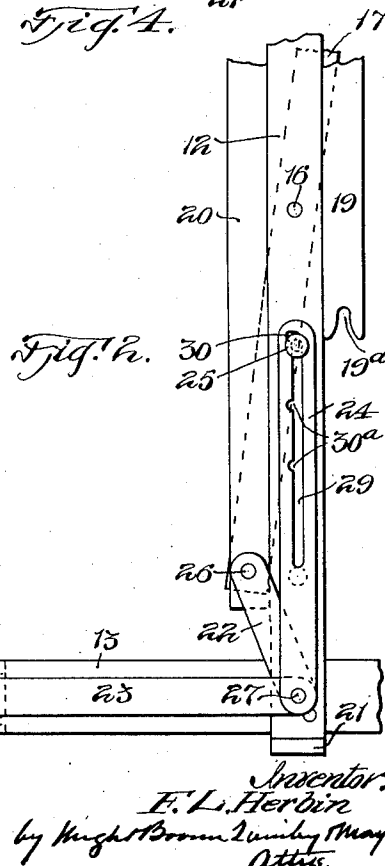
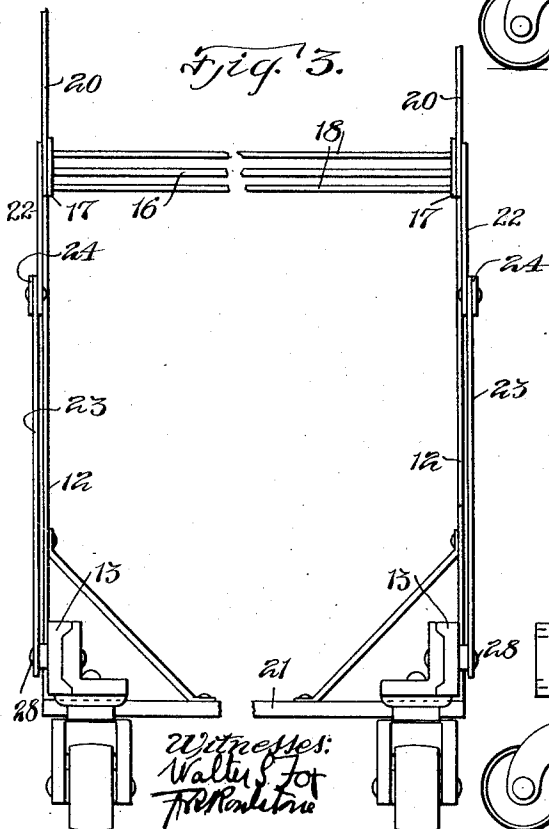
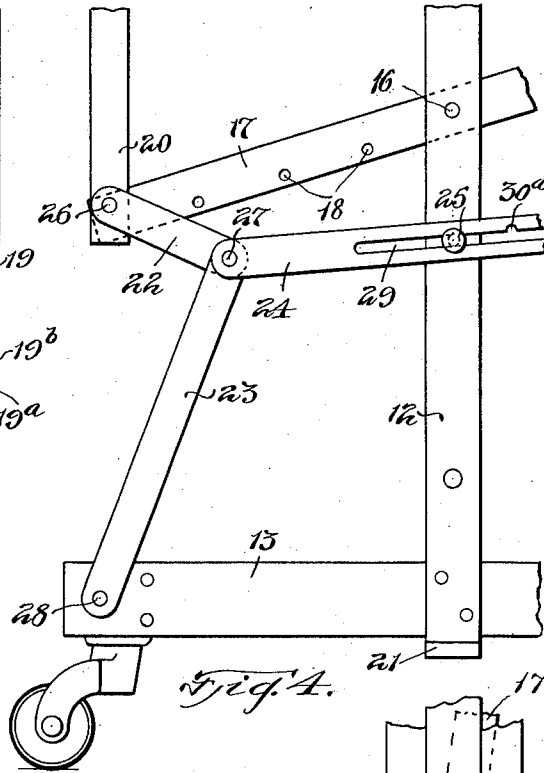
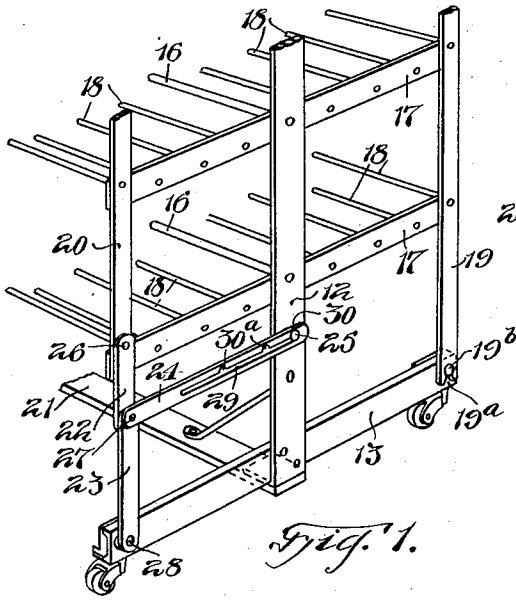


F. L. HERBIN.
FOLDING BACK.
APPLICATION FILED NOV. 23, 1911.

1,015,182.

