Sept. 16, 1947. A. E. CHESLER 2,427,385

GARMENT HANGER

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FIG. 1.

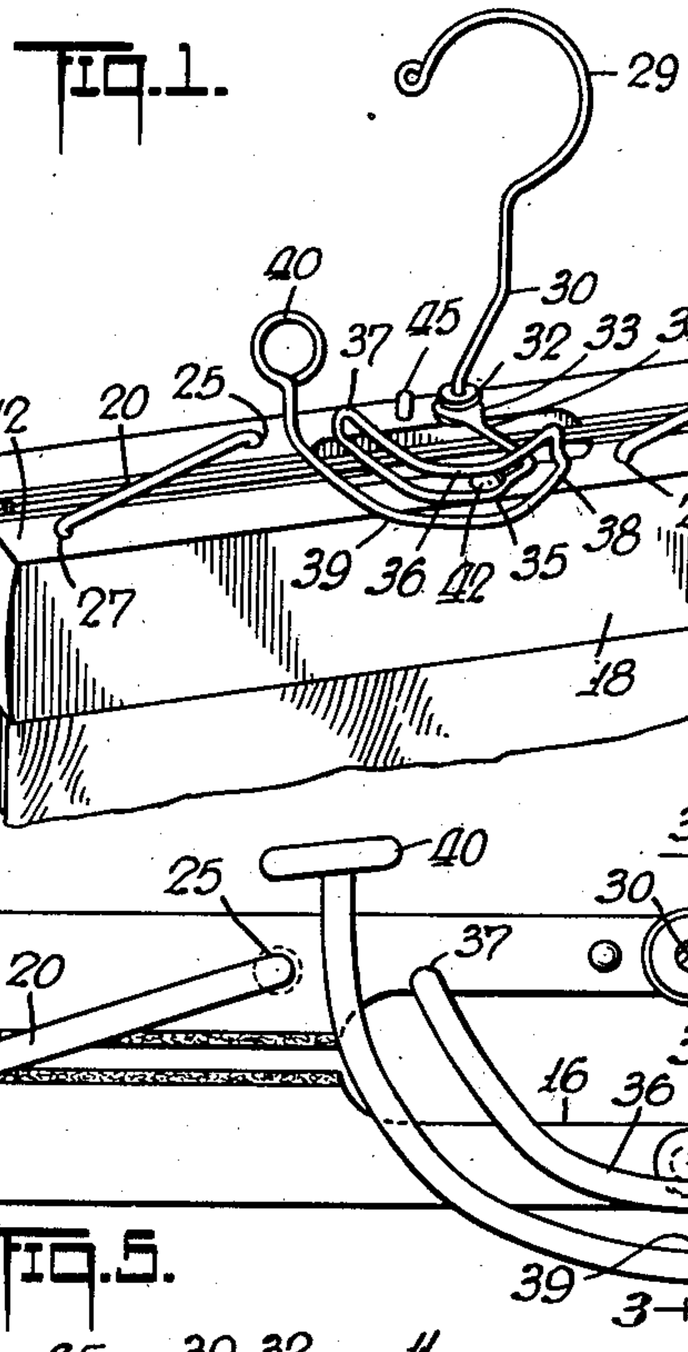

FIG. 2.

