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SHOE RACK

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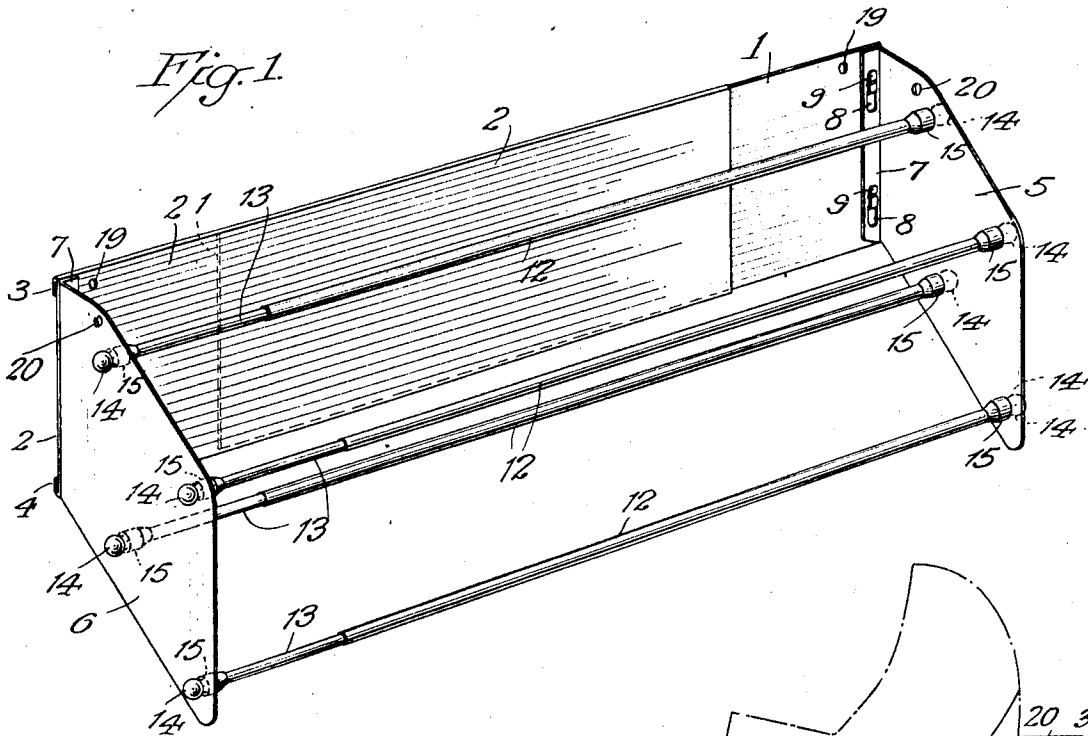
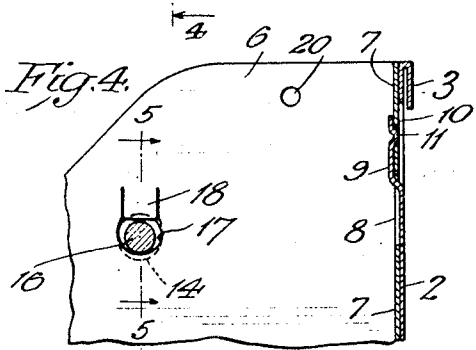
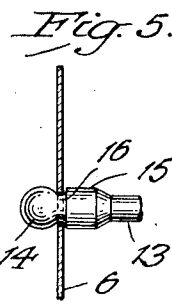
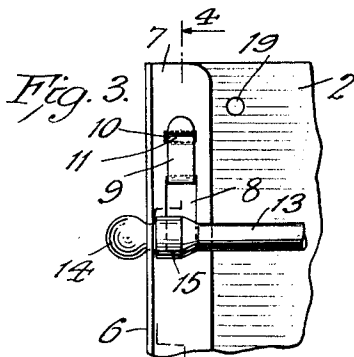
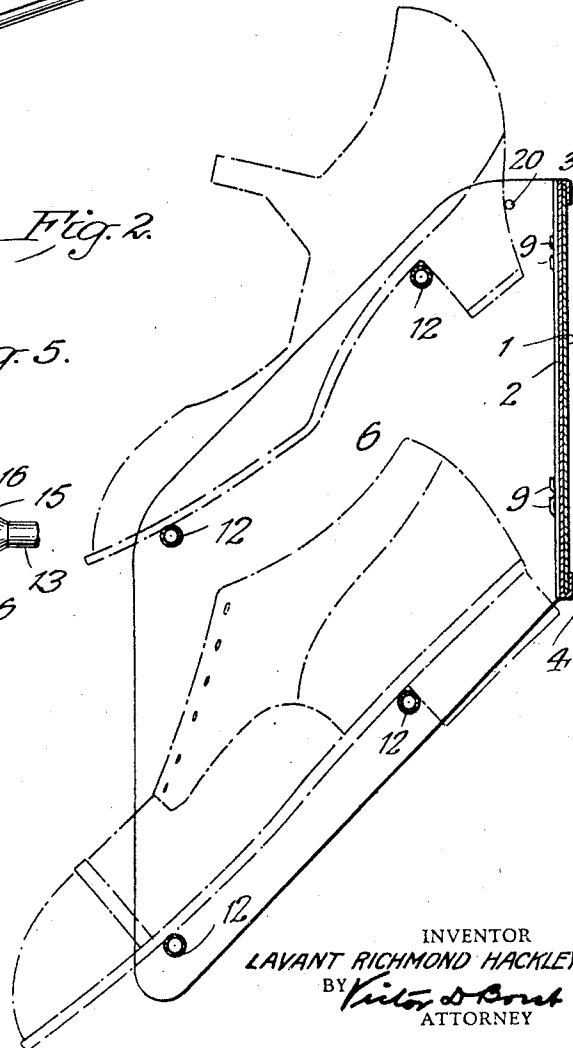


