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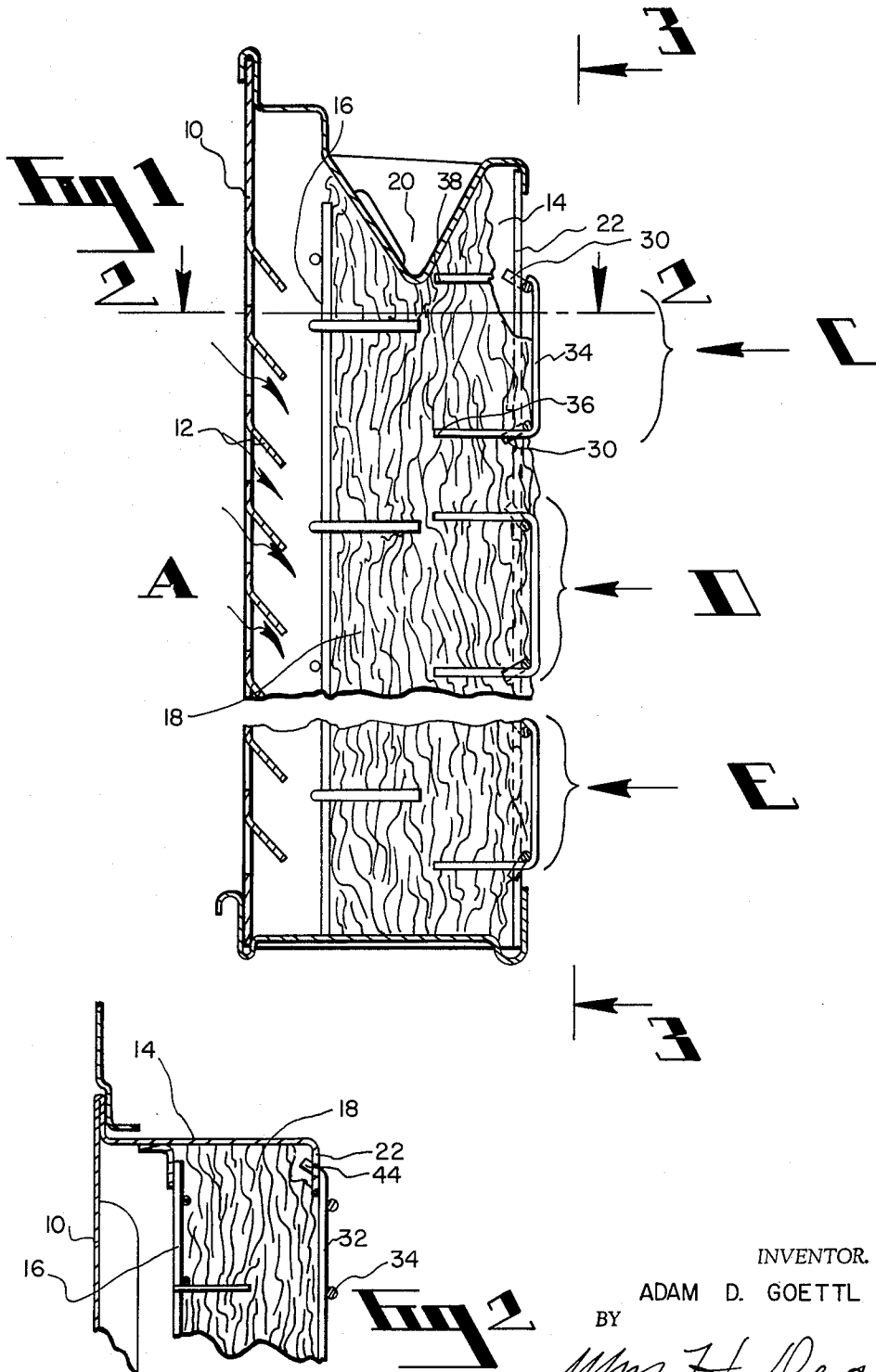
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EVAPORATIVE COOLER PAD FRAME AND RACK CONSTRUCTION