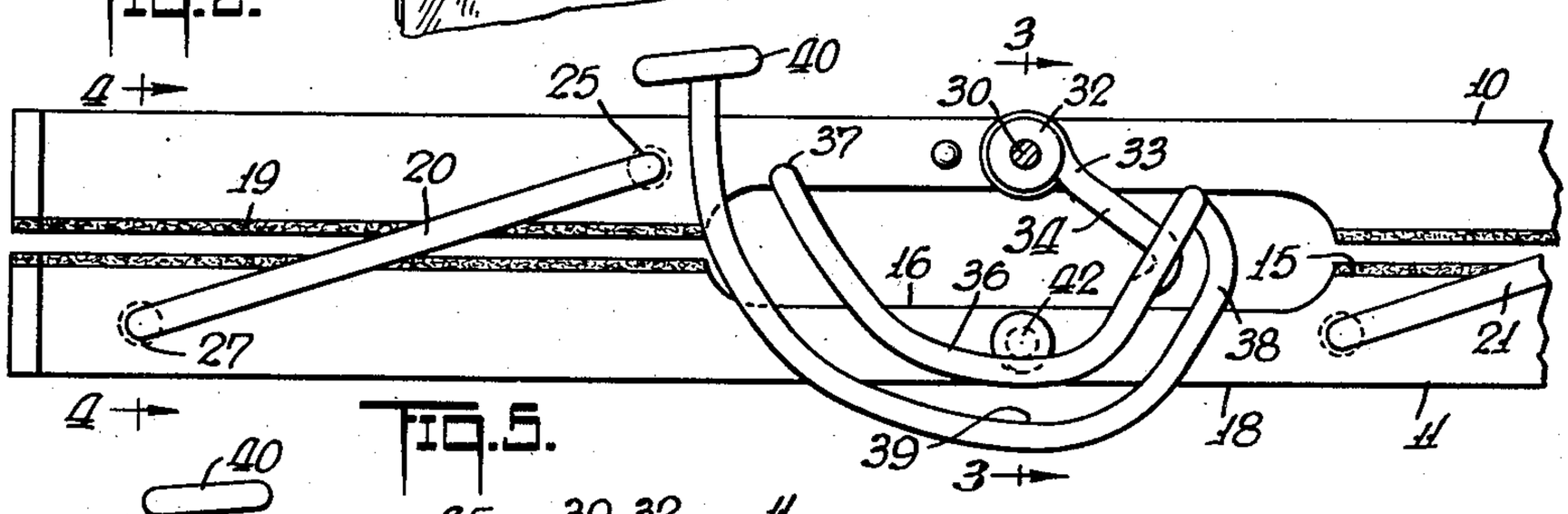

FIG. 5.

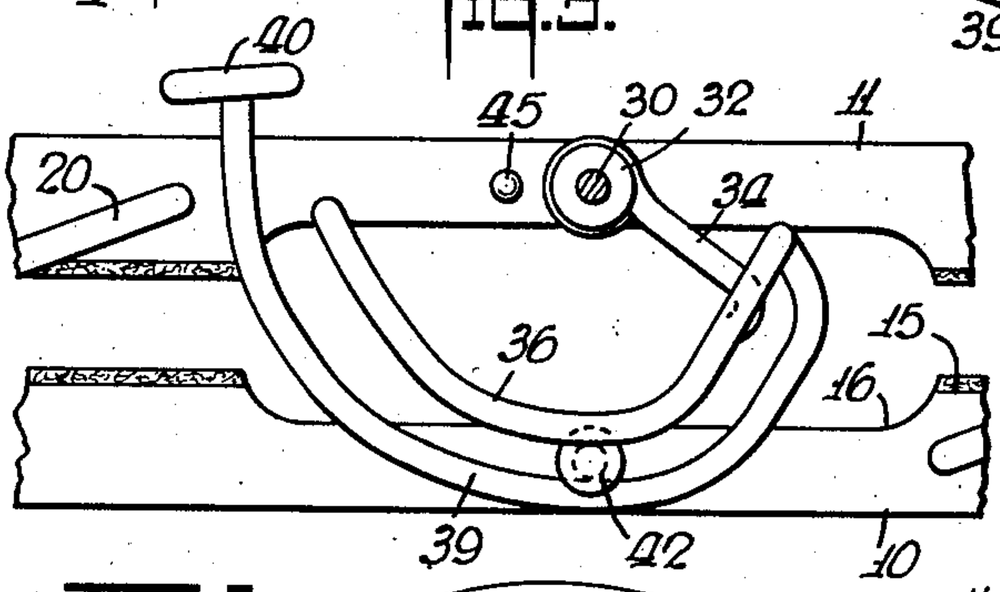

FIG. 3.

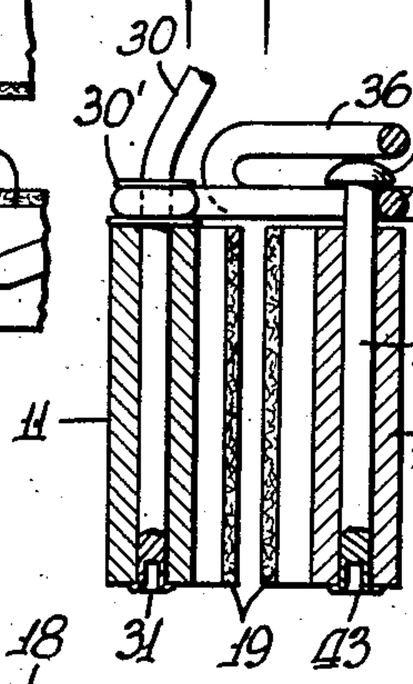

FIG. 4.

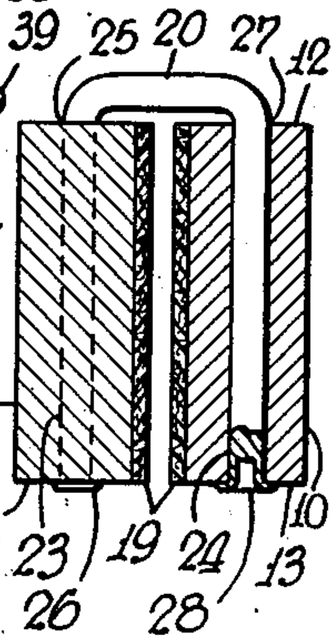

FIG. 6.