Fig. 2.



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SHOE RACK

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This invention relates to shoe racks of the kind intended for household use. Racks of this kind heretofore proposed have usually been more or less objectionable, for various reasons, such as being complicated and expensive, of small capacity or else too bulky, inconvenient, not well adapted to the various conditions under which they must be installed and used, etc.

Among the general objects of this invention are: simplicity, inexpensiveness, convenience, compactness together with a relatively large capacity, ready adaptability to various conditions of installation, and easy portability. Other more particular objects and advantages will hereinafter appear.

The invention comprises a unitary device including improvements in the following respects: in the construction employed for keeping the bulk and weight at a minimum; in the means for effecting longitudinal adjustment of the length of the device as a whole, in order thereby to vary its capacity as desired or to accommodate it to the available space; in the means employed for securely holding all parts of the unitary structure in assembled condition for use, while at the same time providing for easily and quickly reducing the device to a disassembled or knock-down condition for transportation or storage in a very small space; in the means for obtaining a relatively large capacity in a relatively small device; and in the features of construction which contribute to and render possible the effective carrying out of the above noted objects. The invention also more particularly includes various features of construction and combinations of parts, as will appear from the following description.

The invention will now be particularly described with reference to the accompanying drawings, illustrating one embodiment thereof, and thereafter the invention will be pointed out in claims, reference now being had to the drawings, in which:

Fig. 1 is a perspective view of a complete unitary device embodying the invention, shown as in assembled condition in the position of use, but as not installed for use in the place it is to occupy;

Fig. 2 is an enlarged transverse vertical section, with two shoes, indicated in broken lines, shown as supported thereon;

Fig. 3 is a further enlarged partial front view of the upper portion of the device shown in Fig. 2 and also appearing at the top and left in Fig. 1;

Fig. 4 is a vertical section substantially on the line 4—4 of Fig. 3; and

Fig. 5 is a vertical section on the line 5—5 of Fig. 4.

It is to be understood of course that the following is a detail description of the construction of the particular embodiment of the invention which is shown in the drawings, and that therefore the scope of the invention as set forth in the appended claims is not necessarily limited to all of the details shown and described, since it is obvious that such details of construction could be more or less varied or changed without thereby departing from the claimed invention. The particular embodiment of the invention shown in the drawings will now be described in detail.

