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SUPPORT STRUCTURE FOR CLEANING MACHINE SHELLS

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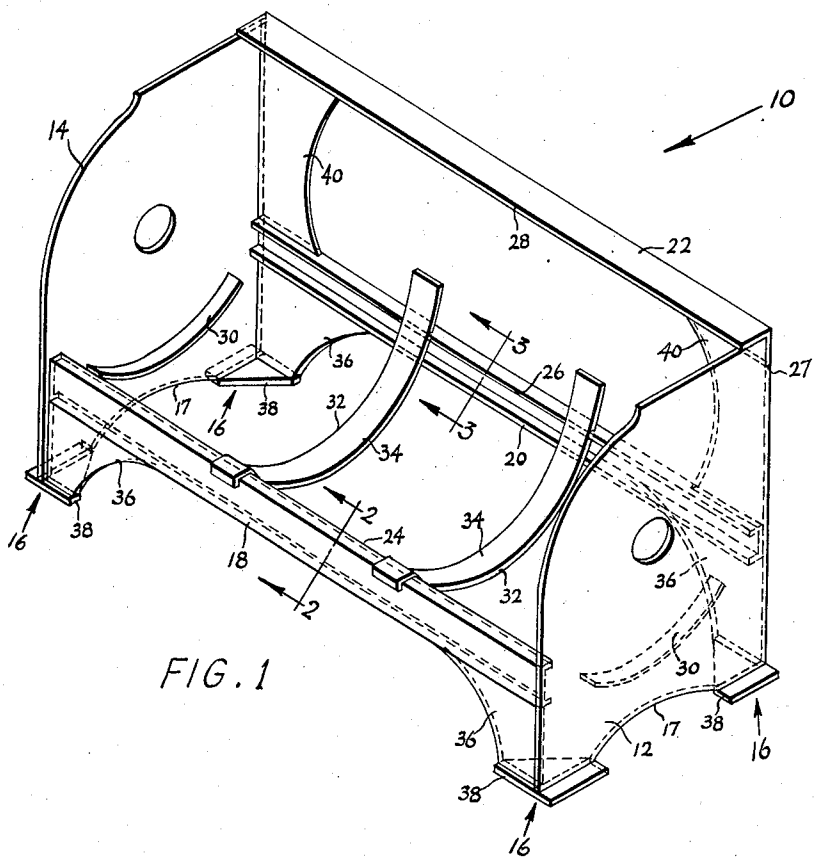

FIG. 1

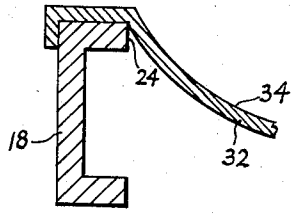

FIG. 2

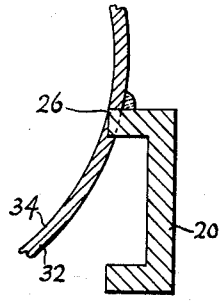

FIG. 3

INVENTOR.
MARTIN HUTTERER
BY
Jerome Bauer
ATTORNEY

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SUPPORT STRUCTURE FOR CLEANING MACHINE SHELLS

Martin Hutterer, Brooklyn, N.Y., assignor to Cummings-Landau Laundry Machinery Company, Inc., Brooklyn, N.Y., a corporation of New York

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This invention relates to cleaning machines and more particularly to improvements in the structure of the support for the shells of cleaning machines.

In cleaning machines it is desirable to provide a support structure for the shell thereof to support the same on the ground or floor or other platform. Inasmuch as the shell houses the rotating cleaning cylinder and the cleaning fluids it is desirable to support the same in a manner to reduce its vibrations as much as possible. Attempts have been made in an effort to solve the problem by providing the shell support structure with series of legs not only at the ends of the support structure, but also at spaced points intermediate the ends. However, instead of eliminating the problem the intermediate legs only seemed to magnify the vibrations. In fact, after prolonged periods of operation there have been instances in which the shell has been ruptured about the area wherein the intermediate legs support the same.

The instant invention proposes a shell supporting structure wherein the usual intermediate supporting legs are eliminated. However, the cleaning machine shell will continue to be securely supported on either the floor or the ground, or some other platform in a manner to reduce the vibrations thereof without any reduction in its support thereof.

Therefore, it is an object of the invention to provide a support structure for cleaning machine shells which will eliminate the need for intermediate leg supports Accordingly, a feature of the invention resides in the provision of a cleaning machine support structure in which the area under the shell and between the ends of its supports is free from and unencumbered by support structure, thereby providing a support having a large space siutable for storage, creating an attractive appearance.

Another object of the invention is to provide a cleaning machine shell support structure which will support the shell in a novel cradle-like manner intermediate the ends thereof.

A further object of the invention is the provision of support means adapted to support the shell intermediate its ends and intermediate the ends of the support whereby the vibrations of the shell will be absorbed by the support structure as a whole.

