

Feb. 24, 1953

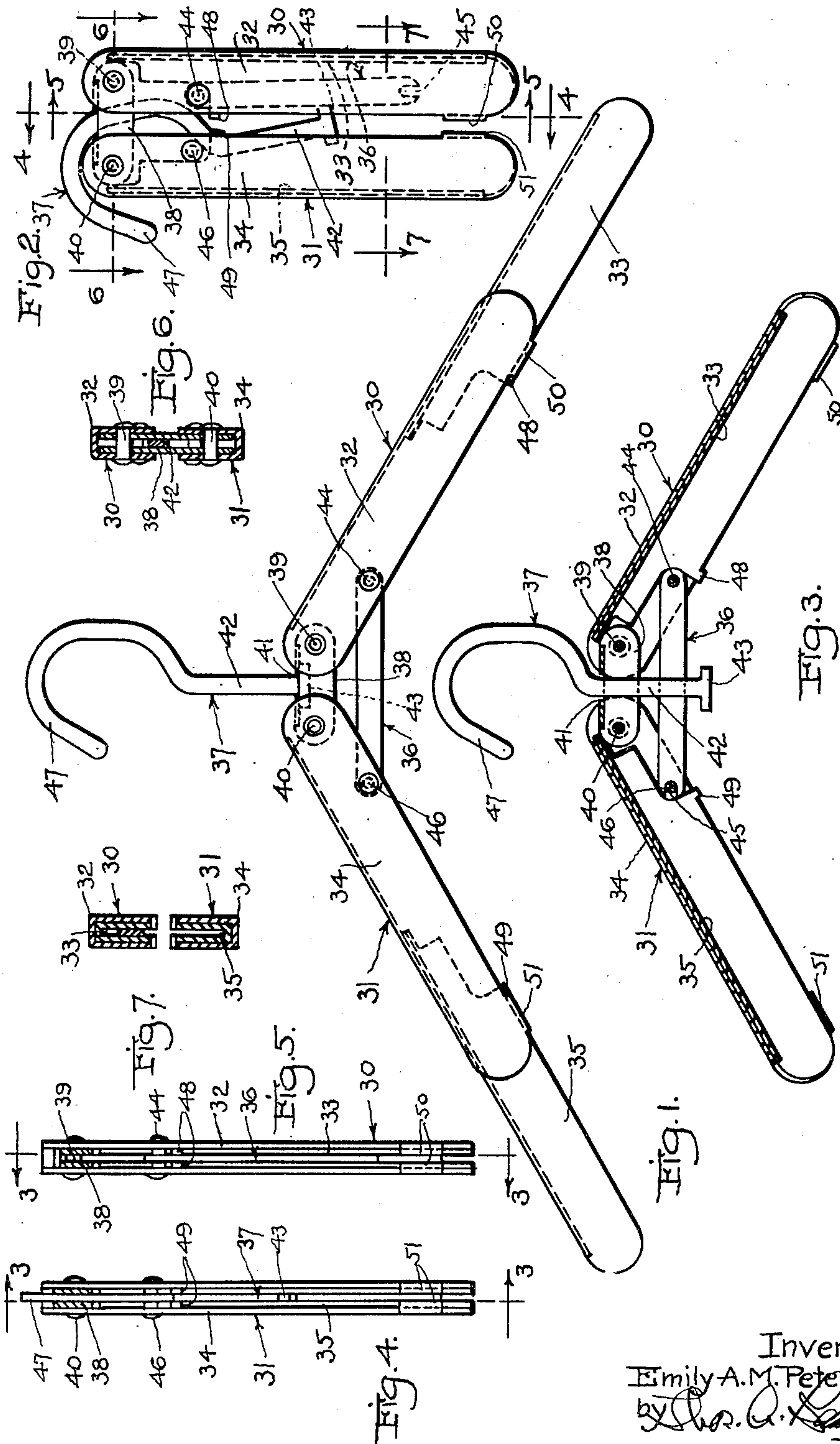
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GARMENT HANGER

