the lazy tongs. Legs 4 and fixed to and supported by fixing brackets 6 which bolt to the ground or other supporting surface.

Legs 5 are supported on castors 7 so that they can be moved towards and away from legs 4. Legs 4 and 5 are of mild steel and have (optionally) external sheaths of relatively resilient material, e.g. rubber (not shown) to minimise damage to vehicle bodywork in case of accidental contact.

Legs 4 and 5 are mounted at the corners of an extensible framework of mild steel comprising a pair of rigid opposite sides 8 (Figure 3) comprising steel tubing bars 9 (Figure 5) fixed to a respective leg 4 or 5 and a pair of extensible opposite sides each formed by one of the lazy-tongs 3. The pair of lazy-tongs 3 forming the extensible opposite sides are arranged in horizontally spaced side-by-side substantially vertical planes and interconnect upper ends only of the respective support legs 4 and 5.

Each lazy tongs consist of an articulated plurality of mild steel bars fixed at each end to one of opposite brackets 10 fixed to the upper ends only of the respective leg 4 or 5. Each bracket 10 has one pivoted mounting and one slot mounting for the lazy tongs to allow extension and retraction.

The canopy can be extended and retracted

by pulling or pushing one or both of legs 5 to extend or retract the canopy from or towards the fixed legs 4 by the rolling of castors 7 along the ground (or runners, where provided). In the retracted and folded position, shown in Figure 4, the canopy occupies a very small space.

The canopy further comprises a dependent curtain 11 extending downwardly from its edge.

The curtain is of similar material to the remainder of the canopy.

The framework can alternatively be made of galvanised or painted iron or steel bars and tubing, or aluminium or stainless steel which can provide better corrosion resistance.

The embodiment described can be made in a variety of sizes, but to suit a number of vehicles can suitably be about 7 feet wide, 16 feet long at full extension, and 5'6" - 8' in height. While lower heights accommodate fewer vehicles, they protect from the sun at lower angles of elevation.

The canopy of the invention can be used in streets, suburban drive-ins and gardens, beaches, and so on, wherever a measure of protection is desired for vehicles without the obstruction and expense of permanent garage buildings or roofs.

WHAT I CLAIM IS:-

1. A foldable or retractable cover or canopy suitable for covering a motor vehicle, having a fixed support, a movable support which can be moved along a supporting surface, an extensible framework including a pair of lazy tongs arrangements arranged in horizontally spaced side-by-side substantially vertical planes and interconnecting upper ends only of the supports; and flexible sheet cover or canopy material supported by the extensible framework, the arrangement being such that the cover or canopy is movable between an in-use extended position in which it provides cover for a vehicle, and a folded or retracted position in which it does not cover the vehicle, by moving the movable support along the supporting surface away from or towards the fixed support.

2. A cover or canopy according to claim 1, wherein the flexible sheet material is arranged for concertina-folding and unfolding in the folded and in-use position respectively.

3. A cover or canopy according to claim 1, wherein the flexible sheet material is in the form of a horizontally extensible roller-blind.

4. A cover or canopy according to any one of claims 1 to 3, in which the fixed support comprises a pair of legs suitable to be supported in or on the ground or other supporting surface, and the movable support comprises a further pair of legs movable along the ground or other supporting surface by means of castors or rollers.

5. A foldable or retractable cover or



8

2

1,536,626

2

desired, e.g. in a domestic driveway or garden.

5 A preferred embodiment of the invention is hereinafter particularly described by way of example only with reference to the accompanying drawings.

10 Figure 1 of the drawings shows in perspective an embodiment of the invention in an in-use position.

Figures 2 and 3 are respectively a side and end elevation of the embodiment of Figure 1, partly in section.

Figure 4 shows the embodiment of Figures 1-3 in side view in the folded position.

15 Figure 5 shows a detail of construction of the frame of the same embodiment.

Referring to the drawings Figure 1 shows in perspective view a foldable canopy 1 according to a practical embodiment of the invention.

20 The canopy is of flexible sheet material 2 generally of rectangular form, (in this case plastics sheet material or heavy-duty cotton, but any suitable material, e.g. any of those generally used for umbrellas and canopies, may be used). The canopy 2 is arranged for concertina-folding and -unfolding and can be moved from the in-use position as shown in Figure 1 to a folded retracted position as shown in Figure 4.

