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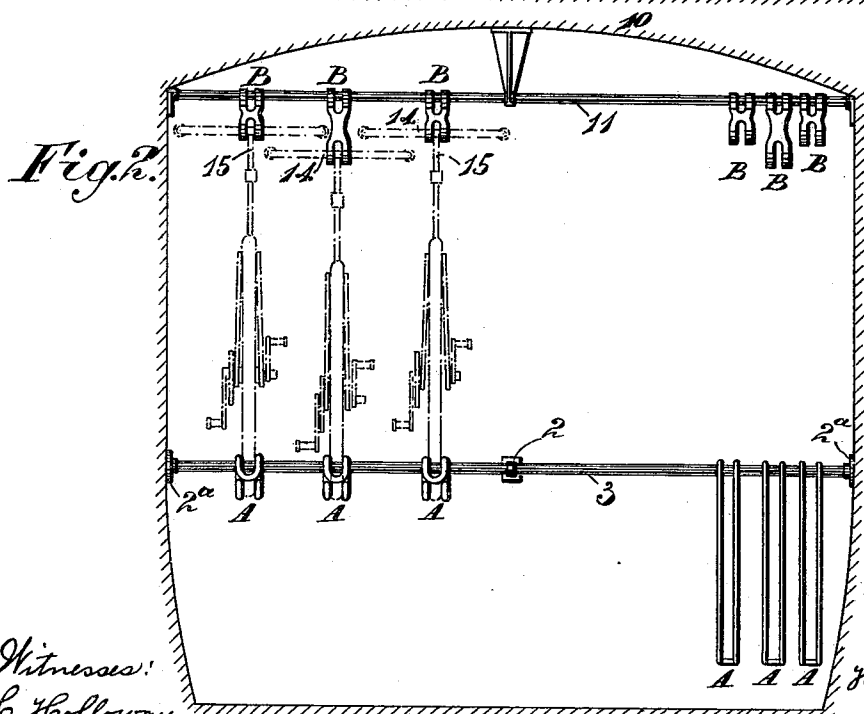
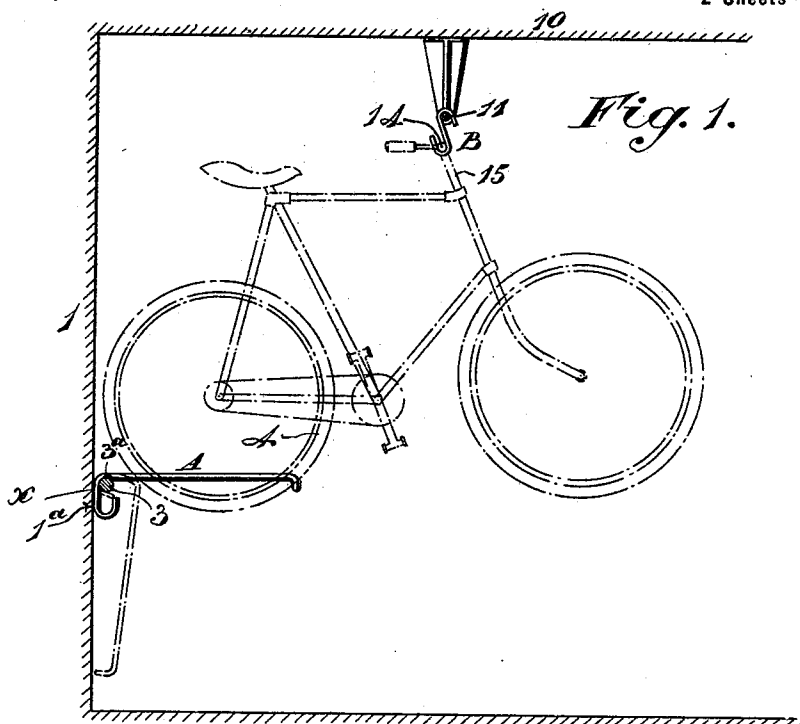
Patented Mar. 28, 1899.