Filed April 24, 1948

2 SHEETS—SHEET 1



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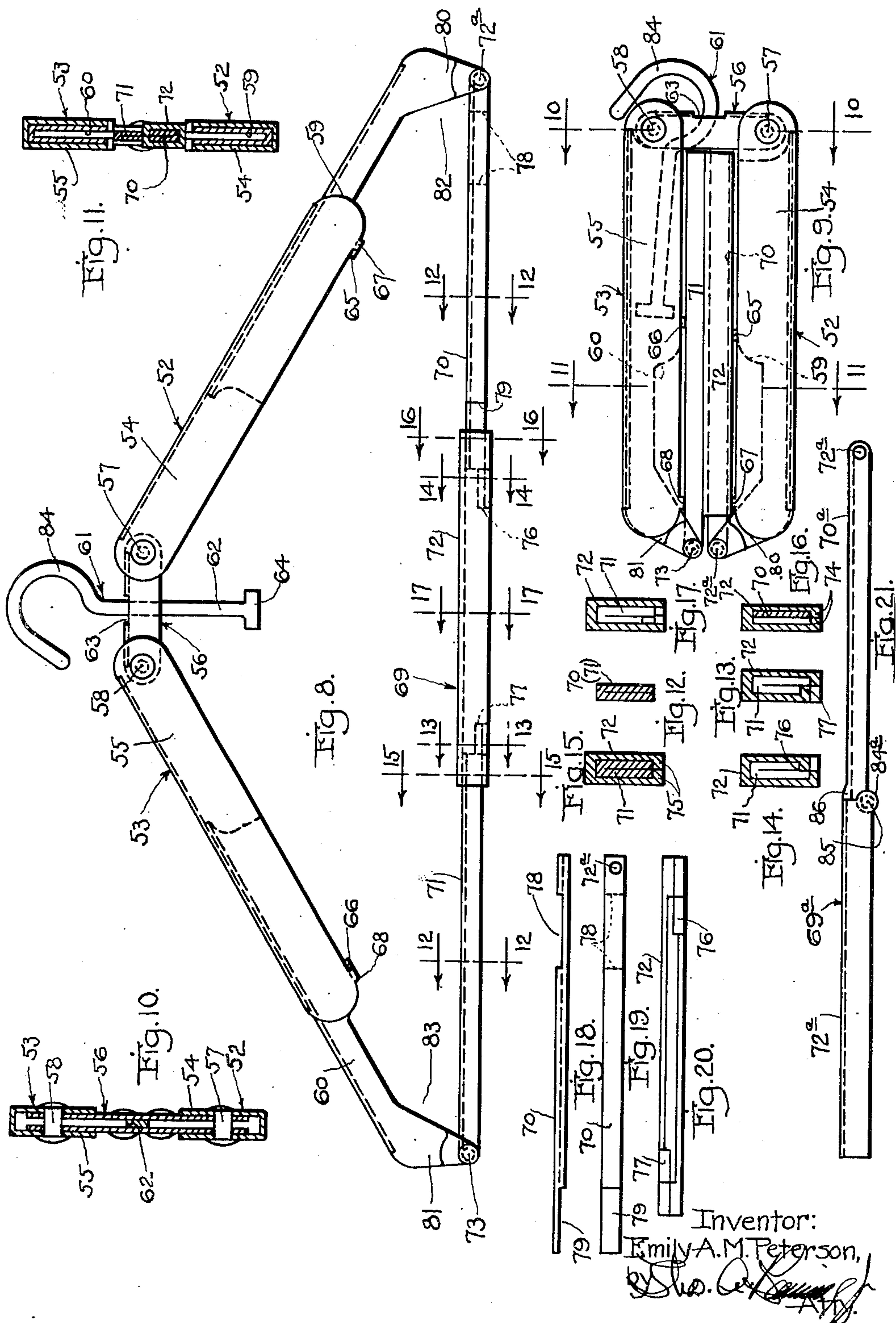
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2 SHEETS—SHEET 2



