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2,605,905

SHOE RACK

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3 Sheets-Sheet 1

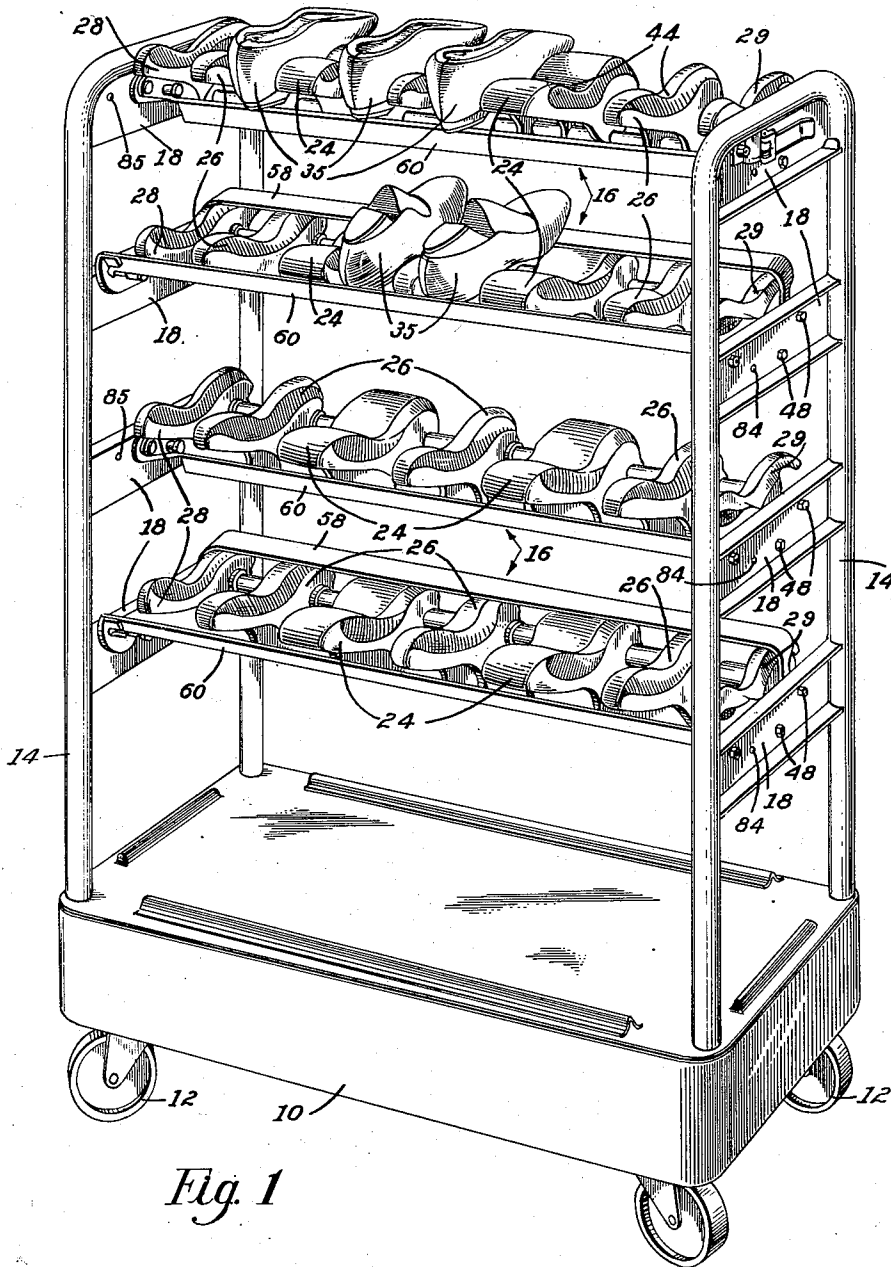


Fig. 1

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3 Sheets-Sheet 2

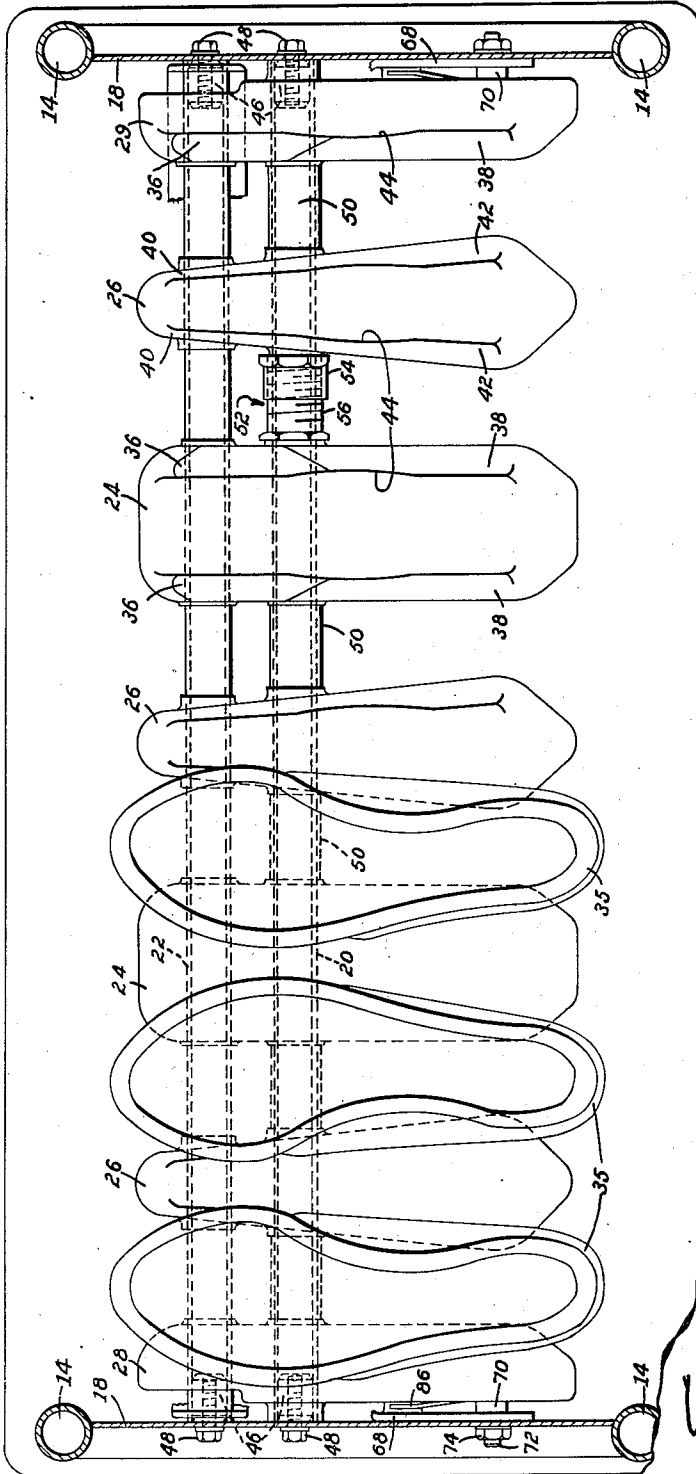


Fig. 2

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3 Sheets-Sheet 3

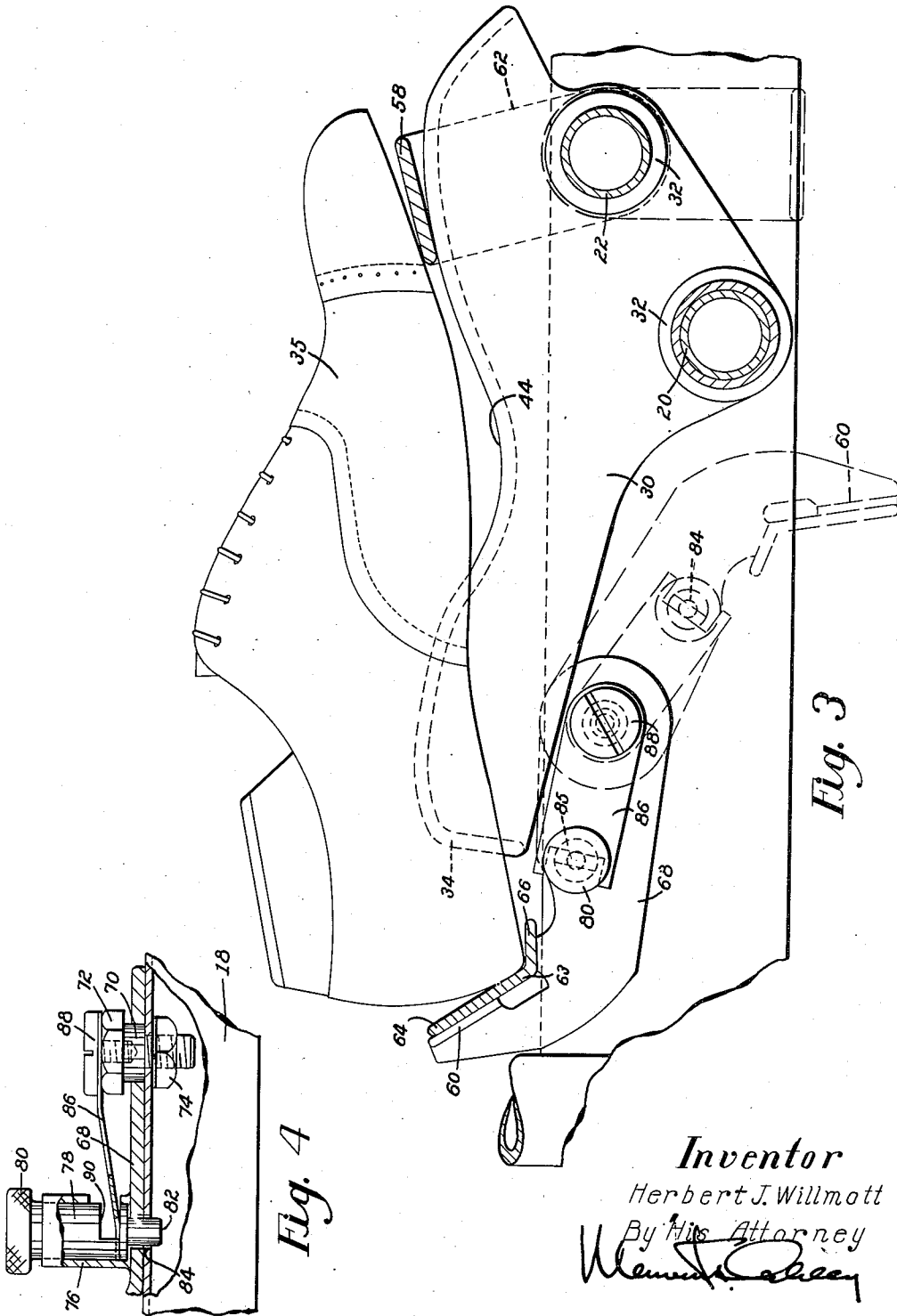


Fig. 4

Fig. 3

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UNITED STATES PATENT OFFICE

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SHOE RACK

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2 Claims. (Cl. 211-34)

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This invention relates to shoe racks and is herein illustrated as embodied in a shoe rack of the pin type such as is illustrated in United States Letters Patent No. 1,556,425, granted October 6, 1925 upon an application filed in the names of Warren E. Coombes and Chester D. Turner.

In the manufacture of shoes, racks of the type referred to are commonly used temporarily to store partially finished shoes between operations performed upon the shoes and for transporting the shoes from one operating station to another.