Filed Jan. 14, 1963

2 Sheets-Sheet 1



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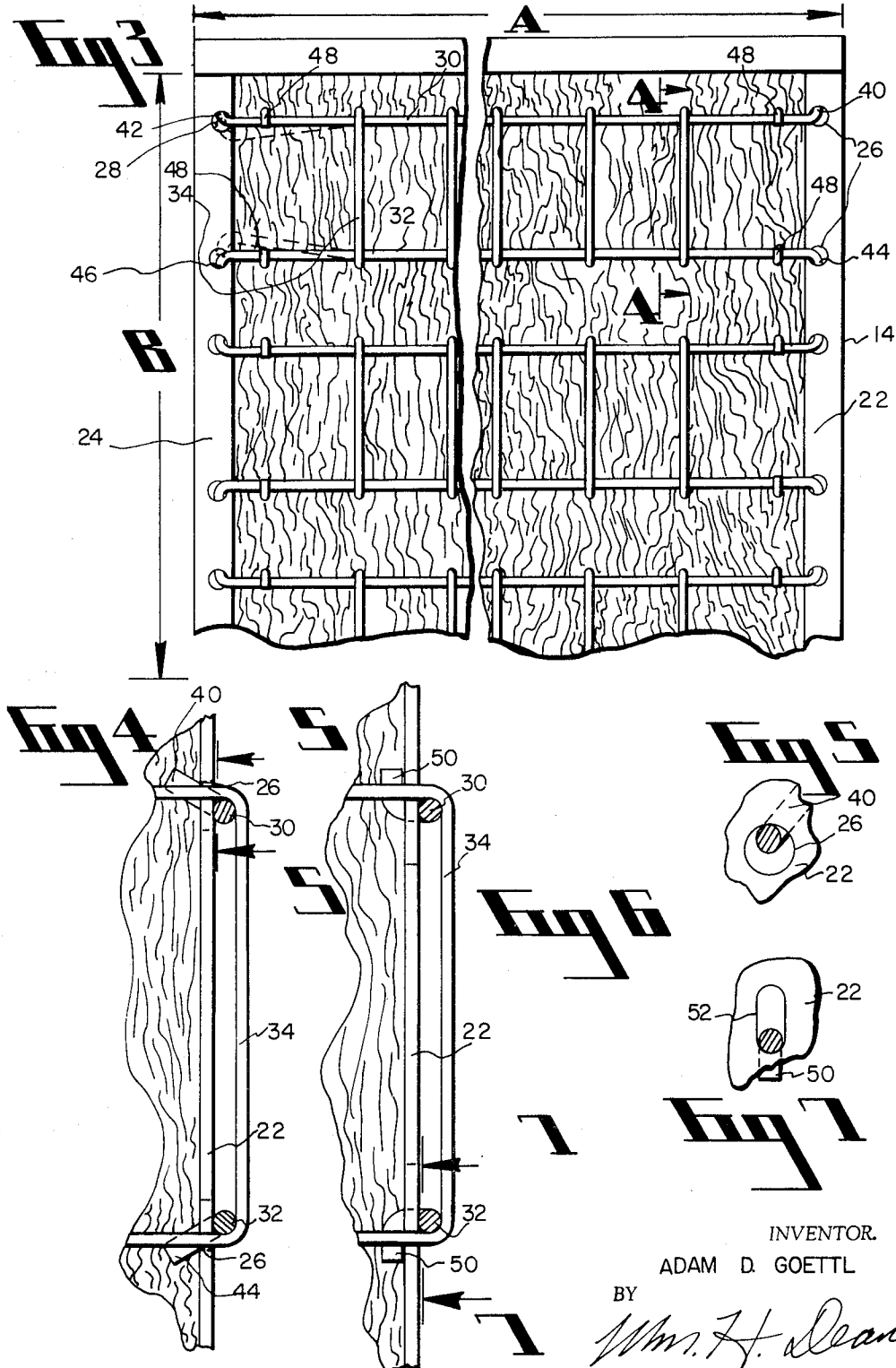
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## 3,245,668 EVAPORATIVE COOLER PAD FRAME AND RACK CONSTRUCTION

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This invention relates to a pad frame and rack construction for evaporative coolers and more particularly to a pad frame and rack construction for removably retaining evaporative cooler pads in juxtaposition in evaporative coolers.

In accordance with the prior art, various racks have been used to hold evaporative cooler pads in juxtaposition in evaporative coolers with relation to air inlet louvers and blowers internally of such coolers. Many of the structures of the prior art comprise pad frames having pad racks which are removably connected to the frame so that the evaporative cooler pads may readily be replaced from time to time.

In the manufacture of a great variety of evaporative coolers having various uses and capacities, it has heretofore been necessary to produce pad racks which fit a great variety of evaporative cooler pad frames. Prior art pad racks have usually been made to correspond with the rectangular dimensions of an evaporative cooler pad frame and in the manufacture of evaporative cooler pad frames of various vertical dimensions and horizontal dimensions, it has been necessary to produce and inventory a great variety of pad racks having a great variety of dimensions, vertically and horizontally. Many evaporative cooler manufacturers have the problem of producing several different models of coolers and as many different models of evaporative cooler pad racks to fit the various sized pad frames.