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UNITED STATES PATENT OFFICE

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GARMENT HANGER

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2 Claims. (Cl. 223—89)

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This invention relates to improvements in garment hangers, and the like. Generally speaking, the invention relates to garment hangers of the type in which there are provided two outwardly extending arms, the inner ends of which are connected to a central upwardly extending hook by which the hanger is supported from a suitable support, the arms extending outwardly and slanting downwardly. In use a garment, such as a coat, may be set onto the arms with the coat shoulders supported on the arms, the coat hanging down from the arms. Sometimes such hangers are provided with crosswise extending bars, which reach across the lower portions of the hangers in substantially horizontal fashion, and on which other garments may be supported. Trousers and other garments are conveniently supported on these cross-bars.

It is a prime object of the present invention to provide a garment hanger of the general type above mentioned, and which hanger is so constructed that it can be folded into a small size convenient for carrying in a small purse or other traveller's portfolio. It is an object in this connection to so arrange and construct the hanger that when folded up it will be completely contained within a space of from four to six inches in length, and two to three inches in width, and a thickness of the order of $\frac{1}{4}$ to $\frac{1}{2}$ inch. Of course the exact dimensions will be a matter of design and thickness of metal, etc., but it is an object to so arrange the hanger that it can be folded into a space comparable in size to the dimensions mentioned above.

In connection with the foregoing, it is a further object to so form the hanger that when folded up it will present a substantially smooth flat surface without projections which might catch on to other objects contained in the purse or other container; and it is also an object to so arrange the several elements of the hanger that when it is unfolded and brought into normal working condition it will be of sufficient strength and stiffness to carry the loads imposed by such garments as will normally be placed and supported on the hanger.

It is a further object to so arrange the several elements comprising the hanger that when said elements are unfolded and brought into normal working condition the forces imposed by the weight of the garments supported on the hanger will serve to retain the hanger in its locked open condition, that is, in its normal working condition.

It is a further object to so arrange the several

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parts of the hanger that the operations needed to unfold the hanger and bring it into normal working condition are simple and readily performed without the need of special tools, and are of such a nature that unskilled persons who would be expected to use such utilities will be able to fold and unfold the hangers readily and without special instructions and expertness.

A further object is to so arrange the hanger parts that they can readily be made of sheet metal readily formed into simple shapes by few and simple forming operations; or so that the hanger parts, or some of them, may be readily made from tube or other metal shapes of familiar form.

Other objects and uses of the invention will appear from a detailed description of the same, which consists in the features of construction and combinations of parts hereinafter described and claimed.

In the drawings:

Figure 1 shows a face view of a typical hanger embodying certain of the features of the present invention, the parts being unfolded or opened out into normal working condition; the arms also being extended into full length;

Figure 2 shows a face view of the hanger of Figure 1 but with the parts folded up into small compass and with the hook shifted down into the body of the so folded-up hanger;

Figure 3 shows a central planar section through the hanger with the arms extended outwardly into normal working condition but with the elements of such arms in telescoped condition; and Figure 3 is a section taken on the lines 3—3 of Figures 4 and 5, looking in the direction of the arrows;

Figure 4 is a central view or section taken through the hanger substantially on the line 4—4 of Figure 2, looking in the direction of the arrows, the telescoping elements of the left-hand arm being in telescoped condition;

Figure 5 is a central view or section taken through the hanger substantially on the line 5—5 of Figure 2, looking in the direction of the arrows, the telescoping elements of the right-hand arm being in telescoped condition;

Figure 6 is a cross-section taken on the line 6—6 of Figure 2, looking in the direction of the arrows;

Figure 7 is a cross-section taken on the line 7—7 of Figure 2, looking in the direction of the arrows;