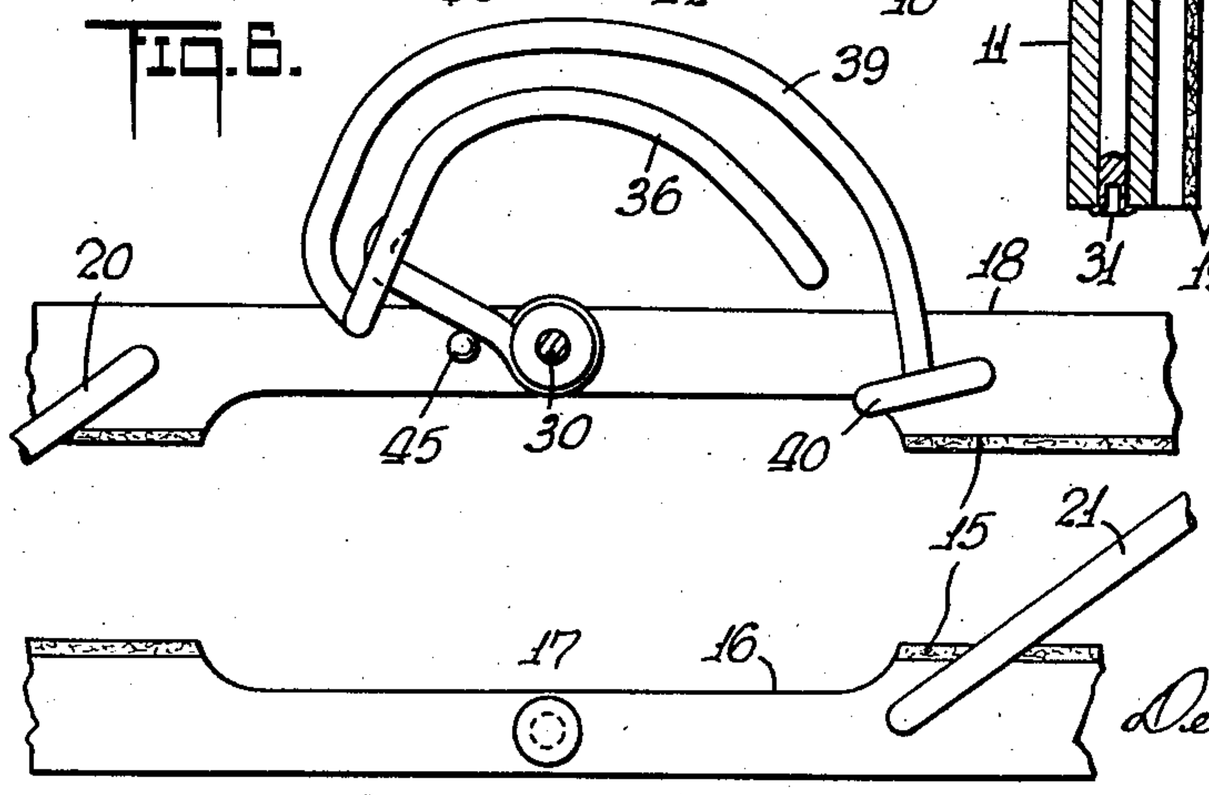

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Fig. 7.