A main frame part at the back of the device is made up of two overlapping right and left telescoping pieces 1 and 2 which may be readily formed from plates or strips of suitable sheet metal such as sheet steel. The outer telescopic piece 2 is provided along its opposite edges at the back thereof with similar intumed hook-shaped upper and lower flanges 3 and 4, providing grooves forming guideways for the upper and lower edges respectively of the inner telescopic piece 1. This piece 1 has a slidable friction fit in these guide grooves formed on the outer piece 2 by the flanges 3 and 4. Thus it will be noted that the length of this horizontal back frame part, considered as a whole, is adjustable so that it may be considerably varied, a substantially intermediate condition of such adjustment being indicated in Fig. 1. This two-piece horizontally extending telescopic back frame part constitutes what may be termed the central or main supporting and connecting member or part of the complete unitary device, as will hereinafter more clearly appear.

Reversely formed, but otherwise similar, right and left bracket-forming end wings 5 and 6, which may be formed of suitable sheet metal similar to that of the back pieces 1 and 2, are carried by and project at right angles forwardly from the outer ends of the respective back pieces 1 and 2. These bracket-forming end wings 5 and 6 are respectively detachably mounted upon the back frame pieces 1 and 2. In the construction shown, each of these end wings is provided along its rear vertical edge with a right angular intumed flange 7, and this flange is provided with a pair of vertically spaced vertically elongated slotted apertures 8. Adjacent to each end of each of the back pieces 1 and 2, a pair of vertically upstanding resilient tongues 9 are punched out or struck forwardly from the sheet material of these back pieces. These tongues 9 are vertically spaced the same distance apart as are the apertures 8 and these apertures are of the correct width and of sufficient length to pass freely over the upstanding tongues when the apertures are horizontally aligned therewith.

For attaching one of these wing pieces to its back piece the slotted holes 8 are passed rearwardly over the hooks or tongues 9 and the wing piece then pulled downwardly relatively to the back piece as far as it will go, so that the tongues 9, which are resilient, then come just at the front of and frictionally press against the flange 7. However, further means are provided to guard against the possibility of the accidental disengagement of the wing pieces from the back pieces, such as possibly might otherwise occur in the use of the device, or in handling it in its assembled condition. Accordingly, above each of the slotted apertures 8 a small transverse or horizontal slot 10 is provided in the wing flange 7, and each of the tongues 9 is correspondingly provided with a transversely extending rearwardly projecting rounded lug 11 which may be conveniently formed by indenting the tongue 9 from the front, as shown. This rounded lug 11, under pressure applied to the wing piece, will readily yield so as to pass the upper end of the large slot 8 and will snap into the small upper slot 10, in the attached position of the wing, and this lug 11 will similarly yield out of its holding slot 10 when it is desired to detach the wing from its back piece.

It will be noted that each of the end wings 5 and 6 has a vertical forward edge or end, and similarly downwardly inclined upper and lower edges, so that these wings may be said to droop relatively to their back pieces, upon which they are supported as above described. These bracket-forming end wings 5 and 6 carry two pairs of removable telescopic shoe-supporting rods, each of which comprises an outer tubular piece 12 and an

inner piece 13, which latter is shown as solid, to assure adequate strength, these two telescopic rod pieces having a snug but readily slidable telescoping fit. These rods are arranged to form upper and lower pairs, the upper pair of rods being adjacent to the upper inclined edges of the end wings 5 and 6, while the lower pair of rods is adjacent to the lower inclined edges of these wings. Each of such pair of rods comprises an upper rear rod and a lower front rod.

The outer end of each of the rod pieces 12 and 13 is shown as passing through the adjacent bracket wing, and in the particular construction shown it is removably secured thereto to move therewith by means which will now be described. The rod end carries a globular or spherically rounded head 14, inwardly from which the rod is provided with a fixed collar 15, leaving between the head and the collar an annular groove which forms a neck 16, as shown in the drawings, more particularly in Fig. 5. The adjacent bracket-forming end wing, such as 6, Figs. 3, 4 and 5, is provided with a segmental hole 17, which is for the most part circular but the upper edge of which is straight or flat along a horizontal line forming a chord on the circle, and by which the hole 17 is of reduced vertical diameter. From the ends of this chord the sheet metal of the end wing is slitted upwardly to provide a downwardly extending spring tongue 18, the lower free end of which is thus formed by the chord of the circular portion of the hole 17, this tongue 18 normally lying flat in vertical alignment with or in the plane of the end wing, such as 6. The larger circular portion of the hole 17 is of substantially the same or only a trifle larger in diameter than the diameter of the rounded head 14, so that if this hole were completely round or circular the head 14 would pass freely through it but which, in the construction shown, it cannot do because of the lower end of the spring tongue 18.