Accordingly, it is an object of the present invention to provide a pad frame and rack construction which may be used to provide pad racks for a variety of evaporative cooler models having various sized pad frames while employing the same basic tooling and minor differences in dimensions of the pad rack structures.

Another object of the invention is to provide a novel evaporative cooler pad frame and rack construction in which a plurality of individual vertically superimposed pad racks are removably secured to evaporative cooler pad frames so that various multiples of the pad racks on frames of different vertical dimensions may be used to accommodate evaporative coolers which are larger or smaller in the vertical dimension whereby a multiple of identical pad rack structures provides for great simplification in the standardization and manufacture of parts for a great variety of evaporative cooler models.

Another object of the invention is to provide an evaporative cooler pad frame and rack construction wherein a pair of horizontal bars are interconnected by U-shaped wire clips, the opposite ends of which project into evaporative cooler pads; the opposite ends of the bars having deflectable prongs projectable through openings in flanges of evaporative cooler pad frames whereby resilient action of the bars holds the pad rack structure in connection with the frames so that a plurality of such pad rack structures, vertically spaced from each other and connected to the flanges of a pad frame may provide pad rack structure for evaporative coolers having different vertical dimensions in the pad frame thereof.

Another object of the invention is to provide an evaporative cooler pad rack structure which may be manufactured entirely by automatic machinery and which may readily be assembled manually with an evaporative cooler pad frame.

Another object of the invention is to provide an evap-

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orative cooler pad frame and rack construction wherein a plurality of horizontally disposed pad rack structures are removably connected to flanges of a pad frame whereby very rigid support of the pad rack structure relative to the frame is accomplished.

Another object of the invention is to provide an evaporative cooler pad frame and rack construction wherein resilient portions of a pair of parallel bars are deflectable through openings in flanges of an evaporative cooler pad frame structure thereby providing resilient and efficient holding of the rack structures relative to the frame and also providing facility in the removal of the rack structure from the frame simply by deflecting the resilient structure of the rack to disengage the rack from the frame.

Further objects and advantages of the invention may be apparent from the following specification, appended claims, and accompanying drawings, in which:

FIG. 1 is a fragmentary vertical sectional view of an evaporative cooler pad frame and rack construction, in accordance with the present invention;

FIG. 2 is a fragmentary plan sectional view taken from the line 2-2 of FIG. 1;

FIG. 3 is a fragmentary rear or inside elevational view of an evaporative cooler pad frame and rack construction, in accordance with the invention;

FIG. 4 is an enlarged fragmentary sectional view taken from the line 4-4 of FIG. 3;

FIG. 5 is a fragmentary sectional view taken from the line 5-5 of FIG. 4;

FIG. 6 is a view similar to FIG. 4 but showing a modification of the invention; and

FIG. 7 is a fragmentary sectional view taken from the line 7-7 of FIG. 6.

As shown in FIG. 1 of the drawings, the evaporative cooler pad frame and rack construction of the present invention comprises a conventional air inlet louver plate 10 having punched out louvers 12 adapted to permit air to move through the plate in the direction of the arrows A, as shown in FIG. 1 of the drawings.

Coupled to the louver plate 10 is a substantially conventional pad frame 14 wherein a substantially conventional wire pad rack 16 holds an evaporative cooler pad 18 in spaced relation with the louvers 12. The pad 18 is a conventional aspen fiber pad or any other suitable pad and the rack 16 is substantially conventional. The frame 14 is provided with a trough 20 which emits water to drain downwardly through the pad 18.

At the rear or inner side of the frame 14 are substantially flat inwardly directed opposed flanges 22 and 24 which are provided with pairs of prong receiving openings 26 and 28, respectively.

These openings 26 and 28 in the flanges 22 and 24 are disposed to receive angularly disposed prong end portions of horizontal bar members of individual pad rack assemblies.

Each pad rack assembly, as shown in FIGS. 1, 2, and 3 of the drawings, comprises horizontal bars 30 and 32 which are held in spaced parallel juxtaposition with each other by U-shaped prong members 34 which are welded, or otherwise secured thereto. These U-shaped prong members are each provided with inwardly extending ends 36 and 38 which project into the evaporative cooler pad structure 18 and support the same in the frame 14.

Opposite ends of the bar 30 are provided with angularly disposed prongs 40 and 42 which project through respective openings 26 and 28 of the flanges 22 and 24. Likewise, angularly disposed prongs 44 and 46 on opposite ends of the bar 32 project through respective openings 26 and 28 of the flanges 22 and 24. It will be seen that the prongs 40 and 42 project in opposite directions from the respective prongs 44 and 46 in order to lock

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the bars 34 in the openings 26 and 28 of the flanges 22 and 24 and to hold the entire rack assembly in connection with said flanges of the pad frame.