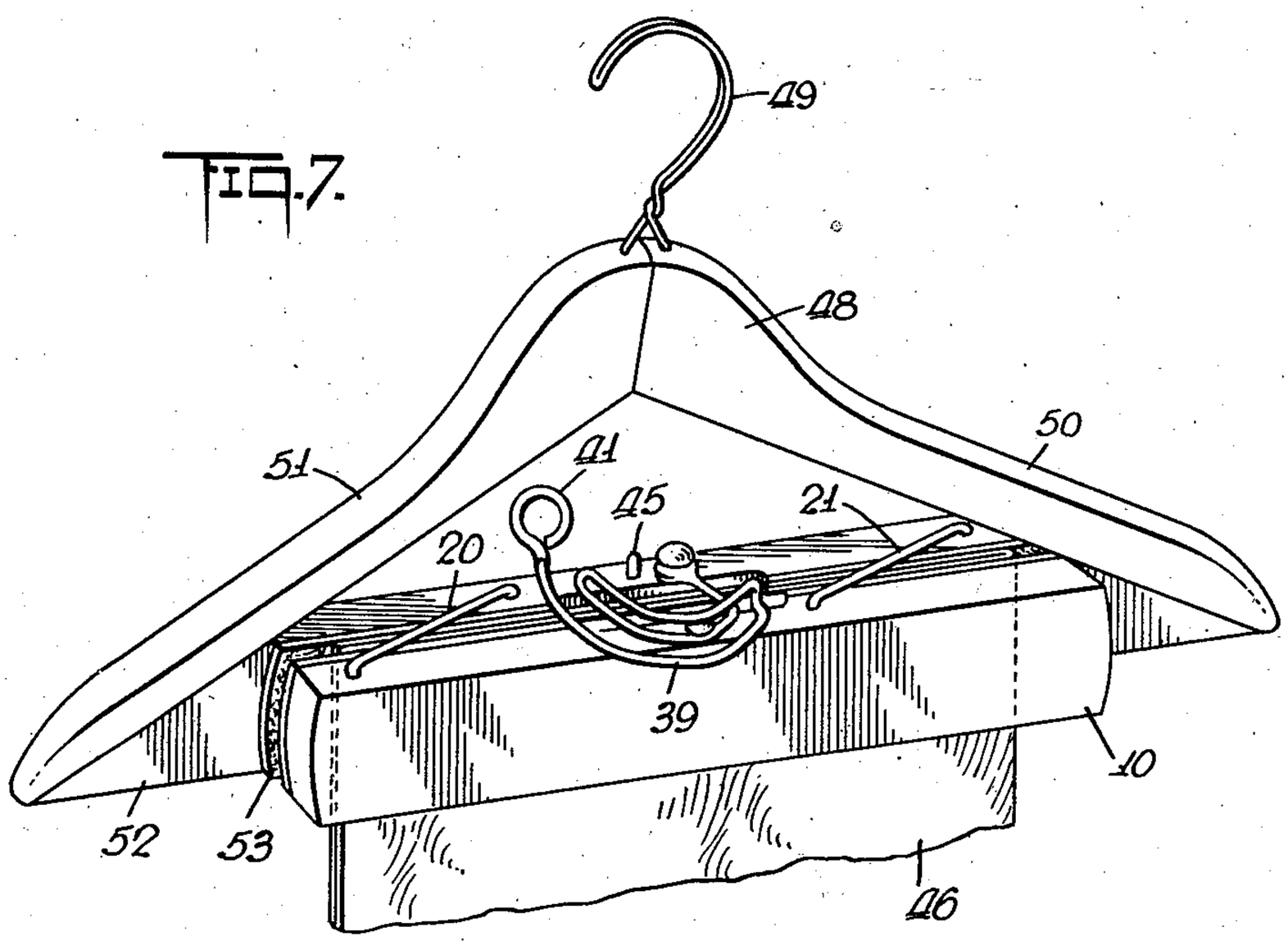
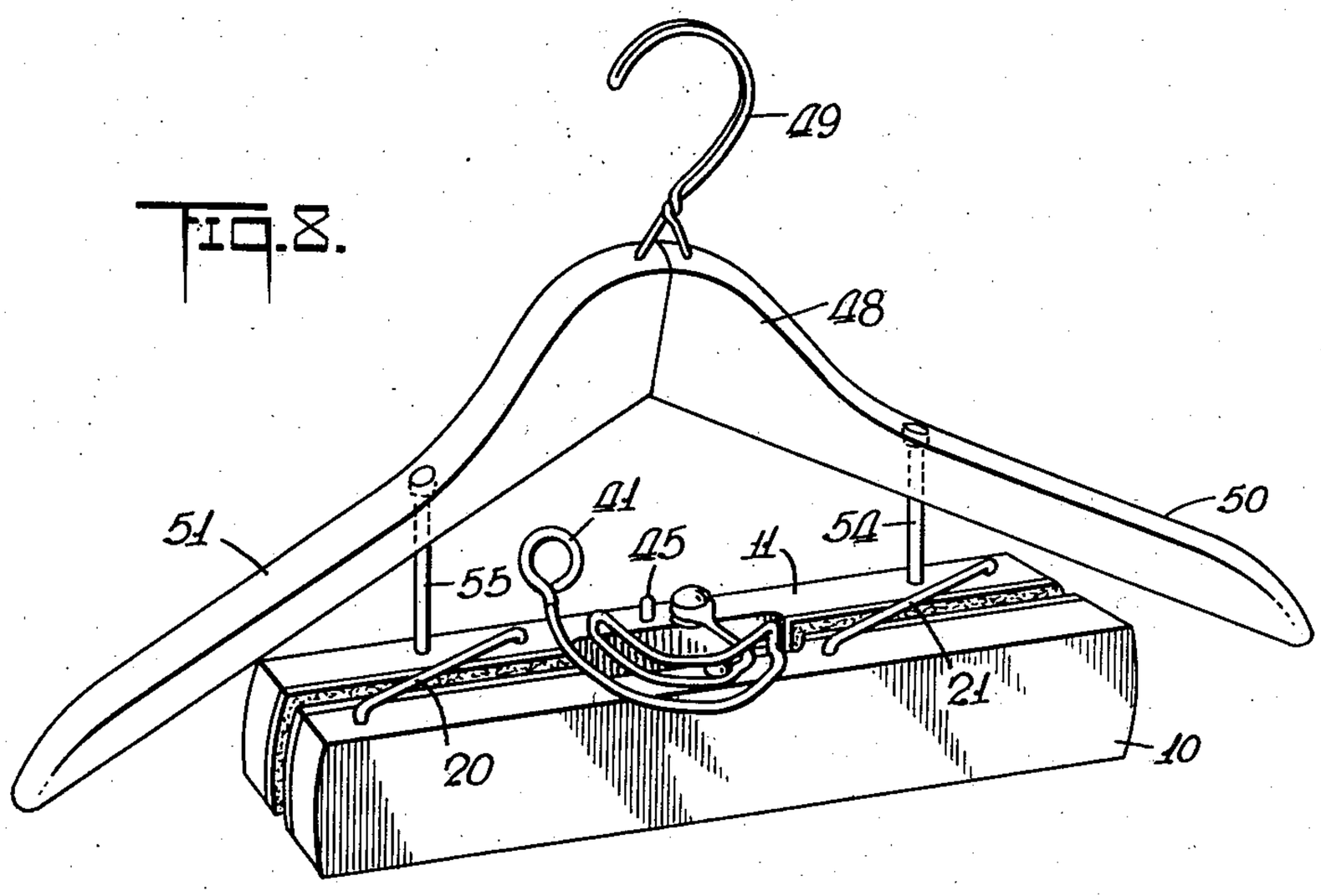