In mounting a rod in place on an end wing to be supported thereby, the round head 14 is inserted through the hole 17 from the inner side of the wing, this rounded head first pushing the spring tongue 18 aside and then releasing it, whereupon the lower end of this tongue snaps into place between the head 14 and collar 15, with its lower end closely adjacent to the upper side of the neck 16 and with the lower side of this neck resting upon the lower edge of the hole 17, so that this lower edge of the hole 17 is then seated in the groove between the head 14 and collar 15, this being the assembled condition shown in the drawings. For removing a shoe rod, its rounded head 14, at each end thereof, is merely, by a reverse operation, snapped inwardly past the end of the spring tongue 18. The collar 15 could be similarly snapped past the tongue 18 in either direction of

movement, although not quite so easily in the particular construction shown, but this is unnecessary and obviously would require that the two telescopic rod pieces 12 and 13 would have to be pulled apart and separated, which, as above noted, is not required in the construction shown.

The spring tongue 18 is sufficiently stiff to prevent accidental disengagement of the shoe rods from the end wings in the ordinary use or handling of the assembled device. For example, in adjusting the length of the assembled device the bracket-forming end wings 5 and 6 may be moved either towards or away from each other and will carry with them, respectively, the telescopic rod pieces 12 and 13.

If the telescoping rod pieces 12 and 13 merely passed freely through round holes in the end wings 5 and 6 respectively, with a head upon the outer end of each of the rod pieces, or similarly, with the collar 15 abutting against the outer side of the wing 5 or 6, it is obvious that when the wings 5 and 6 are moved towards each other, the rod pieces 12 and 13 would not follow and it would be necessary to push these rod pieces into place separately. Also, in removing the shoe rods for disassembling the device, it would be necessary to separate the two rod pieces 12 and 13, and similarly necessary to have the two rod pieces in a separated condition for replacing them again in assembling the device. There is no such inconvenience in the construction shown, in which the outer ends of the rod pieces 12 and 13 are anchored to the respective end wings 5 and 6, as above described. However, it should be obvious that similar desirable results could be secured with modified constructions more or less different from the particular construction shown in the drawings and above described.

Each of the back frame pieces 1 and 2 has a hole 19 near its outer end and upper edge, to provide for mounting or supporting the entire device upon a wall or upon the inner side of a closet door. These holes 19 may be passed over ordinary screw hooks in the wall and as readily unhooked or removed therefrom. Or if preferred, the device may be more rigidly and permanently secured in place by means of screws or nails passing through these holes 19. Similar holes 20 are provided near the upper edge and adjacent the rear of each of the end wings 5 and 6, which provide an alternative means of supporting the device, if desired, by means of a cord or wire by which the device may be hung on a wall in substantially the same manner as a picture.

The entire assembled device may be conveniently adjusted as to its length according to a desired capacity, or according to the space which may be available, merely by grasping either the outer ends of the back

frame pieces 1 and 2 or the wings 5 and 6. As is indicated in Fig. 2, two rows of shoes, an upper row and a lower row, may be supported and securely retained respectively upon the upper pair of rods and upon the lower pair thereof. In each instance, as shown, the heel of the shoe is hooked over the upper rear rod of a pair while the sole of the shoe rests upon the lower front rod of the same pair of rods. For shipment, storage, or packing in a trunk or suitcase for traveling, it is obvious that the assembled device may be made into a relatively small flat package. Also it may be quickly and conveniently either reduced to a knock-down condition or assembled and installed for use. In taking the device apart, the shoe rods are removed and their pieces 12 and 13 fully telescoped together, the end wings 5 and 6 are removed from the back frame pieces 1 and 2 and these pieces are also fully telescoped together. Obviously, by reverse operations, the device may be assembled for use.