Figure 8 shows a face view of another form of typical hanger embodying certain features of the

present invention, the parts being unfolded or opened out into normal working condition; the arms also being extended into full length, and the crossbar being in position to retain the arms in such working position, and also to provide a horizontal bar support of trousers or other garments to be hung over such cross-bar;

Figure 9 shows a face view of the hanger of Figure 8 but with the parts folded up into small compass and with the hook shifted down into the body of the so folded-up hanger;

Figure 10 is a cross-section taken on the line 10—10 of Figure 9, looking in the direction of the arrows;

Figure 11 is a cross-section taken on the line 11—11 of Figure 9, looking in the direction of the arrows;

Figure 12 is a cross-section taken on the line 12—12 of Figure 8, looking in the direction of the arrows, being a typical section through each of the hinged arm sections of the cross-bar element;

Figure 13 is a cross-section taken on the line 13—13 of Figure 8, looking in the direction of the arrows, being a typical section through the stop lug for limiting movement of the left-hand hinged arm section of the cross-bar;

Figure 14 is a cross-section taken on the line 14—14 of Figure 8, looking in the direction of the arrows, being a typical section through the stop lug for limiting movement of the right-hand hinged arm section of the cross-bar;

Figure 15 is a cross-section taken on the line 15—15 of Figure 8, looking in the direction of the arrows, being a typical section through the supporting interconnection between the hinged left-hand hinged arm and the central element of the cross-bar;

Figure 16 is a cross-section taken on the line 16—16 of Figure 8, looking in the direction of the arrows, being a typical section through the supporting interconnection between the hinged right-hand hinged arm and the central element of the cross-bar;

Figure 17 is a cross-section taken on the line 17—17 of Figure 8, looking in the direction of the arrows, being a typical central section through the central element of the cross-bar;

Figure 18 shows a plan view of the right-hand hinged arm element of the cross-bar of the construction of Figure 8;

Figure 19 shows a side face view of the right-hand hinged arm element of the cross-bar of the construction of Figure 8, and corresponds to Figure 18;

Figure 20 shows a bottom-face view of the central element of the cross-bar element of the construction of Figure 8; and

Figure 21 shows a side-elevation of a modified form of cross-bar element for the construction of Figure 8, being a form in which the right-hand and central elements of the cross-bars are hinged together, the right-hand element being in turn hinged to the end of the telescoping section of the arm at the right-hand of the hanger proper;

In Figures 6 and 7 I have shown the sections on enlarged scale as compared to Figures 1, 2, 3, 4 and 5; and in Figures 10, 11, 12, 13, 14, 15, 16 and 17 I have shown the sections on enlarged scale as compared to Figures 8 and 9.

In the arrangement shown in Figures 1 to 7, inclusive, I have provided the two garment supporting arms 30 and 31. Each of these arms comprises two telescoping sections, being the sections 32, 33, and 34, 35, respectively for the two arms.

These telescoping sections are preferably of U-shaped cross-section, being made from channel sections of aluminium or other suitable light material. The sections 33 and 35 telescope into the sections 32 and 34, and the sizes of the channels are such that the inner sections 33 and 35 are open for at least the thickness of a sheet of metal to provide for a cross-bar 36 or for a hook element 37, as will presently appear.

Extending between the upper end portions of the two outer channels 32 and 34 is a channel section hinge bar 38. This bar is pivotally connected to the two channel sections 32 and 34 by the pins or rivets 39 and 40; and the length of this hinge bar 38 is such that when the two channels 32 and 34 are rocked into parallelism (as shown in Figure 2) the proximate edges of these channels are separated a distance such as may be required for accommodation of certain other parts, as will presently appear. The hinge bar 38 is so connected to the two arm bars or channels 32 and 34 that the closed edge of said hinge bar lies to the upper end of the hanger; and this closed edge is then provided with the opening 41 through which the stem 42 of the hook extends. This opening is, however, of such size that the enlarged end 43 of the stem cannot pass through the opening when the hook element is drawn out, as shown in Figure 1 to provide for support of the hanger. It will be seen, too, that the hook may either be drawn out into its hanger supporting position (Figure 1) or may be withdrawn into a fully collapsed condition when the hanger is folded up (Figure 2). In any case the thickness of the hook element is accommodated within the channel space of the hinge bar 38.