Fig. 8.



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GARMENT HANGER

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18 Claims. (Cl. 223—96)

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The present invention relates to garment hangers of the clamp type for hanging men's trousers, ladies' skirts, or other articles of apparel in desired creased condition.

It is among the objects of the invention to provide a garment hanger that serves to clamp with substantially equal effectiveness, various thicknesses of clothing, for example, the cuff portions of one or a plurality of trousers, which hanger is simple in construction, can be economically manufactured, and notwithstanding repeated continued and long use for clamping apparel of widely varying thicknesses does not lose its clamping effectiveness for any and all such uses, which hanger is easy to manipulate without likelihood of jamming and can be incorporated in combination with a coat hanger.

Other objects and advantages of this invention will be apparent from the following detailed description thereof.

According to the invention, a pair of clamp bars are connected by parallel motion linkage to remain in strict parallelism at their clamping faces, regardless of the thickness of apparel to be clamped therebetween. For locking the clamp bars in clamping engagement with apparel of any of a wide range of thicknesses, the clamp bars are equipped with relatively movable lock members, which preferably include a cam pivotally mounted on one of the clamp bars for coaction with a lock stud fixed on the other clamp bar. The cam surface is concave and draws the stud-carrying bar progressively closer to the cam-mounting bar as the lock is tightened, the angle of the cam with respect to the stud being no greater than the critical angle of friction, so that the locking is effective in all settings. The lock cam may be of two or more generally parallel segments in a common plane to afford a wider range of settings. A preferred embodiment of the cam lock structure is a length of spring metal wire, pivotally mounted at an eye at one end thereof and extending in one or more cam segment runs.

In the accompanying drawings in which are shown one or more of various possible embodiments of the several features of the invention,

Fig. 1 is a perspective view of a clothes hanger embodying the invention;

Fig. 2 is a fragmentary plan view on a larger scale looking down on the top of a hanger as indicated by the arrows 2—2 on Fig. 1, and showing the relation of the parts for clamping relatively thin apparel,

Fig. 3 is a vertical section on line 3—3 of Fig. 2,

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Fig. 4 is a vertical section on line 4—4 of Fig. 2,

Fig. 5 is a plan view showing the clamping or central portion of Fig. 2 but in locking position for clamping much thicker apparel than in the setting of Fig. 2,

Fig. 6 is a fragmentary plan view corresponding to Fig. 5, with the locking mechanism shown in position to permit free movement of the clamping members for insertion of apparel therebetween.

Fig. 7 is a perspective view of a modified form of the invention involving the combination of a coat hanger with a hanger of the type shown in Figs. 1 to 6, and

Fig. 8 is a perspective view of a modified form of the embodiment of Fig. 7.