The convenience and economy of manufacture of the shoe rack of this invention should be obvious. The sheet metal parts, comprising the back members 1 and 2 and the end wings 5 and 6, all may be easily formed by simple stamping operations. The shoe rods shown are also very inexpensive. In fact, similar telescopic rods per se are extensively on the market and in common use for hanging half curtains on kitchen windows and the like.

It is obvious that various modifications may be made in the construction shown in the drawings and above particularly described, within the principle and scope of the invention as defined in the appended claims.

I claim:

1. A shoe rack comprising a flat two-piece horizontally extending telescopic sheet metal back frame part, a flat forwarding projecting sheet metal bracket-forming end wing carried by the outer end of each piece of the back frame part, and a pair of two-piece telescopic shoe-supporting rods carried at their outer ends by the end wings, and in which the outer piece of the said back frame part is provided with upper and lower inturned flanges forming guide grooves for the upper and lower edges of the inner piece of the said telescopic back frame part.

2. A shoe rack comprising a flat two-piece horizontally extending telescopic sheet metal back frame part, a forwardly projecting sheet metal bracket-forming end wing carried by the outer end of each piece of the back frame part with the upper and lower edges of each end wing inclined downwardly from the back frame part, an upper pair of two-piece telescopic shoe-supporting rods carried at their ends by the respective end wings adjacent their upper edges and comprising an upper

rear rod and a lower front rod, a pair of lower two-piece telescopic shoe-supporting rods carried at their ends by the respective end wings adjacent their lower edges and comprising an upper rear rod and a lower front rod, means providing for the removal of the shoe-supporting rods from the end wings, and means for detachably securing the end wings to the respective pieces of the back frame part, in which the outer piece of the said back frame part is provided with upper and lower inturned flanges forming guide grooves for the upper and lower edges of the inner piece of the said telescopic back frame part.

3. A shoe rack comprising a flat two-piece horizontally extending telescopic sheet metal back frame part, a forwardly projecting flat sheet metal bracket-forming end wing carried by the outer end of each piece of the back frame part, a pair of two-piece telescopic shoe-supporting rods carried at their outer ends by the said bracket wings, means for detachably securing the end wings to the respective pieces of the back frame part, and means providing for the removal of the shoe-supporting rods from the end wings, in combination with a right angular inturned flange along the rear vertical edge of each of the said bracket-forming end wings, each of such flanges having therein a plurality of vertically spaced perforations, and a plurality of vertically spaced upstanding tongues struck forward from the outer end portion of each of the said pieces of the telescopic back frame part and over which said perforations may be engaged for detachably securing the end wings to the back frame part.

4. A shoe rack comprising a flat two-piece horizontally extending telescopic sheet metal back frame part, a forwardly projecting sheet metal bracket-forming end wing carried by the outer end of each piece of the back frame part with the upper and lower edges of each end wing inclined downwardly from the back frame part, an upper pair of two-piece telescopic shoe-supporting rods carried at their ends by the respective end wings adjacent their upper edges and comprising an upper rear rod and a lower front rod, a pair of lower two-piece telescopic shoe-supporting rods carried at their ends by the respective end wings adjacent their lower edges and comprising an upper rear rod and a lower front rod, means providing for the removal of the shoe-supporting rods from the end wings, and means for detachably securing the end wings to the respective pieces of the back frame part, in combination with right angular inturned flanges along the rear vertical edge of each of the said bracket-forming end wings, each of such flanges having therein a plurality of vertically spaced perforations, and a plurality of vertically spaced upstanding tongues struck forward from the outer end portion

of each of the said pieces of the telescopic back frame part and over which the said perforations may be engaged for detachably securing the end wings to the back frame part.

5. A shoe rack comprising a two-piece horizontally extending telescopic back frame part, a forwardly projecting bracket member carried by the outer end of each piece of the back frame part to be movable therewith, a pair of two-piece telescopic shoe-supporting rods carried at their outer ends by said bracket members, means for detachably mounting the bracket members on the respective pieces of the back frame part, and means for removably mounting the shoe-supporting rods on the bracket members, in combination with a plurality of upstanding tongues on the outer end of each of the said pieces of the telescopic back frame part, openings being provided in the said bracket members to slip over the said tongues for thereby detachably mounting the bracket members on the respective pieces of the back frame part.