The cross-bar 36 has its right-hand end pivotally connected to the channel 32 of the right-hand arm element 30 by the pin or rivet 44. This cross-bar is a simple metal bar, and the pivotal connection at the pin 44 is somewhat loose so that the cross-bar may readily shift back and forth on said pin 44 if need be when folding up the hanger into the folded condition shown in Figure 2. The free end of this cross-bar 36 is notched as shown at 45 (see Figure 2 as well as Figures 1 and 3); and a pin or rivet 46 is passed through the channel element 34 so that when the hanger is opened out into working position this notch may be engaged with such pin 46 to retain the arms 30 and 31 of the hanger in their outwardly extended positions as shown in Figures 1 and 3. When the hanger is to be folded up it is only necessary to spread the arms 30 and 31 slightly, thus disengaging the notch 45 of the cross-bar from the pin 46, whereupon said cross-bar may be swung into the body of the channel 32 of the arm 30 (and also into the body of the telescoped channel 33 of said arm 30, as will be apparent from Figures 2 and 5).

It is here noted that the pins or rivets 44 and 46 are located rather close to the inner edges of the channels 32 and 34 (instead of being located on the center lines of said channels); and it is also noted that the pin 44 is farther from the pivot 39 of the hinge bar 38 than the pin 46 is from the pivot pin 40 of the hinge bar, and that said pin 46 is closer to the edge of the channel 34 than the pin 44 is with respect to its channel 32. All of these arrangements make it possible to make use of a relatively short cross-bar 36 for a given spread of the arms 30 and 31 when the hanger is opened out, and also provide a maximum of clearance for the hook element 37 when the said hook element is forced back into the

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body of the folded hanger, as shown in Figure 2. That figure shows that when the hook element is thus forced into the body of the folded hanger the pin 46 lies slightly higher than the pin 44, so that the left-hand edge of the hook is accommodated beneath the pin 46, whereas the right-hand edge of the hook is accommodated above the pin 44 without interference from said pins.

The hook element 37 is provided with the hooked end portion 47 which may be carried by a suitable supporting element onto which the hanger is set. Examination of Figure 2 shows that the form of the hook element, including this hooked end portion 47 is such that when the hook element is forced down into the body of the folded hanger said hooked portion 47 curves around the curved end portion of the arm 31, thus bringing the several parts into small compass, and accommodating the hooked portion 47 in a natural and compact manner.

Each of the telescoping elements or channels 33 and 35 is provided with an inwardly reaching lug near its inner end, these being the lugs 48 and 49, respectively. These lugs extend directly from the inner edges of the channels 33 and 35; and the channel sections 32 and 34 are provided with corresponding lugs 50 and 51 near the outer ends of said channels, these lugs extending laterally from the planes of the channel sections, so that said lugs 50 and 51 extend into the planes of travel of the lugs 48 and 49 when the channel elements 33 and 35 are drawn out into extended position, as shown in Figure 1. Thus the outward sliding movements of the telescoped channels 33 and 35 are limited by the interengagement of the pairs of lugs. The telescoping movements are, however, not interfered with or prevented by such lugs. It has been found that by making the telescoping channels 33 and 35 of a slightly snug fit into the channels 32 and 34 the extensions will retain their extended positions when the hanger is in use, and without the need of providing special means to retain these extension arms 33 and 35 in such extended positions. Nevertheless, this snugness of fit does not prevent the telescoping action when needed, with relative ease of operation.