Referring now to Figs. 1 to 6 of the drawings, a pair of generally oblong clamp bars desirably of wood, light weight metal, or plastic material are shown at 10 and 11. Each of these clamp bars desirably has flat top and bottom surfaces 12, 13, rounded ends 14, a flat back 18 and a clamping face 15. The middle of each clamping face is cut away as at 16 across its width to accommodate the seam of the apparel being held, such apparel being clamped at areas laterally of portion 16, said areas being preferably lined with felt 19 or the like to prevent injury to the clothes.

Clamp bars 10 and 11 are relatively movable by parallel motion connecting linkage to change the spacing therebetween for accommodating clothes of different thickness. The linkage preferably comprises a pair of parallel connecting links 20, 21, in the form of wire rods of circular cross section, each rod having depending end legs 23, 24 (Fig. 4) integral therewith, pivotally mounted in the respective clamp bars. To this end, leg 23 of link 20 extends with some clearance through a vertical bore 25 in clamp bar 11, for free pivotal movement thereof. Similarly the leg 24 at the opposite end of link 20 passes through vertical bore 27 in clamp bar 10 for pivotal mount therein. The free or lower extremities of legs 23 and 24 are upset, respectively at 26 and 28, to assemble the connecting link 20 respectively to clamp bars 11 and 10 to extend across the gap between the upper edges of said bars.

Bore 27 is near one end of clamp bar 11 and bore 25 is much nearer the middle of clamp bar 10, the intervening length of link 20 bridging obliquely between the bars, as best shown in Fig. 2. The bars 10 and 11 are identical, for economy of manufacture, with bore 27 near one end and bore 25 more distant from the opposite end.

Thus two such bars mounted in relatively reversed relation as shown, will have bores **25**, **27**, **25'**, **27'** at the vertices of a parallelogram. The link **20** will thus be parallel in all settings to its identical companion link **21**. There is a free and unobstructed gap between links **20** and **21** for ready insertion of the clothes to be hung, in the space between the clamp bars.

Thus the clamp bars **10** and **11** remain parallel, not only lengthwise, but also across their widths for uniform effectiveness of engagement against apparel clamped therebetween, regardless of the thickness of such apparel.

Each link **20—21** is of length much greater, in fact, of length several times the distance between the planes longitudinally of the closed bars in which the opposite ends of the link are pivoted. Therefore, the links permit wide separation of the clamp bars for insertion of thick fabric therebetween.

A wire hook **29** has a stem **30** passing vertically through a bore in the clamp bar **11** and is affixed by upsetting its end as at **31** (Fig. 3). This hook stem **30** is bent towards the clamp bar **10** so that the hanger is balanced when suspended from the hook.

Means is provided, releasably to lock the clamp bars in clamping position, regardless of the thickness of apparel therebetween. Generally, such means comprises coacting relatively moving locking members on the respective clamp bars, said locking members having a cam coaction for pressing the clamp bars together in tightening the lock. While either or both lock members may be movable by a sliding or by a pivoting action, it is preferred to pivot one of the lock members on one of the clamp bars in coaction with a coacting stud fixed on the other clamp bar.

In the embodiment shown, locking member **33** is pivotally mounted on a collar **30'** about the base of the hook stem **30**. This locking member is desirably a spring steel wire or bar, the pivot mount of which is an eye **32** integral with and at the pivot end of radius arm **34**, from which extends a concave cam length **35** to ride under head **42** of a coacting lock stud which comprises a pin **44** through a corresponding bore in clamp bar **10** and upset at its lower end at **43**. The concave cam **35** extends along an arc, the radii of which about pivot **30** progressively decrease in pivoting the same in clockwise direction in Fig. 2. The relation between the cam and the stud **42** is such that the critical angle of friction therebetween is not exceeded, so that an efficient non-slipping lock is effected in any position, defined by the thickness of apparel or fabric clamped between the clamp bars. The resiliency of the wire cam contributes to the security of lock. For greater range of thickness of apparel to be clamped, the concave cam may have in addition to segment **35** a larger cam segment **39**. The cam segments **35** and **39** may be formed from one length of wire by a reversely bent return run **36** above and connected to segment **35** by hair pin turn **37**. The outer cam segment **39** is connected by hair pin turn **38** to the end of reverse turn **36**. Hair pin turn **37** being directed upwardly from cam **35**, and hair pin turn **38** downwardly from run **36**, cam segment **39** lies in substantially the same horizontal plane as cam segment **35**. The outer end of the pivoted cam, whether of one, two or more cam segments, desirably has an upstanding loop or eye **40** which serves as a handle for moving the locking member about its pivot to operate the same.