It is desirable that shoe racks be so constructed that shoes can be supported in the racks without likelihood of damage by reason of contact with the shoe-supporting members of the racks or with each other, particularly when the racks are shifted from one operating station to another. It is further desirable that the racks be constructed in such manner that they are economical of the space required for storing and transporting the shoes and at the same time readily permit the shoes to be placed upon or removed from the racks at the various operating stations.

In view of the foregoing, it is an object of the present invention to provide an improved rack of the type referred to especially adapted securely to support shoes carried in the rack in readily accessible positions for removal at various operating stations.

To this end, and, as illustrated, the invention provides a shoe rack having shoe-supporting members in the form of pins each of which has surfaces for engaging the forepart portions of shoes of a pair of shoes to be supported in the rack bottoms up and has spaced therefrom surfaces for engaging heel part portions of the shoes. Preferably the pins are mounted in such manner that the shoe-engaging surfaces extend above and laterally of members for supporting the pins with the result that the shoes carried in the rack can readily be removed from either side of the rack. Preferably too, each of the pins is provided with a recessed portion between the forepart and heel part shoe-engaging surfaces of the pin with the result that access to the instep portion of each shoe carried in the rack is unobstructed, so that the operator can readily grasp such instep portion when removing a shoe from the pins.

Another feature of the invention consists in the provision of an auxiliary shelf cooperable with the pins for supporting shoes in the rack with their bottoms down. Preferably, as shown, the auxiliary shelf comprises two bars normally positioned below the pins at opposite sides of the

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rack, and so mounted that they can be swung upwardly into positions adjacent to the forepart and heel part shoe-engaging surfaces of the pins to support the shoes, bottoms down, when that is desired.

These and other features of the invention are disclosed in the following specification and accompanying drawings and are pointed out in the claims.

In the drawings,

Fig. 1 is a perspective view of a shoe rack constructed in accordance with one embodiment of my invention;

Fig. 2 is a view, partly in section, showing the second shelf of the rack in plan;

Fig. 3 is a view in side elevation, partly in section, of the upper portion of the rack showing a shoe positioned therein bottom down, and

Fig. 4 is a plan view, partly in cross section, of the auxiliary shelf-locking device.