Examination of Figures 1, 2 and 3 shows that the inner end portions of the telescoping elements 33 and 35 are so formed that full telescoping movement may be effected without interference from the pins 44 and 46, or the pins 39 and 40. Also, that by this arrangement it is possible to secure a maximum length of telescoping action or co-operation between the telescoping sections so that a maximum rigidity is ensured when the sections 33 and 35 are extended into the working position.

It will be seen from Figure 2 that when the parts are folded together the stem of the hook element is accommodated within the telescoped sections or elements 33 and 35, this being possible since said hook element comprises a single thickness of metal. Likewise, the hook-bar or element 36 is accommodated within the telescoped channel element 33 and behind the stem of the hook, as shown in Figure 2. If desired a suitable snap-hook or lock may be provided for retaining the arms 30 and 31 in the folded position of Figure 2.

Sometimes it will be desirable to make provision for a cross-bar between the two arms, and on to which such garments as trousers and the like may be placed. It is evident that in the arrangement of Figures 1 to 7, inclusive, the bar 36 is too short to accommodate such articles. If said bar

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should be located between the free ends of the arm elements 32 and 34, still its length would not be sufficient to accommodate such garments as trousers without folding said garments undesirably. Nevertheless I do contemplate such placement of the bar 36 at any convenient position between the arm elements 32 and 34 in the form shown in Figures 1 to 7, inclusive. I shall now describe an alternative arrangement in which the cross-bar is extended between the telescoped arm elements, thus affording a greater length of such cross-bar and providing for accommodation of larger widths of garments on the same.

Referring now to Figures 8 to 20, inclusive, in this case the two arms are shown in their entirety by the numerals 52 and 53. These comprise the outer channel elements 54 and 55 pivoted to the hinge-bar 56 at the points 57 and 58, respectively; and the inner channel elements 59 and 60 which are telescoped into said channel elements 54 and 55. This construction also includes the use of a channel section for the hinge-bar 56, and the hook element 61 having its stem 62 extended through the opening 63 formed in the flange of said cross-bar section, the hook element being provided with the enlargement 64 on its stem and of size to not pass through said opening 63 so that the hanger may be suspended by use of such hook element. In the present case, also the telescoping elements or channels are provided with the edge lugs 65 and 66 which are adapted to engage with companion lugs 67 and 68 formed from the inner edges of the arm elements 52 and 53 adjacent to their extreme ends, said lugs 67 and 68 are also displaced from the planes of the channels 54 and 55 into the planes of the channels 59 and 60 so that the withdrawing movements of the channels 59 and 60 will be limited by engagement of the lugs 65 and 66 with the companion lugs 67 and 68.

The arrangements thus far described in this alternative construction are similar to those of the construction of Figures 1 to 7, inclusive. In the present case, however, I have provided the cross-bar 69 which is connected to the extreme end portions of the telescoping elements 59 and 60, so that this cross-bar serves to provide the desired connection between the two arms to retain them in spread and working position, and also serves to provide a cross-bar on to which a garment such as the trousers may be placed. This cross-bar may be connected to the extreme end portions of the telescoping elements 59 and 60 in any convenient manner, either permanently or temporarily. In the showing of Figures 8 to 20, inclusive, I have formed this cross-bar sectionally, and have hinged the ends of the proper sections to the ends of the arm elements 59 and 60. For this purpose the bar 69 comprises the two end sections 70 and 71, and the intermediate section 72. Conveniently these end sections 70 and 71 are formed of flat sheets folded tightly together into double thicknesses. The pivoted ends of these sections 70 and 71 are embraced between the channels 59 and 60, and are pivotally connected thereto by the cross-pins 72^a and 73. It is here noted that the sections 70 and 71 may conveniently be made of metal somewhat thinner than the metal used for the other parts of the device, so that such double thickness sections 70 and 71 may be accommodated within the channel openings of the elements 59 and 60; but in case of need said channel elements 59 and 60 may be slightly spread to provide the needed clearance for such element 59 and 60.