H. A. IVATT.
MEANS FOR HOLDING CYCLES.

(Application filed Mar. 28, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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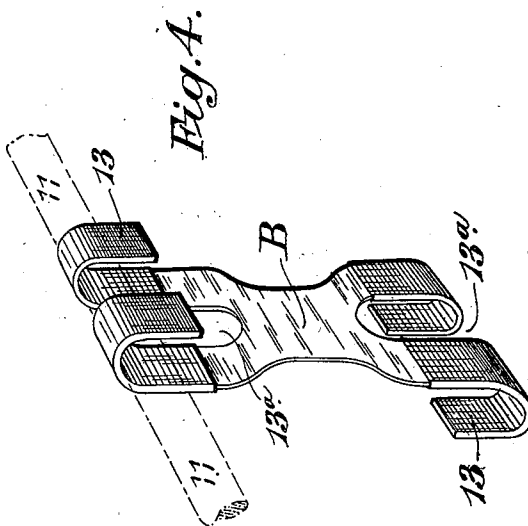
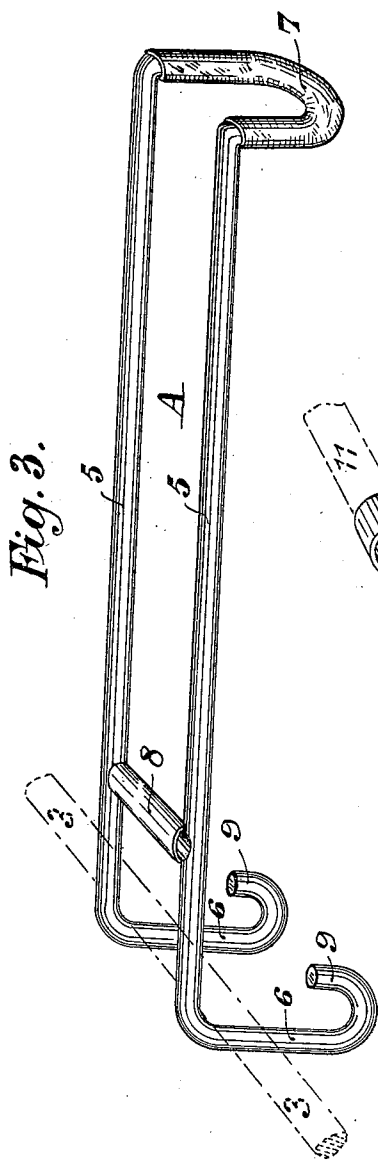
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UNITED STATES PATENT OFFICE.

HENRY ALFRED IVATT, OF DONCASTER, ENGLAND.

MEANS FOR HOLDING CYCLES.

SPECIFICATION forming part of Letters Patent No. 621,819, dated March 28, 1899.

Application filed March 28, 1898. Serial No. 675,363. (No model.)

To all whom it may concern:

Be it known that I, HENRY ALFRED IVATT, a subject of the Queen of Great Britain and Ireland, residing at Doncaster, in the county of York, England, have invented Improved Means or Appliances for Supporting and Holding Cycles, of which the following is a specification.

The object of my invention is to provide simple, economical, and efficient means for supporting and holding cycles—as, for example, in vehicles, such as railway or other vans, or in ships—for transport and in rooms, such as cloak-rooms or store-rooms, for storage. For said purpose I provide in the van or other room or place in which cycles are to be carried or stored a couple of horizontal solid or hollow bars fixed parallel to one another, but one at some distance from and higher than the other, and near to the lower bar I provide, parallel to it, an abutment, which may be a wall or may be a plate or a third bar somewhat below the first-mentioned bar. On the lower bar I provide a series of wheel-supports able to be slid along their bar and capable of being placed in positions in which parts thereof will be so located between the first-mentioned bar and the abutment as to hold the wheel-supporting parts in a horizontal or approximately horizontal position. Said supports are also capable of being placed in alternative positions, in which their wheel-supporting parts will hang down or they may hang up, so as not to project into the van or room to any serious extent, thus leaving more space available for use when cycles are not being carried or stored. On the upper bar I arrange suspenders adapted to support the handle-bars of cycles, as hereinafter explained.