Central portions of the U-shaped members 34 are cut away at 48 near the flanges 22 and 24, in order to permit the bars 30 and 32 to be resiliently deflected toward each other, as indicated by broken lines in FIG. 3 of the drawings, in order to relieve the angular prong portions 40 and 44 and 42 and 46 from the respective openings 26 and 28 in the flanges 22 and 24.

With reference to the disclosure of FIG. 4 of the drawings, it will be seen that the prong portions 40 and 44 project angularly away from each other in opposite directions to thereby firmly engage these prongs in the openings 26 in the flange 22. A similar condition exists with respect to the prongs 42 and 46 in the openings 28. Thus, the individual pad rack assembly, comprising the bars 30 and 32, and the U-shaped members 34, is held firmly in connection with the pad frame 14 and the flanges 22 and 24 thereof.

It will be understood by those skilled in the art that when an evaporative cooler pad frame 14 is varied for the purpose of increasing the capacity of an evaporative cooler, that it may be varied only in the vertical dimension B and under such conditions, a great variety of sizes and capacities of evaporative coolers may be made by increasing or decreasing the vertical dimension of the pad frame 14. Thus, a multiple of the pad rack assemblies, hereinbefore described, may be arranged in superimposed relationship with the flanges 22 and 24, as shown best in FIGS. 1 and 3 of the drawings. As shown in FIG. 1 of the drawings, a pad rack assembly, designated C, as hereinbefore described, is identical to another assembly, designated D, and still a further assembly, designated E. These assemblies are all identical and when the evaporative cooler pad frame 14 is made in various vertical dimensions, any multiple of these pad rack assemblies C, D, and E may be used to increase or decrease the capacity of the evaporative cooler pad area, as desired. Accordingly, a manufacturer, in order to produce a great variety of models of different capacities, may use the same identical pad rack assembly, as hereinbefore disclosed, and thus, the custom production of pad rack assemblies to fit varying rectangular dimensions of pad frames may be dispensed with. Thus, stock parts for the pad rack and pad frame assembly may be utilized in accordance with the present invention.

As shown in FIG. 3 of the drawings, it may be possible to vary the dimension A, that is the horizontal dimension, of the pad frame 14 and this will necessitate the making of the pad rack assemblies longer. However, a manufacturer may produce two or three different lengths of the pad rack assemblies and may use a multiple of such assemblies vertically in order to thereby facilitate the production of a very large number of evaporative cooler models having a great variety of sizes and capacities.

Inasmuch as the present pad rack assemblies are producible by automatic machinery, it will be obvious to those skilled in the art that a great saving may be made by a manufacturer who stocks common rack assemblies for the production of a great variety of evaporative cooler models.

In the modification, as shown in FIG. 6 of the drawings, opposite ends of the bars 30 and 32 are provided with prong end portions 50 which may be inserted through elongated openings 52 in the respective flanges 22 and 24 of the pad frame 14.

In the structure shown in FIG. 4 of the drawings, the prong ends 40 and 44 are angularly opposed and directed inwardly through the flange 22 in an inwardly diverging relationship while the prongs 50, as shown in the modification in FIG. 6, are disposed at right angles and locked into substantially parallel relation with the flanges 22 and 24 at the rear sides thereof,

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The adjacent ends of the bars 30 and 32, near the prongs which extend through the openings 26 and 28, are resiliently deflectable to relieve these prong ends from their respective openings in the flanges 22 and 24, as hereinbefore described.

It will be obvious to those skilled in the art that various modifications of the present invention may be resorted to in a manner limited only by a just interpretation of the following claims.

I claim:

1. In an evaporative cooler pad frame and rack construction, the combination of: an evaporative cooler frame having opposed inwardly directed sheet metal flanges provided with pairs of spaced openings therein; a pad rack assembly comprising a pair of parallel spaced bars; U-shaped members fixed thereto and holding said bars in spaced relation; opposite adjacent ends of said spaced parallel bars deflectable toward each other and of resilient material; opposite ends of said bars having hook-shaped portions projectable through said openings in said flanges, said hook-shaped portions being opposed to each other at adjacent ends and disposed resiliently to interlock at the inner sides of said flanges inwardly of said openings.