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The central section 72 of this cross-bar is also made of convenient section, being shown as comprising a channel section embracing the sections 70 and 71. The parts are so proportioned that a sufficient amount of overlap may be provided between the proximate ends of the sections 70 and 71, and the section 72, so that sufficient rigidity is provided when these parts are assembled, to sustain the garment to be carried by such cross-bar.

The end portions of the section 72 are shown as being provided with the inwardly extending or closed channel portions 74 and 75, such portions reaching inwardly along the length of the section 72 far enough to provide for complete closure of the channel of the section 72 for the lengths of overlap needed when the sections 70 and 71 are engaged with the central section 72 as shown in Figure 8.

Now it will be seen that with the parts assembled into the form shown in Figure 8 the imposition of a load on to the arms 52 and 53, as by placement of a garment thereon, or the imposition of a load on to the cross-bar 69, as by placement of a garment thereon, will tend to cause the arms 52 and 53 to swing inwardly towards each other, thus collapsing the device towards its closed condition. To resist this tendency I have shown the following provision;

The central section 72 is provided at one side with the upwardly formed lug 76 at the right-hand end of said central section, so that this lug will interfere with inward movement of the right-hand section 70 when the sections have been telescoped together for the distance shown in Figure 8; and said central section 72 is also provided with the upwardly formed lug 77 at the other side of said central section, so that this lug 77 will interfere with inward movement of the left-hand section 71 when the sections have been telescoped together for the distance shown in Figure 8. These lugs 76 and 77 are relatively short along the length of the central section as is evident from examination of Figure 8 in particular. Thus, when the central section 72 is set on to the ends of the sections 70 and 71 and the parts are slightly telescoped together into the position of Figure 8 the complete cross-bar 69 is provided, the arms 52 and 53 being slightly spread beyond their normal working spread to enable such telescoping to be accomplished, and said arms then being slightly rocked towards each other when the telescoping has been commenced, and until the lugs limit such telescoping movement at the position shown in Figure 8.

The lengths of the sections 70 and 71 are made such, in relation to the lengths of the channel elements 54 and 55, that when the arm sections 59 and 60 have been fully telescoped into the arm sections 54 and 55 said sections 70 and 71 may be accommodated below the position of the hinge-bar 56. Such fact is shown by examination of Figure 9. Likewise, the pivotal points 72 and 73 are located inwardly from the central or axial lines of the channels so that when said sections 70 and 71 are folded or rocked on their pivotal points 72 and 73 they may be brought into parallelism with respect to the arm elements 52 and 53. This fact is also evident from Figure 9. In this connection it is noted that since the section 71 is less than the section 72 in width I have shown the pivotal point 72^a offset from the axial line of the arm 52 a greater distance than the offsetting of the pivotal point 73 from the axial line of the arm 53. This ensures that when the two sections

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70 and 71 are folded into parallelism with respect to their respective arm elements 52 and 53 the parts will be contained within a minimum of space.

In connection with the foregoing it is noted that it is intended that when the device is to be folded up into its collapsed condition, the central cross-bar section 72 shall be telescoped onto the right-hand section 70 of said cross-bar. That fact is evident from examination of Figure 9. To enable such condition to be attained I have made the following provisions. Examination of Figure 20, which is a bottom view of the central section 72, shows that the channel comprising that section 72 is completely open between the lugs 76 and 77. Examination of Figures 18 and 19 also shows that the right-hand section 70 is vertically slotted at 78 on one side, that is, through one thickness of said section 70, such slotting being at position such that by setting the section 72 adjacent to the section 70 (the section 72 having been removed from both of the sections 70 and 71), said section 72 may be slid down over the section 70; and to enable this operation to be performed, said section 70 is also provided with the vertical slotting 79 at its end, and on its side opposite to the slotting 78. When the section 72 is thus slid down over the section 70 the slotting 78 accommodates the lug 76 and the slotting 79 accommodates the lug 77; and said slottings also accommodate the closed portions 74 and 75 of the section 72. When the section 72 has thus been slid down onto the right-hand section 70 the outer or free ends of said sections will be in substantial alignment, and then the section 70 may be rocked on its pivotal point 72 to bring the so combined sections together into parallelism with the arm element 52 as shown in Figure 9.