30 Canopy 2 is supported by a pair of lazy-tongs arrangements, not shown in Figure 1, (one designated 3 in Figure 2), with a pair of fixed legs 4 at one end of the lazy tongs and a pair of movable legs 5 at the other end of the lazy tongs. Legs 4 and fixed to and supported by fixing brackets 6 which bolt to the ground or other supporting surface.

40 Legs 5 are supported on castors 7 so that they can be moved towards and away from legs 4. Legs 4 and 5 are of mild steel and have (optionally) external sheaths of relatively resilient material, e.g. rubber (not shown) to minimise damage to vehicle bodywork in case of accidental contact.

45 Legs 4 and 5 are mounted at the corners of an extensible framework of mild steel comprising a pair of rigid opposite sides 8 (Figure 3) comprising steel tubing bars 9 (Figure 5) fixed to a respective leg 4 or 5 and a pair of extensible opposite sides each formed by one of the lazy-tongs 3. The pair of lazy-tongs 3 forming the extensible opposite sides are arranged in horizontally spaced side-by-side substantially vertical planes and interconnect upper ends only of the respective support legs 4 and 5.

60 Each lazy tongs consist of an articulated plurality of mild steel bars fixed at each end to one of opposite brackets 10 fixed to the upper ends only of the respective leg 4 or 5. Each bracket 10 has one pivoted mounting and one slot mounting for the lazy tongs to allow extension and retraction.

65 The canopy can be extended and retracted

by pulling or pushing one or both of legs 5 to extend or retract the canopy from or towards the fixed legs 4 by the rolling of castors 7 along the ground (or runners, where provided). In the retracted and folded position, shown in Figure 4, the canopy occupies a very small space.

70 The canopy further comprises a dependent curtain 11 extending downwardly from its edge.

75 The curtain is of similar material to the remainder of the canopy.

The framework can alternatively be made of galvanised or painted iron or steel bars and tubing, or aluminium or stainless steel which can provide better corrosion resistance.

80 The embodiment described can be made in a variety of sizes, but to suit a number of vehicles can suitably be about 7 feet wide, 16 feet long at full extension, and 5'6" - 8' in height. While lower heights accommodate fewer vehicles, they protect from the sun at lower angles of elevation.

85 The canopy of the invention can be used in streets, suburban drive-ins and gardens, beaches, and so on, wherever a measure of protection is desired for vehicles without the obstruction and expense of permanent garage buildings or roofs.

95 WHAT I CLAIM IS:-

1. A foldable or retractable cover or canopy suitable for covering a motor vehicle, having a fixed support, a movable support which can be moved along a supporting surface, an extensible framework including a pair of lazy tongs arrangements arranged in horizontally spaced side-by-side substantially vertical planes and interconnecting upper ends only of the supports, and flexible sheet cover or canopy material supported by the extensible framework, the arrangement being such that the cover or canopy is movable between an in-use extended position in which it provides cover for a vehicle, and a folded or retracted position in which it does not cover the vehicle, by moving the movable support along the supporting surface away from or towards the fixed support.

2. A cover or canopy according to claim 1, wherein the flexible sheet material is arranged for concertina-folding and unfolding in the folded and in-use position respectively.

3. A cover or canopy according to claim 1, wherein the flexible sheet material is in the form of a horizontally extensible roller-blind.

4. A cover or canopy according to any one of claims 1 to 3, in which the fixed support comprises a pair of legs suitable to be supported in or on the ground or other supporting surface, and the movable support comprises a further pair of legs movable along the ground or other supporting surface by means of castors or rollers.

5. A foldable or retractable cover or

70

75

80

85

90

95

100

105

110

115

120

125

130



(9)

canopy substantially as hereinbefore described with reference to the accompanying drawings.

5

For the Applicants,
D. YOUNG & CO.,
Chartered Patent Agents,
9 & 10 Staple Inn,
London, WC1V 7RD.

Printed for Her Majesty's Stationery Office, by Croydon Printing Company Limited, Croydon, Surrey, 1978.
Published by The Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from
which copies may be obtained.