As shown in Fig. 1, the rack comprises a rectangular base 10 supported on casters 12 and having upwardly extending inverted U-shaped tubular end frames 14 supporting between them a plurality of shelves 16. Each of the shelves comprises two channel members 18 preferably welded to the end frames 14 at equal distances heightwise of the rack, and a plurality of pin-supporting members in the form of tubular rods 20 and 22, see Figs. 2 and 3, upon which are carried shoe-supporting pins 24, 26, 28 and 29.

Each of the pins is preferably molded or cast from suitable material such as aluminum although if desired they can be formed of plastic, wood or other materials. The pins 24 and 26 are hollow and have oppositely disposed side portions 30 connected by two bosses 32 which are bored to enable the pins to be placed over the pin-supporting members or rods 20 and 22. The side portions 30 are also joined by laterally extending connecting portions 34 which form the upper and end surfaces of the pins.

Three types of pins are employed in the rack. The pins 24 are sufficiently wide that they can support adjacently the outside edge portions of the shoes of a pair of shoes positioned, bottoms up, with the side surfaces of the shoes held out of contact. The pins 26 are sufficiently wide that they can support adjacently the inside edge portions of the shoes of a pair of shoes positioned, bottoms up, with the side portions of the shoes held out of contact. The pins 28 and 29 which are located at opposite ends of the rack are similar in construction to the pins 24 except that each corresponds to only half of a pin, only one

shoe-supporting member being required at each end of the rack. As illustrated, the rack is designed to support twelve pairs of shoes such as lasted shoes 35, that is, three pairs of shoes are supported upon each shelf. Thus, as will be seen upon inspection of Figs. 1 and 2, each shelf has twelve shoe-supporting members, that is, six members for supporting the inside portions of shoes and six members for supporting the outside portions of the shoes. The most economical arrangement for this is to provide three narrow pins alternating with two wide pins and a half of a wide pin at each end of the rack, as shown.

To facilitate the supporting of shoes, bottoms up, in the rack so that they can be readily removed therefrom, each pin 24 has shoe forepart engaging surfaces 36, Fig. 2, and shoe heel part engaging surfaces 38, disposed at opposite ends of the pin and positioned above and extending laterally upon opposite sides of the supporting members 20 and 22. Similarly, each of the pins 26 has shoe forepart and heel part engaging surfaces 40 and 42, respectively. The pins 28 and 29 have each a single forepart and single heel part engaging surface similar to the surfaces 36 and 38 of the pins 24. The surfaces 36 are inclined to the horizontal at an angle of about 140°, surfaces 38 at about 120°, and surfaces 40 and 42 at about 115°. These angles were found to be about the average of the inclinations of planes tangent to the foreparts and heel parts of shoes of various ranges of sizes on the inside and outside portions thereof. The inclinations of the various shoe-engaging faces of the pins are such as to approximate the inclinations of the planes tangent to the side faces of the shoes which they are to support, with the result that shoes can be supported with little likelihood of injury due to the contact of projecting portions of the engaging surfaces. The shoe-engaging surfaces of the pins are positioned relatively to the pin-supporting members 20 and 22 so that the shoes will be carried in positions above the members with no obstruction to movement in lateral directions with the result that the shoes can readily be removed from either side of the rack. This facilitates the work of operations located upon opposite sides of the rack while performing two successive operations upon the shoes.

In order that shoes can be readily grasped by an operator, each of the pins is provided with a recess 44, Figs. 1 and 2, in the upper face thereof, and located between the forepart and heel part shoe-engaging portions 36 and 38, and 40 and 42 respectively. These recesses are so located with relation to the shoe-engaging surfaces that the instep portions of shoes supported bottoms up between adjacent pins are exposed with the result that the main body portions of the shoes are in position to be readily grasped manually.

Means are provided for spacing the pins longitudinally along the supporting members 20 and 22 so that the shoe-engaging surfaces of the pins will be properly positioned to support the shoes of a series of shoes of a particular range of sizes. Accordingly, the pin-supporting members 20 and 22 are provided with plugs 46, Fig. 2, secured in the ends of the members, the plugs, and, consequently, the members may be secured to the channels 18 by bolts 48 screwed into the plugs. The pins are spaced apart by collars 50 respectively positioned on the member 22 between each pair of adjacent pins, the whole assembly of collars and pins being secured against endwise movement by an expansion coupling 52 compris-

ing two nuts 54 and 56 threaded to each other and positioned between two of the pins with the outer ends of the coupling engaging the side surface of the pins. After the pins and collars 50, as well as the coupling, have been assembled on the members 20 and 22 and the screw bolts 48 have been tightened, the coupling is expanded until there is no play between the collars, pins and end frames. When it is desired to shift the rack to adapt it to carrying shoes of a range of sizes either smaller or larger the collars 50 are replaced by shorter or longer collars as the case may be and the coupling 52 is adjusted to secure the assembly in fixed position.