Patented Jan. 16, 1912.



Witnesses:
Valley & Co.
for Patent

Inventor:
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UNITED STATES PATENT OFFICE.

FREDERIC LEON HERBIN, OF SWAMPSCOTT, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO THOMAS J. GALLIVAN, OF LYNN, MASSACHUSETTS.

FOLDING RACK.

1,015,182.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed November 23, 1911. Serial No. 662,007.

To all whom it may concern:

Be it known that I, FREDERIC LEON HERBIN, a citizen of the United States, and a resident of Swampscott, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Folding Racks, of which the following is a specification.

This invention relates to racks, such as are used for supporting boots and shoes in factories during different stages of the process of manufacture, and is an improvement on the rack described and claimed in Letters Patent of the United States, Number 908,000 dated December 29, 1908. The said rack has a plurality of shelves or rack members adapted to be folded into compact compass so that a number of racks may be stored in a relatively small space when not in use, and to be readily extended and the members thereof securely supported in their operative position.

The present invention has for its object to provide improved means for locking the shelves in their operative position.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification:—Figure 1 represents a perspective view of a part of a rack embodying my invention, the rack being shown in its operative position; Fig. 2 represents an end elevation of the same, the rack being folded; Fig. 3 represents a side elevation showing the entire base portion of the rack; Fig. 4 represents a partial end elevation showing the rack partly folded.

Similar reference characters indicate the same parts in all the figures.

In the drawings,—12, 12 represent a pair of vertical supporting standards which rise from supporting feet 13. 16, 16 represent a series of frame rods rigidly inserted at their ends in sockets formed for their reception in the standards 12, said rods extending across the space between the standards and rigidly connecting the latter, the standards, feet and frame rods constituting a rigid frame. The frame rods also serve as supports for the rack members hereinafter described, and as partitions between the supporting portions of the rack members. Each of the said rack members includes two end bars 17, 17 mounted to oscillate upon one of the frame rods 16,

and two series of rack rods 18 inserted at their ends in sockets formed for their reception in the end bars 17, one series being arranged at one side, and the other at the opposite side of the fixed frame rod 16.

19, 19 represent continuous legs which are jointed to the ends of the cross bars 17 at one side of the supporting standards, and are extended below the cross bars of the lower rack member far enough to bear upon the supporting feet 13 when the rack members are horizontally arranged in their operative position, as shown in Fig. 1.

20, 20 represent the upper members of sectional legs, said members being jointed to the ends of the cross bars 17 opposite the ends to which the legs 19 are jointed and being shorter than the legs 19.

The construction thus far described, is practically the same as that set forth in the above-mentioned patent, the standards 12 and feet 13 being, however, preferably composed of metal instead of wood, and the feet being preferably connected by a longitudinal metal bar 21, the ends of which are riveted to the central portions of the feet 13, and to inwardly bent ears on the lower ends of the standards 12.

In carrying out my invention, I substitute for the one-piece lower members of the sectional legs, shown by said patent, three-piece members each composed of links 22, 23, constituting a toggle joint, and a locking link 24 jointed to the meeting ends of said links and adapted to engage a stud 25 on the adjacent standard 12. The upper link 22 is pivoted at 26 to the upper member 20 and at 27 to the lower link 23 and the locking link 24. The lower link 23 is pivoted at 28 to the foot 13. The locking link 24 is provided with a longitudinal slot 29 having at one end a recess 30 adapted to engage the stud 25 when the rack is opened for use, the sides of said recess bearing against the stud 25 and preventing endwise movement of the link 24 in either direction, so that the links 22, 23 are locked in alinement with each other and constitute a rigid leg member, the lower end of which is permanently connected with the foot 13 instead of being separable therefrom as in the patented rack.

It will be seen that when the rack is adjusted in its operative position, shown in Fig. 1, the rack members are rigidly supported at both sides of the standards 12 by

the continuous legs 19, and the sectional legs composed of the members 20 and the links 22 and 23. When it is desired to fold the rack, as shown in Fig. 2, the inner ends of the locking links 24 are disengaged from the studs 25, the locking links and the links 22 and 23 being thus left free to be displaced in the directions required by the folding of the rack, the locking links being first moved inwardly, as shown by Fig. 4, until the rack is partly folded, and then downwardly, as shown by Fig. 2, until the folding is completed. During this operation, the leg members 20 are depressed and the legs 19 come to a bearing on one side of the standards 12, and the leg members 20 come to a bearing on the opposite side of said standards, the rack members being inclined and bearing against each other, so that they occupy a space of considerably less width than when they are horizontally arranged. When the rack is folded, the recesses 30 in the locking links may again engage the studs 25, so that the rack is locked in its folded adjustment.