The cam segment **35** is so shaped as to cause the clamp bars **10** and **11** to exert sustained, constant clamping action for a given minimum range of thickness of clothing clamped therebetween; the cam segment **39** is shaped to cause these clamp bars to exert clamping action through a greater range of thickness of material, but, as shown, the maximum thickness clamped by segment **35** exceeds the minimum thickness clamped by segment **39**.

While in the drawings the locking member **33** is shown movable in a horizontal plane at right angles to the transverse median line of the clamping members, it will be understood the locking member could move in a plane which is tilted somewhat from the right angle position. The expression "substantially horizontal" used in the claims to define the plane of movement of the locking member is intended to include locking members movable in a horizontal plane at right angles to the transverse median of the clamping members as well as such members movable in planes which deviate somewhat from the right angle position.

A stop **45**, desirably a pin driven into the top of clamping bar **11** near and to the left (viewing Fig. 6) of the pivot **30** for the movable locking member **33**, limits the counterclockwise movement of the movable locking member and so guards against jamming the convex side of the segment against stud **42**.

In operation, with the parts in the position shown in Fig. 6, the clamp bars **10** and **11** can be moved apart any desired distance to accommodate any thickness of apparel within the range of the hanger. When the clothes, say the cuffs of a pair of trousers **46**, fragmentarily shown in Fig. 1, are placed between the clamp bars by insertion through the open space therebetween in the base portion thereof, the user grasps the handle **40** and swings it in a clockwise direction. If the cuffs of the trousers are relatively thin, the cam portion **35** will engage the clamp stud **42**, and when the movable locking member is drawn tight, will cause the clamp bars **10**, **11** securely to clamp the cuffs in place. As the radius of the cam about pivot **30** is progressively larger, any material within a predetermined range may be clamped, depending on the locking portion of the cam. If clothing of a greater thickness than the maximum for which cam segment **35** is desiged is hung, then when the movable locking member **33** is moved as hereinabove described, the outer cam segment **39** will automatically engage the clamp stud **42**, the space between the two cam segments being adequate to permit movement thereof past stud **42**. Due to the pivotal connection between the movable locking member and the top of clamp bar **11** and the position of the locking pin **42** directly across from the pivotal connection, a force at right angles to the face of the clamp bars is brought to bear, which force causes the faces of the clamping members to exert sustained constant clamping pressure on the clothes therebetween. Furthermore, due to the position of the stop member **45**, the movable locking member **33** must of necessity be moved in the proper direction, i. e., clockwise, to engage the fixed locking member.

In the modification of Fig. 7, a conventional coat hanger **48** with hook **49** has a cross member **52** extending between the sleeve engaging arms **50**, **51**. Cross member **52** corresponds to

clamp bar 11 hereinabove described, and has associated therewith clamp bar 10'. The felt lining on the clamping face of bar 52 is shown at 53. The linkage connection between the cross bar 52 and said clamp bar is identical with that of Figs. 1 to 6 and is identified by the same reference characters. The stem of hook 49 is desirably bent forward out of the plane of the sheet in the drawings to balance the weight of the apparel, which is clamped, as shown, forwardly of the center of gravity of the hanger.

The modification of Fig. 8 differs from that of Fig. 7, chiefly in that instead of having one of the clamp bars extending completely across and joined to the ends of the arms 50, 51 of the coat hanger, clamp bar 11 is suspended from the arms 50, 51 by pins 54, 55, desirably headed at their lower ends (not shown) and threaded into bores in the respective arms 50 and 51. The clamping structure is substantially the same as that of Figs. 1 to 6, inclusive, and like reference characters identify corresponding parts.

Since certain changes may be made in the above described garment hangers and different embodiments of the invention could be made without departing from the scope of the claims, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A garment hanger, comprising a pair of parallel clamp bars, a parallel motion connection therebetween to maintain their substantially parallel relationship regardless of their distance apart said connection comprising a pair of spaced parallel links extending across the gap between the upper edges of the bars and pivoted at their opposite ends to the respective bars, the length of each link being several times the distance between the planes longitudinally of the closed bars in which the opposite ends of the links are pivoted, and cooperating locking members on the respective clamp bars releasably to fix the clamp bars at required spacing for clamping the thickness of apparel therebetween.

2. A garment hanger, comprising a pair of parallel clamp bars, a parallel motion connection comprising a pair of parallel links bridging between and pivoted at their ends to the respective bars to maintain their substantially parallel relationship regardless of their distance apart, a lock stud fixed on one of said clamp bars, and a locking member pivotally carried solely by the other of said clamp bars, said locking member including a concave cam coacting with said fixed lock stud.