In order to carry shoes in the rack bottoms down as is sometimes desirable in certain shoe-making operations such as in the assembling or finishing operations or elsewhere, there is provided also an auxiliary shelf for each of the fixed shelves 16. Each auxiliary shelf comprises a forepart supporting member 58, Fig. 3, and a heel part supporting member 60 which are movable from inoperative positions below the pins to operative positions relatively to the pins. The supporting member 58 comprises a longitudinally extending flat bar having inwardly bent end portions 62 loosely pivoted on the pin-supporting member 22 near opposite channels 18. It is to be noted that the curvature of all the pins at the ends of their forepart supporting portions is such as to permit angular movement of the member 58 about its support toward and away from a position above the pins. In its inoperative position the member 58 hangs down below the pins out of the way.

The auxiliary shelf member 60 comprises a bar 63 having two inclined flanges 64 and 66 for engaging the back or the bottom of heel parts of shoes. The bar 63 is supported by two brackets 68, Figs. 2, 3 and 4, which are pivoted on collars 70 secured by bolts 72 and nuts 74 to oppositely disposed channels 18. In its inoperative position the member 60 hangs in the position shown in dash lines in Fig. 3. In its operative position the member 60 is at the same level as the heel part supporting portions of the pins and is held in this position by a latch device. To this end the member 60 has an inwardly extending hollow boss 76, Fig. 4, enclosing a stud 78 which has at one end a knurled knob 80 and at the other end a pin 82 adapted to enter holes 84 or 85 in the channel 18. The bolt 72 carries a leaf spring 86 held in position by a screw 88. The outer end of the spring enters a slot 90 in the pin 78 and tends normally to force the stud and its pin 82 toward the channel 18. This construction insures that the member 60 is held in fixed position either in inoperative position below the pin shelf, as shown in dash lines in Fig. 3, with the pins 78 in holes 84, or fixed in operative relation to the pins as shown in full lines in Fig. 3, with the pins 78 in the holes 85. When the members 58 and 60 are located in operative positions, as shown in Fig. 3, shoes can be supported in the rack, bottoms down, by placing them upon the members 58 and 60 with the foreparts of the shoes resting upon the upper portions of the member 58, and the heel parts resting either upon the flange 64 or upon the flange 66, the shoes being held against substantial side-wise movement by engagement with the heel part supporting portions of the pins on each side of the shoe.

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

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1. A shoe rack comprising a frame, a pin-supporting member extending longitudinally of the frame, a plurality of pins upon the pin-supporting member, each of the pins having spaced shoe forepart and heel part engaging surfaces for supporting shoes carried in a rack bottoms up, and a plurality of bars mounted for movement from inoperative positions beneath the engaging surfaces into positions above the forepart engaging surfaces and adjacent to the heel part engaging surfaces respectively for supporting shoes carried in the rack bottoms down.

2. A shoe rack comprising a frame, a pin-supporting member extending longitudinally of the frame, a plurality of pins upon the pin-supporting member, each of the pins having spaced shoe forepart and heel part engaging surfaces for supporting shoes carried in a rack bottoms up, a plurality of bars mounted for movement from inoperative positions beneath the engaging surfaces into positions above the forepart engaging surfaces and adjacent to the heel part engaging surfaces respectively for supporting shoes carried in the rack bottoms down, and a latch carried by one of the bars and cooperable with the frame to secure the bar either

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in inoperative position beneath the pins or in its operative position relatively to the pins.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,006,127	Prime	Oct. 17, 1911
1,058,195	Perkins	Apr. 8, 1913
1,137,389	Evans	Apr. 27, 1915
1,169,202	Smith	Jan. 25, 1916
1,404,270	Carr	Jan. 24, 1922
1,556,425	Coombes et al.	Oct. 6, 1926
1,646,137	Campbell	Oct. 18, 1927
1,687,397	Shively	Oct. 9, 1928
1,924,158	Jones	Aug. 29, 1933
2,221,298	Di Domenico	Nov. 12, 1940
2,228,453	Glidden	Jan. 14, 1941

FOREIGN PATENTS

Number	Country	Date
605,290	Great Britain	July 20, 1948