6. A shoe rack comprising a flat two-piece horizontally extending telescopic sheet metal back frame part, a forwardly projecting flat sheet metal bracket-forming end wing carried by the outer end of each piece of the back frame part, a pair of two-piece telescopic shoe-supporting rods carried at their outer ends by the said bracket wings, means for detachably securing the end wings to the respective pieces of the back frame part, and means providing for the removal of the shoe-supporting rods from the end wings, in combination with a right angular inturned flange along the rear vertical edge of each of the said bracket-forming end wings, each of such flanges having therein relatively large upper and lower spaced perforations with a smaller perforation adjacently above the larger perforation, vertically spaced upper and lower upstanding resilient tongues struck forward from the outer end portion of each of the said pieces of the telescopic back frame part and over which the said larger perforations may be engaged respectively, and a rounded lug on the back of each of said tongues to snap into or ride out of the said smaller perforation for thereby detachably securing the end wings to the back frame part while preventing their accidental disengagement therefrom.

7. A shoe rack comprising a flat two-piece horizontally extending telescopic sheet metal back frame part, a forwardly projecting flat sheet metal bracket-forming end wing carried by the outer end of each piece of the back frame part, a pair of two-piece telescopic shoe-supporting rods carried at their outer ends by the said bracket wings, means for detachably securing the end wings to the respective pieces of the back frame part, and means providing for the removal of the shoe-

supporting rods from the end wings, in combination with a rounded head on the outer end of each piece of a said telescopic shoe-supporting rod, a collar fixed on the rod inward from the head and forming a neck between the head and the collar, a hole provided through the adjacent end wing for the passage of said head with said hole having at least one diameter thereof too small to permit the free passage of the head, and a spring tongue formed in one piece with the end wing and having a free end defining such smaller diameter of the hole so that thereby the rounded head may be snapped past the free end of the tongue in passing through said hole in either direction and the said spring tongue through its engagement between the head and the collar will prevent the accidental disengagement of the rod from the end wing while providing for its intentional removal and replacement.

8. A shoe rack comprising a flat two-piece horizontally extending telescopic sheet metal back frame part, a forwardly projecting sheet metal bracket-forming end wing carried by the outer end of each piece of the back frame part with the upper and lower edges of each end wing inclined downwardly from the back frame part, an upper pair of two-piece telescopic shoe-supporting rods carried at their ends by the respective end wings adjacent their upper edges and comprising an upper rear rod and a lower front rod, a pair of lower two-piece telescopic shoe-supporting rods carried at their ends by the respective end wings adjacent their lower edges and comprising an upper rear rod and a lower front rod, means providing for the removal of the shoe-supporting rods from the end wings, and means for detachably securing the end wings to the respective pieces of the back frame part, in combination with a right angular intumed flange along the rear vertical edge of each of the said bracket-forming end wings, each of such flanges having therein relatively large upper and lower spaced perforations with a smaller perforation adjacently above the larger perforation, vertically spaced upper and lower upstanding resilient tongues struck forward from the outer end portion of each of the said pieces of the telescopic back frame part and over which the said larger perforations may be engaged respectively, a rounded lug on the back of each of said tongues to snap into or ride out of the said smaller perforation for thereby detachably securing the end wings to the back frame part while preventing their accidental disengagement therefrom, a rounded head on the outer end of each piece of a said telescopic shoe-supporting rod, a collar fixed on the rod inward from the head and forming a neck between the head and the collar, a hole provided through the adjacent end wing for the passage of said head with said hole hav-

ing at least one diameter thereof too small to permit the free passage of the head, and a spring tongue formed in one piece with the end wing and having a free end defining such smaller diameter of the hole so that thereby the rounded head may be snapped past the free end of the tongue in passing through said hole in either direction and the said spring tongue through its engagement between the head and the collar will prevent the accidental disengagement of the rod from the end wing while providing for its intentional removal and replacement.

In witness whereof, I hereunto subscribe my signature.

LAVANT RICHMOND HACKLEY.