The accompanying drawings illustrate how my invention may be conveniently carried out in practice.

Figures 1 and 2 are sections, taken at right angles to each other, of a van-body or room embodying my improved appliances; and Figs. 3 and 4 are perspective views, respectively, of a wheel-support and a handle-bar suspender.

Very near and parallel to a wall 1 or equivalent (hereinafter called the "abutment") I fix, by any convenient means, such as by a

bracket 2 and sockets 2^a or otherwise, a horizontal bar 3, so as to leave a small space x between the bar 3 and the abutment 1. On the bar 3 I place a series of wheel-supports A, such as I will now describe, each for supporting a cycle-wheel, so that in case a tricycle is to be carried two such supports may be used for it. In the illustration, however, I indicate bicycles as the machines being carried or stored, and I show the rear wheels 4 on my wheel-supports A and the front ends suspended by suspenders B. This, however, might be varied.

Referring to Fig. 3, the wheel-support, as seen in side view, is of approximately L shape. In the example it resembles two L-shaped solid or tubular rods 5 6, connected by a curved cross connection 7 at or near the ends of their longer limbs 5 and by a second cross connection 8 at some distance from said ends. These cross connections are adapted to support a cycle-wheel 4, which will rest upon them when the limbs 5 are in the horizontal or approximately horizontal attitude, (see Fig. 1,) and then there will be one of said limbs at each side of the wheel. The supports are retained in position for use by means of the limbs 6, bearing at 1^a against the abutment 1 and at 3^a against the bar 3. Each limb 6 terminates in a hook 9. These hooks are adapted to rest upon the fixed horizontal bar 3 when the device is out of use, at which times it will be hanging with the limbs 5 downward and out of the way, as indicated by dotted lines in Fig. 1. In this attitude the support A will not interfere seriously with the use of the van or room for purposes other than the carriage or storage of cycles.

My supports may be formed of iron or steel bar or tube or otherwise, the precise shape depending upon requirement. The whole of a support A might be made integral of plate cut and pressed to shape or of cast metal. The space between the limbs 6 and even between those portions of the limbs 5 extending from the connecting part 8 to the elbow or bend might be filled up with metal integral with the limbs. Thus the one end of the wheel-support would represent a single broad structure terminating in a single broad hook of a more or less flat cross-sectional form. One limb 5 might be omitted.

11 is a solid or tubular bar fixed parallel to the bar 3, but at some distance from it and higher up—for example, in the case of a van, just under the roof 10, Figs. 1 and 2. On said higher bar 11 are arranged a suitable number of suspenders B, each adapted to support a cycle handle-bar. A suspender B is, as represented in Fig. 4, made with hooks 13 at both its ends, the hooks at one end having by preference and as shown a reverse direction to those at the other, although both might have the same direction. Between the two hooks 13 at both ends, or may be only at the end which in use receives the handle-bar 14 of the cycle to be carried or stored, there is a gap or space 13^a, so that the device there resembles a bifurcated hook or a connected couple of hooks, with sufficient room between them for the passage of the steering-post 15 or part that carries the steering-handle of the cycle.

It is advantageous to make the suspenders of two lengths and to arrange them alternately on their bar 11, so that, as shown in Fig. 2, the handle-bar 14 of a bicycle may clear those of other cycles placed next to it.

Devices such as I have hereinabove described may be variously constructed. They may be cast, stamped, or pressed to shape or constructed of parts suitably fastened together.

The cross-pieces of the wheel-supports and the suspender-hooks intended to carry the handle-bars of cycles are or may be covered, as indicated in Figs. 3 and 4, with leather, india-rubber, or other suitable material to prevent injury to the cycles.

It will be understood that the wheel-supports and suspenders can be slid along their respective bars, thus affording access to attendants, besides admitting of ready adjustment of position to suit requirements. In the right hand of Fig. 2 three wheel-supports A and an equal number of suspenders B are shown thus slid to one side and out of the way.

Although I have only described the supporting and holding of bicycles by my combination of devices, it is obvious that same can be used to support and hold tricycles and quadricycles, two side-by-side wheels of which would be supported by two of the wheel-supports A and the handle-bar by one of the suspenders B.