Now examination of Figures 8 and 9 shows that the pivotal points 72^a and 73 are provided by the inwardly formed hook-ends 80 and 81 on the arm elements 59 and 60. It is also shown that the elements 59 and 60 are of reduced width between said hook portions 80 and 81 and the positions of the lugs 65 and 66. By this means I have provided the open spaces 82 and 83 above the cross-bar element 69 when the device is in working condition, so that garments supported on the cross-bar have a good clearance above the cross-bar as will be evident from examination of Figure 8.

Examination of Figure 9 shows that the hook element of this alternative construction is provided with a somewhat sharper hook proper 84 and a somewhat longer stem, than the form shown in Figures 1 to 7, inclusive. This sharper form of hook provides needed clearance between said hook and the end of the left-hand cross-bar element 71 when the said left-hand element 71 is folded up into the position shown in Figure 9.

In Figure 21 I have shown a modification of the alternative construction of Figures 8 to 20, inclusive. In this modified form of Figure 21 the cross bar has its right-hand section 70^a hinged to the central section 72^a by the hinge 84^a. The pivotal point 85 of this hinge is located below the axial line of the two sections, and a lug 86 is provided on one of section ends so that rocking movement is limited thereby when the two sections are brought into parallelism or axiality.

I wish to point out that the device shown in Figures 1 to 7, inclusive may be used for supporting garments of either large or small size as required; thus it may be used either for children's or adults' garments. When used for children's

garments the arms 30 and 31 may be left in their telescoped condition, and of correspondingly short size, whereas, when the hanger is to be used for adults' garments these arms should be extended to full length as shown in Figure 1.

While I have herein shown and described only certain embodiments of the features of my present invention, still I do not intend to limit myself thereto, except as I may do so in the claims to follow.

I claim:

1. As a new article of manufacture, a garment hanger comprising a pair of arms of channel-shaped cross-section, a hinge-bar extending between the proximate end portions of said arms and telescoped within the channels of said end portions, pivot pins extending between the respective ends of the arm channels and the hinge-bar, a hook element, a suspending connection between the hinge-bar and the hook element, telescoping sections of channel-shaped cross-section slidably mounted within the two arm channels, means to limit the extending movements of the telescoping sections with respect to the arm channels, together with a cross-bar extending between the free ends of the telescoping sections and pivotally connected to said end sections, substantially as described.

2. As a new article of manufacture, a garment hanger comprising a pair of arms of channel-shaped cross-section, a hinge-bar extending between the proximate end portions of said arms and telescoped within the channels of said end portions, pivot pins extending between the respective ends of the arm channels and the hinge-bar, a hook element connected to the hinge-bar, the open sides of the arm channels facing towards each other when the arms are swung into substantial parallelism with respect to each other on the pivot pins, telescoping sections of channel-shaped cross-section slidably mounted within the

arm channels, the open sides of said telescoping section channels also facing towards each other when the arms are swung into substantial parallelism with respect to each other, a cross-bar section pivotally connected to the outer end of each telescoping section, each cross-bar section being of dimension to set into the open side of the channel of the telescoping section to which it is pivotally connected when said cross-bar section is swung into parallelism with respect to its telescoping section, together with disconnectable means to connect the cross-bar sections together in substantial alignment with each other, whereby when said cross-bar sections are connected together in alignment they retain the outer ends of the telescoping sections against spreading from each other, and whereby when the cross-bar sections are disconnected from each other they may be swung on their pivotal connections to the respective telescoping sections and received and retained within the channels of said telescoping sections to thereby enable swinging of the two arms into substantial parallelism with respect to each other and with the cross-bar sections contained within the channels, substantially as described.

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