2. In an evaporative cooler pad frame and rack construction, the combination of: an evaporative cooler frame having opposed inwardly directed sheet metal flanges provided with pairs of spaced openings therein; a pad rack assembly comprising a pair of parallel spaced bars; U-shaped members fixed thereto and holding said bars in spaced relation; opposite adjacent ends of said spaced parallel bars deflectable toward each other and of resilient material; opposite ends of said bars having hook-shaped portions projectable through said openings in said flanges; said hook-shaped portions being opposed to each other at adjacent ends and disposed resiliently to interlock at the inner sides of said flanges inwardly of said openings; said U-shaped members having opposite prong ends projectable horizontally to support an evaporative cooler pad.

3. In an evaporative cooler pad frame and rack construction, the combination of: an evaporative cooler frame having opposed inwardly directed sheet metal flanges provided with pairs of spaced openings therein; a pad rack assembly comprising a pair of parallel spaced bars; U-shaped members fixed thereto and holding said bars in spaced relation; opposite adjacent ends of said spaced parallel bars deflectable toward each other and of resilient material; opposite ends of said bars having hook-shaped portions projectable through said openings in said flanges; said hook-shaped portions being opposed to each other at adjacent ends and disposed resiliently to interlock at the inner sides of said flanges inwardly of said openings; said U-shaped members having opposite prong ends projectable horizontally to support an evaporative cooler pad; a plurality of said pad rack assemblies in connection with said flanges of said pad frame, said pad rack assemblies disposed in superimposed spaced relationship with each other and being in multiples according to the vertical dimensions of said pad frame.

4. In an evaporative cooler pad frame and rack construction, the combination of: an evaporative cooler pad frame having an evaporative cooler pad therein; a plurality of pad rack assemblies disposed in connection with said pad frame in superimposed relationship with each other, said assemblies vertically spaced relative to each other; each of said assemblies having a pair of parallel bars; U-shaped pad supporting prong members connected to said bars and projecting into said pad; opposite ends of said bars having angularly disposed ends resiliently deflectable, said pad frame having spaced flanges adjacent opposite edges of said cooler pad, said flanges having openings therein in which said angularly disposed ends of said bars are retained.

5. In an evaporative cooler pad frame and rack con-

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struction, the combination of: an evaporative cooler pad frame having an evaporative cooler pad therein; a plurality of pad rack assemblies disposed in connection with said pad frame in superimposed relationship with each other, said assemblies vertically spaced relative to each other; each of said assemblies having a pair of parallel bars; U-shaped pad supporting prong members connected to said bars and projecting into said pad; angularly disposed portions at the ends of said bars resiliently deflectable in interlocking relationship with said pad frame; said pad frame having opposed flanges at the inner sides thereof, said flanges having openings therein in which opposite ends of said bars are retained.

6. In an evaporative cooler pad frame and rack construction, the combination of: an evaporative cooler pad frame having an evaporative cooler pad therein; a plurality of pad rack assemblies disposed in connection with said pad frame in superimposed relationship with each other, said assemblies vertically spaced relative to each other; each of said assemblies having a pair of parallel bars; U-shaped pad supporting prong members connected to said bars and projecting into said pad; opposite ends of said bars resiliently deflectable; means at the ends of said bars resiliently deflectable into interlocking relationship with said pad frame; said pad frame having opposed flanges at the inner sides thereof engaged by said opposite ends of said bars; said flanges having openings therein and said means at the ends of said bars comprising opposed prongs at adjacent ends projectable through said openings and interlocking with the inner sides of said flanges.

7. In an evaporative cooler pad frame and rack con-

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struction, the combination of: an evaporative cooler pad frame having an evaporative cooler pad therein; a plurality of pad rack assemblies disposed in connection with said pad frame in superimposed relationship with each other, said assemblies vertically spaced relative to each other; each of said assemblies having a pair of parallel bars; U-shaped pad supporting prong members connected to said bars and projecting into said pad; opposite ends of said bars resiliently deflectable; means at the ends of said bars resiliently deflectable into interlocking relationship with said pad frame; said pad frame having opposed flanges at the inner sides thereof engaged by said opposite ends of said bars; said flanges having openings therein and said means at the ends of said bars comprising opposed prongs at adjacent ends projectable through said openings and interlocking with the inner sides of said flanges; whereby resilient deflection of said bars toward each other relieves them from said openings and permits removal of each individual pad rack assembly.

#### References Cited by the Examiner

##### UNITED STATES PATENTS

|           |         |                   |          |
|-----------|---------|-------------------|----------|
| 2,182,501 | 12/1939 | Quave et al. .... | 55—233 X |
| 2,199,632 | 5/1940  | Keyes .....       | 55—233   |
| 2,450,191 | 9/1948  | Feinberg .....    | 55—233 X |
| 2,637,540 | 5/1953  | Rowe .....        | 55—233 X |
| 3,034,772 | 5/1962  | Schulz .....      | 261—94 X |

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