The jointed leg member composed of the links 22 and 23 permanently connected at its lower end to the foot 13, is free from liability to be accidentally displaced from its operative position, and to be bent or broken, said jointed member having no free end detachably seated on the foot 13, as heretofore. When the rack is folded the links 22 and 23 and the locking link 24 are securely confined out of the way and free from liability to accidental displacement.

Owing to the fact that the links 22 and 23 are positively locked in alinement with each other against movement in either direction by the locking links 24, said links 22 and 23 may be relied upon to support the rack members in their operative position without the assistance of the lower ends of the legs 19 so that said lower ends or the portions of the leg 19 between the lower rack member and the feet 13 may be dispensed with or disregarded, the upper portions of said legs serving as connections between the rack members to cause the said members to swing in unison. In Fig. 1 I have shown the upper links 22 jointed directly to the lower end portions of the leg members 20, above the rack bars 17. In Figs. 2 and 4 the upper links are jointed both to the rack bars 17 and the leg members 20. The links 22 and 23 are in effect folding legs adapted, when the links are in alinement with each other, to support the rack members in their operative positions and to be folded with the rack. The lower ends of the legs 19 may be provided with notches 19^a adapted to receive fixed studs 19^b on the feet 13 when the rack is in use.

Each of the rack members above described

constitutes a pivoted shelf adapted to swing on a supporting frame. It is obvious that the construction of said shelf may be variously modified, and that the shelf may be adapted in any suitable way for supporting shoes and other articles and for other purposes.

The leg links 22 and 23 and the locking link 24 constitute a three-part support which is adapted to firmly sustain the shelf in a predetermined position and to be folded in compact form. The slot 29 in the locking link may be provided with additional recesses 30^a, either of which is adapted to engage the stud or locking member 25 on the supporting frame, provision being thus made for locking the shelf in an inclined position, as shown by Fig. 4.

I claim:—

1. A folding rack comprising a pair of vertical standards, supporting feet projecting from opposite sides of the standards, rack members pivoted to said standards, and adapted to swing thereon to open and fold the rack-connections between the rack members whereby they are caused to swing in unison, folding legs pivotally connected with the rack members and with the supporting feet at one side of the standards, and adapted to be alined to support the rack members and to be folded with the rack, and means for locking said legs in alinement with each other.

2. A folding rack comprising a pair of vertical standards, supporting feet projecting from opposite sides of the standards, rack members pivoted to said standards, and adapted to swing thereon to open and fold the rack-connections between the rack members whereby they are caused to swing in unison, folding legs pivotally connected with the rack members and with the supporting feet at one side of the standards, and adapted to be alined to support the rack members, and to be folded with the rack, and locking links pivoted to the joints of the folding legs, the said links and the supporting frame of the rack being provided with complementary means for locking the links against end-wise movement.

3. A folding rack comprising a pair of vertical standards provided with outwardly projecting studs at their lower portions, supporting feet projecting from opposite sides of the standards, rack members pivoted to said standards, and adapted to swing thereon, to open and fold the rack, connections between the rack members whereby they are caused to swing in unison, folding legs pivotally connected with the rack members and with the supporting feet at one side of the standards, and adapted to be alined to support the rack members, and to be folded with the rack, and locking links pivoted to the joints of the folding legs, the said links

being provided with longitudinal slots receiving said studs and having recesses adapted to engage the studs to lock the links against endwise movement.

5 4. A folding rack comprising a pair of vertical standards, supporting feet projecting from opposite sides of the standards, rack members pivoted to said standards, continuous legs jointed to the rack members at
10 one side of the standards and adapted to bear removably on the feet, sectional legs composed of elongated upper members jointed to the rack members at the opposite side of the standards and foldable lower
15 members connected with the upper members and composed of hinged links pivoted to the supporting feet, and locking links pivoted to the meeting ends of the said hinged links, said locking links and the standards having
20 complementary means for detachably locking the links to the standards.

5 5. A folding rack comprising a pair of vertical standards having outwardly projecting studs at their lower portions, supporting feet projecting from opposite sides
25 of the standards, rack members pivoted to said standards, continuous legs jointed to the rack members at one side of the standards and adapted to bear removably on the feet,
30 sectional legs composed of elongated upper

members jointed to the rack members at the opposite side of the standards and foldable lower members connected with the upper members and composed of hinged links pivoted to the supporting feet, and locking links
35 pivoted to the meeting ends of the said hinged links, said locking links having longitudinal slots which receive the studs on the standards and are provided with recesses adapted to engage said studs and prevent
40 endwise movement of the locking links.

6. In combination, a supporting frame, having a locking member, a shelf pivoted thereto, and a three-part support for said shelf composed of two links pivoted together
45 at their meeting ends, and constituting a folding leg, and a locking link pivoted to the said meeting ends, the outer ends of the leg links being pivoted respectively to the shelf and to the frame, and the locking link
50 being provided with means for detachably engaging said locking member to prevent endwise movement of the locking link, and a folding movement of said leg.

In testimony whereof I have affixed my
55 signature in presence of two witnesses.

FREDERIC LEON HERBIN.

Witnesses:

JOHN T. LONG,
NELLIE S. LONG.