3. A garment hanger as claimed in claim 2, in which a stop on that clamp bar which mounts the pivoted lock member serves to limit the pivotal movement of the latter.

4. A garment hanger, comprising a pair of parallel clamp bars, a parallel motion connection comprising a pair of parallel links bridging between and pivoted at their ends to the respective bars to maintain their substantially parallel relationship regardless of their distance apart, a lock member fixed on one of said clamp bars, and a lock member pivotally supported on the other of said clamp bars, said last mentioned lock member including a concave cam having an uninterrupted curvature and adapted to ride along said fixed lock member and presenting an angle relative to said fixed locking member below the critical angle of friction.

5. A garment hanger comprising a pair of parallel clamp bars, a parallel motion connection comprising a pair of parallel links bridging between and pivoted at their ends to the respective bars to maintain their substantially parallel relationship regardless of their distance apart, a lock member fixed on one of said clamp bars, and a lock member pivotally supported on the other of said clamp bars, said last mentioned lock member including a length of spring wire having two or more generally parallel concave segments connected by an integral hair pin turn at their ends.

6. A garment hanger, comprising a pair of parallel clamp bars having clamping faces, parallel motion linkage comprising a pair of parallel links bridging between and pivoted at their ends to the respective bars, and a pair of coacting lock members carried by the respective bars one of said lock members being fixed on one of said bars and the other being movably mounted solely on the other bar and extending across the gap between said bars for locking engagement and serving releasably to clamp the bars against the thickness of apparel held therebetween.

7. The combination recited in claim 6, in which the two clamp bars are identical and the pivot mounts for the parallel motion links are disposed, one near one end and the other at a greater distance from the other end and in which the two associated clamp bars are disposed in reversed relation so that the links extend obliquely and in parallelism.

8. The combination recited in claim 6, in which each link has a pair of downturned legs extending through bores through the entire width of the respective clamp bars and upset at their free ends.

9. A garment hanger comprising two generally oblong clamp bars, a pair of parallel links bridging between and having their ends pivotally connected to said clamp bars, a hook rising from the middle of one of said clamp bars, a locking member pivoted on said hook for swinging movement in a horizontal plane, said member having a concave cam in a horizontal plane, and a locking stud on the other clamp bar over which said cam rides in releasably clamping apparel between said clamp bars.

10. The combination recited in claim 9, in which the pivoted lock member has two or more generally parallel cam segments connected in a unitary structure at their inner ends.

11. The combination recited in claim 9, in which the lock member comprises a continuous length of spring wire having an eye at one end pivoted on the hook, having a radius arm and a cam segment length, the outer end of said lock member having a handle piece constituting a unitary part of the wire length.

12. The combination recited in claim 9, in which the lock member comprises a unitary length of spring wire having a pivot eye at one end about the hook, having a radius arm, a cam segment extending outward from said radius arm, a return run unitary with said cam segment and extending thereabove, a downturned hair pin turn at the end of said return run, and a second cam segment substantially in the plane of said first segment and generally parallel thereto, said latter segment having a handle loop at the outer end thereof.

13. A combined coat and trouser hanger, the coat hanger having arms, the trouser hanger be-

ing of the construction defined in claim 1, and being mounted on the arms of the coat hanger.

14. A combined coat and trouser hanger, the coat hanger having arms, a cross-bar connecting said arms and having a clamping face, a coacting clamp bar of lesser length than said cross bar, parallel motion linkage connecting said clamp bar to said cross-bar, and extending across the gap between the upper edges of said bars and cam lock means having elements carried respectively solely by the cross-bar and the clamp bar.

15. A combined coat and trouser hanger, comprising a trouser hanger of the construction recited in claim 6, a coat hanger having arms and pins suspending the trouser hanger from the respective arms, said pins being affixed to one of the clamp bars of the trouser hanger.

16. A garment hanger comprising a pair of substantially identical coacting clamp bars, means determining the relative movement thereof toward and away from clamping position, a lock stud fixed on one of said clamp bars, a locking member movably carried solely by the other of said clamp bars, said locking member including a concave cam coacting with said fixed lock stud.

17. A garment hanger comprising a pair of substantially identical coacting clamp bars, means determining the relative movement thereof toward and away from clamping position, a lock member fixed on one of said clamp bars, a lock member pivotally carried by the other of said clamp bars, said last mentioned lock member including a concave cam having an uninterrupted curvature and adapted to ride along said fixed lock member and presenting an angle relative to said fixed lock member below the critical angle of friction.

18. The combination recited in claim 17 in which the fixed lock member is a stud on one of the clamp bars and the pivotally mounted lock member is a length of spring metal wire of the concave cam conformation carried solely on the other clamp bar.

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