My invention relates to conveyors for baking ovens and particularly to that class of conveyors comprising two endless chains mounted at opposite sides of a baking chamber with hangers located between the chains and pivotally connected on horizontal axes between the chains so as to be carried evenly and smoothly about the loop of the chains without being moved out of their normal balanced hanging position, and it is the object of my invention to provide a new and improved form and arrangement of parts by which improved results may be attained as compared with prior constructions. In conveyers of this type, it has been customary heretofore to mount the hangers swingingly in position between the oppositely disposed chains by pivotally mounting the arms of the hangers on the axes upon which the successive links of the chain are connected together. In such an arrangement, in order to provide the necessary clearance between the hangers at the points where they are moving from one level to another, it has been necessary to make such clearance much greater than is required at the horizontal movement portions of the loop.

It is one of the objects of my invention to provide an improved arrangement by virtue of which the clearance between successive hangers may be cut down considerably by an increase in the width of the hangers beyond which is permissible in the prior constructions whereby the carrying capacity of the conveyor is increased substantially but without any danger that the hangers will crash into each other because of such reduced clearance between them. For accomplishing this purpose, it has been one of the objects of my invention to provide an improved arrangement by which the speed of movement of the hangers at the points where they are moving from one level to another shall be very considerably increased over the speed at which the hangers move along the level stretches of the closed loop whereby each hanger in turn so speeded up shall clearly effectively the path for the next succeeding hanger. To this end, it is one of the objects of my invention to provide an improved arrangement in which the hangers are pivotally connected with the chains by means of lugs or arms which at the points where they are passing around the sprocket wheels extend outwardly beyond the pitch-lines of said sprocket wheels. It is another object of my invention to provide an improved arrangement of such outwardly extending arms with respect to the successive links of the endless chains.

It is another object of my invention to improve devices of this type in sundry details hereinafter pointed out. The preferred means by which I have accomplished my several objects are illustrated in the drawing and are hereinafter specifically described. That which I believe to be new and desirable to cover by Letters Patent is set forth in the claims.

In the drawing:

Fig. 1 is a vertical cross sectional view through a baking oven longitudinally thereof showing diagrammatically the general arrangement of the parts;

Fig. 2 is a top plan view of one of the chains embodying my improved construction;

Fig. 3 is a side face view of the chain as shown in Fig. 2;

Fig. 4 is a diagrammatic view partly in section at the line 4—4 of Fig. 3 showing my improved chains at opposite sides of the baking chamber of an oven with a hanger pivotally mounted therebetween;

Fig. 5 is a vertical sectional view taken at line 5—5 of Fig. 3; and

Fig. 6 is a view similar to Fig. 5 but showing the changed position of the parts in connection with the lower ply of the endless chain.

Referring now to the several figures of the drawing in which corresponding parts are indicated by the same reference characters, 10 indicates a baking oven of any approved type having a door 14 movable edgewise upwardly for opening a doorway across the baking chamber in position for a convenient loading operation with respect to the conveyor. Inasmuch as the oven in and of itself forms no part of my present invention, it is believed to be unnecessary to show the arrangement or to describe the construction in detail.

My improved conveyor as shown diagrammatically in Fig. 1 comprises two endless chains 12 and 13 as shown in Fig. 4 each of said chains being provided with a series of rollers 14 therealong adapted to have rolling engagement with angle bars 15 secured on the side wall portions 16 and 17 of the oven. As is best shown in Fig. 2, each of the chains comprises a series of inside links 18 and alternately arranged outside links 19 pivotally connected together by means of pivot pins 20, each of said pins 20 being provided with a supporting roller 16. As is indicated diagrammatically in Fig. 1, the chains 12 and 13 are mounted at their ends about sprocket wheels 21 and 22, two of such sprocket wheels being provided at each side of the baking cham-
 Said sprocket wheels 21 and 22 serve as the means for driving the chains by the application of power thereto at both sides of the baking chamber, the arrangement being such that the chains are driven in union.

The load carrying means of my improved conveyor comprises a plurality of hangers 23 which are pivotally mounted between the endless chains at opposite sides of the baking chamber, each of such hangers comprising arms 24 at opposite ends of body portions 25 of any approved form.

The means for mounting the hangers 23 between the chains 12 and 13 comprises a series of arms 26 mounted in crossed face to face relationship to the inside links 16 of the chain and arms 27 mounted upon the edge faces of the outside links 18, such arms 26 and 27 being arranged in edgewise alignment with respect to each other.

The arms 26 and 27 are positioned so as to extend outwardly from the outer faces of the chains 12 and 13 in equally spaced relation to each other along said arms, being connected with the arms 24 of the hangers by means of pins 28 carried by said arms 24 and journaled in sleeves 29 carried by said arms 26 and 27.