What I claim is—

1. In a cycle supporting and holding arrangement, a wheel-support comprising limbs arranged side by side sufficiently far apart to allow a cycle-tire to be introduced between them, transverse connecting parts between said limbs adapted to support a cycle-wheel, and, at right angles or thereabout to said limbs, a limb or limbs adapted to enter between and to be kept vertical or thereabout by a horizontal bar and an abutment parallel thereto and to then support and hold the first-mentioned limbs in a horizontal attitude or

approximately so, and a hook or hooks at the free end or ends of said secondly-mentioned limb or limbs, adapted, when the device is not in use, to hook onto said horizontal bar, and to then support the device with the first-mentioned limbs hanging down in an out-of-the-way position as and for the purpose set forth.

2. In a cycle supporting and holding arrangement, a wheel-support comprising limbs 5 parallel to one another and sufficiently far apart to allow a cycle-tire to be introduced between them, a curved transverse connecting part 7 and a straight connecting part 8 between said limbs 5 adapted to support a cycle-wheel, limbs 6 integral with and at right angles or thereabout to said limbs 5 and adapted to enter between and to be kept vertical or thereabout by a horizontal solid or hollow bar and an abutment parallel thereto and to then support and hold said limbs 5 in a horizontal attitude or approximately so, and hooks 9 at the free ends of said limbs 6 adapted when the device is not in use to hook onto said horizontal bar and to then support the device with said limbs 5 hanging down in an out-of-the-way position substantially as described and shown for the purpose specified.

3. In a cycle supporting and holding arrangement, the combination of a wheel-support comprising limbs arranged side by side sufficiently far apart to allow a cycle-tire to be introduced between them, transverse connecting parts between said limbs adapted to support a cycle-wheel, and at right angles or thereabout to said limbs a hook-ended limb or limbs; a fixed solid or hollow horizontal bar and an abutment between which the said secondly-mentioned limb or limbs can enter and whereby the said device can be supported either with the first-mentioned limbs horizontal or approximately so or with said first-mentioned limbs hanging down, a second fixed horizontal solid or hollow bar parallel or thereabout to said first-mentioned fixed bar, and a suspender constructed with hooks at both its ends, the hooks at one or both ends being bifurcated or constructed as two hooks with a space between them whereby said hooks are adapted to receive and support the handle-bar of a cycle substantially as and for the purpose specified.

4. A cycle supporting and holding arrangement comprising a horizontal bar or tube fixed near an abutment, a series of devices placed on, and free to be moved along, the said bar or tube, and adapted to support the rear wheels of cycles, and means for supporting the front ends of the cycles from above, each of the said devices being in the form of two L-shaped bars or tubes which have two short limbs terminating in hooks and projecting downward between the said bar or tube and the said abutment and two long limbs projecting from the said abutment and connected together by a transverse connection at or near their outer ends and by a second transverse connection

nearer to the said abutment than the first-mentioned connection and each of the said devices being adapted to support the rear wheel of a cycle between its two L-shaped bars or tubes and upon its two said transverse connections substantially as hereinbefore described.

5. A cycle supporting and holding arrangement comprising a horizontal bar or tube fixed near to an abutment, a series of L-shaped devices placed on, and free to be slid along, the said bar or tube and each having a long limb and a short limb, the said short limb having a hooked outer end and being located between the said bar or tube and the said abutment, and the said long limb projecting from the said wall and being adapted to support within it the rear wheel of a cycle, a second horizontal bar or tube fixed above and

parallel to the first-mentioned bar or tube but farther from the said abutment, and a series of suspenders placed on, and free to be slid along, the secondly-mentioned bar or tube and adapted to support the front end of the cycle by its handle-bar, substantially as hereinbefore described.

6. In a cycle supporting and holding arrangement a wheel-support of L shape or approximately so in side view and with a hook or hooks at the end or ends of one limb or set of limbs, and a single limb with laterally-projecting wheel-supporting surfaces.

Signed at Doncaster, Yorkshire, England, this 16th day of March, 1898.

HENRY ALFRED IVATT.

Witnesses:

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