As is clearly shown in Fig. 1, the hangers 23 are arranged with only a small clearance between the arms of the sprocket wheels 21 and 22 so as to give the conveyor its maximum carrying capacity. By reason of the mounting of the carriers upon the chains by means of parts extending outwardly beyond the faces of the chains, the hangers are caused to move at a considerably greater speed at the points where they are changing level about the sprocket wheels 21 and 22 than at the points where the hangers are moving in horizontal planes. This differential speed of the movement of the carriers will be appreciated by reference to the fact that the carriers extend at the same speed as the chain at the points where the carriers are moving horizontally as contrasted with the considerably greater speed of the carriers at the ends of the chains where the radius of movement of the carriers is very considerably greater than the radius of the sprocket wheel.

By the use of my improved arrangement I am enabled to provide clearance for each carrier with respect to the adjacent carriers while at the same time making the carriers of maximum width so as to cut down the clearance between successive carriers. This is accomplished without the necessity for the provision of any increased size in the parts of the conveyor.

In the applicant's arrangement, the trays are closely spaced while moving in the horizontal paths from one end of the baking chamber to the other. Trays loaded with pans of products to be baked, for example bread, serve as baffles to control the circulation of heated air in the baking chamber. The heat in the space between the lower run of trays and the flues, therefore, may be quite high for thorough baking of the bottom portions of the loaves of bread or other products without scorching the top portions thereof.

While I prefer to employ the form and arrangement of parts as shown in my drawing and as above described, it is to be understood that my invention is not limited to the arrangement shown as the claims may be so clutched, it being understood that changes might well be made in the form and arrangement without departing from my invention.

I claim:
1. In a conveyor for baking ovens, the combination of two sprocket wheels at each side of a baking chamber, an endless chain of pivotally connected links at each side of the baking chamber mounted on the sprocket wheels at that side, means for driving said endless chains, arms extending outwardly from the chains, and hangers for trays mounted between the chains pivotally connected with said arms at their outer ends, the sprocket wheels at each side being spaced to provide for a plurality of trays in a horizontal plane on the stretches of chain theretwixt, the distance between the hangers being but slightly more than the width of the trays carried thereby, and the vertical distance from the axes of the pivot pins of the chain to the axes of the pivotal connections of the tray hangers and said arms being at least as great as the width of the spaces between the vertical edges of adjacent trays whereby the trays are closely spaced when moving in a horizontal plane but move from one level to another without interfering with each other.
2. In a conveyor for baking ovens, the combination of two sprocket wheels at each side of a baking chamber all of substantially the same diameter and mounted at substantially the same level, an endless chain of pivotally connected links at each side of the baking chamber mounted on the sprocket wheels at that side, means for driving said endless chains, auxiliary supporting means for the horizontal stretches of said chains for keeping them substantially level, arms extending outwardly from the chains, and hangers for trays mounted between the chains by pivotal connections with said arms at their outer ends, the sprocket wheels at each side being spaced to provide for a plurality of trays in a horizontal plane on the stretches of chain theretwixt, the distance between the pivots of adjacent hangers being but slightly more than the width of the trays carried thereby, and the vertical distance from the axes of the pivot pins of the chain to the axes of the pivotal connections of the tray hangers and said arms being at least as great as the width of the spaces between the vertical edges of adjacent trays whereby the trays are closely spaced when moving in a horizontal plane but move from one level to another without interfering with each other.
3. In a conveyor for baking ovens, the combination of two sprocket wheels at each side of a baking chamber, an endless chain of pivotally connected links and rollers at each side of the baking chamber mounted on the sprocket wheels at that side, means for driving said endless chains, a substantially level track for the rollers of the horizontal stretches of said chains, arms extending outwardly from the chains, and hangers for trays mounted between the chains by pivotal connections with said arms at their outer ends, the sprocket wheels at each side being spaced to provide for a plurality of trays in a horizontal plane on the stretches of chain theretwixt, the distance between the pivots of adjacent hangers being but slightly more than the width of the trays carried thereby, and the vertical distance from the axes of the pivot pins of the chain to the axes of the pivotal connections of the tray hangers and said arms being at least as great as the width of the spaces between the vertical edges of adjacent trays whereby the trays are closely spaced when moving in a horizontal plane but move from one level to another without interfering with each other.
4. In a conveyor for baking ovens, the combi-
nation of two sprocket wheels at each side of a baking chamber all of substantially the same diameter and mounted at substantially the same level, an endless chain at each side of the baking chamber mounted on the sprocket wheels at that side and comprising alternately arranged inside links and outside links pivotally connected with rollers therebetween, means for driving said endless chains, a substantially level track for the rollers of the horizontal stretches of said chains, arms connected with the edge portions of certain of said outside links in alignment with the links, other arms connected with certain of said inside links in face relationship therewith so as to be in alignment edgewise with said first named arms, said arms extending outwardly from the chains, and hangers for trays mounted between the chains by pivotal connections with said arms at their outer ends, the sprocket wheels at each side being spaced to provide for a plurality of trays in a horizontal plane on the stretches of chain therebetween, the distance between the pivots of adjacent hangers being but slightly more than the width of the trays carried thereby, and the vertical distance from the axes of the pivot pins of the chain to the axes of the pivotal connections of the tray hangers and said arms being at least as great as the width of the spaces between the vertical edges of adjacent trays whereby the trays are closely spaced when moving in a horizontal plane but move from one level to another without interfering with each other.

JOHN V. COOK.