Still a further object is the provision of a support structure of sturdy all welded construction, easily fabricated and conspicuous by the absence of precision parts and features normally present in prior structures.

Other and further objects of my invention reside in the structures and arrangements hereinafter more fully described with reference to the accompanying drawings in which:

Fig. 1 is a front perspective view of the novel cleaning machine shell support structure constructed in accordance with the principles of the invention.

Fig. 2 is a sectional view of Fig. 1 taken along lines 2—2 thereof.

Fig. 3 is a sectional view of Fig. 1 taken along lines 3—3 thereof.

Referring now to the figures of the drawing, and more especially to Fig. 1 thereof, the support structure **10** adapted to cradle and support the cleaning machine shell (not shown), comprises a pair of spaced end support members **12** and **14**. Inasmuch as the cleaning machine shell which is to be supported in and secured to the support structure **10** does not form any part of the instant invention, the same has been omitted from the drawings.

The end support members **12** and **14** have lower portions thereof generally identified by the numerals **16** which may be said to define legs for the support structure **10**. As best seen in Fig. 1, the leg defining means **16** on the end members **12** and **14** respectively, are shown placed from each other by an arcuate cut away portion **17**. However, it will be understood that the leg defining means **16** on each of the end members **12** and **14** need not be divided or spaced to form a plurality of legs on each of the end members. The lower edges on each of the support members **12** and **14** may be formed without the cut away **17** to define continuous legs extending the width of each of the support members.

The support structure **10** being of a rugged, all welded construction, includes a cross member construction (not numbered) interconnecting the end support members **12** and **14**. The cross member construction comprises rail members **18**, **20** and **22** which are welded to the end members **12** and **14** to secure the same in their spaced relationshsip and to retain the same in their upright positions. The lower side rails **18** and **20** included in the cross member construction are substantially channel-shaped and have surfaces **24** and **26** each adapted to support and be secured with the cleaning machine shell throughout the length of the front and rear sides respectively thereof when the latter is placed in the structure **10**.

The top rail **22** included in the cross member construction, includes a surface **28** which is also adapted to support and be secured with the cleaning machine shell at the top portion thereof and throughout desired portions of its length. The top rail **22** may be set into notches **27** provided in the end support members **12** and **14** respectively, or it may merely be welded along the corner portion of each of the end members **12** and **14** to be secured to the same and to interconnect the same at the tops thereof in their spaced relationship.

Similarly, the front side rail **18** may be welded to the front portions of the end members **12** and **14** to interconnect the same along the front portions thereof while the rear side rail **20** may be welded at its ends to the members **12** and **14** respectively to interconnect the same along the rear lower portions thereof. It will be noted that the manner of interconnecting the end support members **12** and **14** by the cross member construction comprising the side rails **18** and **20**, and the top rail **22**, provides a sturdy unitary welded construction in which all of the above mentioned members are made integral.

In Fig. 1, it will be noted that the end members **12** and **14** each include a cradling shell support member **30**. The shell support members **30** may be mounted on their respective end members **12** and **14** as by welding, and are shaped to conform substantially with the shape of the underside end portions of the cleaning machine shell which is to be supported and secured with the support structure **10**. Thus, when the cleaning machine shell (not shown) is mounted in the support **10**, it will be cradled at the end portions thereof, in the cradle-like conforming shell supports **30**.

In order to properly eliminate the intermediate leg supports present in hitherto known support structures for cleaning machine shells, means have been provided to take the place of such intermediate legs. In the present

invention, bands 32 are provided intermediate the end supports 12 and 14 and are secured to and supported by the side rails 18 and 20 of the cross member construction. The bands 32 include surfaces 34 which have substantially the same configuration as the corresponding portion of the bottom of the cleaning machine shell which is to be supported in the structure 10. The conforming configuration of the bands 34 will provide a cradling means for supporting, in suspension, the intermediate portions of the shell. It will be noted that the intermediate support means 32 are suspended from the spaced front and rear side rails 18 and 20 so that when the cleaning machine shell is mounted in the support structure 10 and secured, as by welding, to the support means 32, all vibrations received by the intermediate support means 32 will be absorbed and transmitted to the side rails of the cross member construction and thence to the remaining support structure 10.

Although two intermediate support bands 32 are shown in Fig. 1, it will be obvious that the number of these bands may vary, depending upon the length of the cleaning machine shell to be supported in the structure 10.

A brace construction comprising lower braces 36, platforms 38 and upper braces 40 add to the attractive appearance of the support 10 and at the same time provide for greater rigidity of the cleaning machine shell support structure. The lower braces 36 are welded to the under sides of the side rails 18 and 20 to brace the same against the end support members 12 and 14 and to provide a larger supporting base for the structure 10. The larger supporting base is increased by the addition of the platforms 38 to the under side of the leg defining portions 16 of the end members 12 and 14 and to the under side of the lower members 36.

Understandably, the platforms 38 will provide a broader base for the leg defining portions of the end members 12 and 14 when the structure 10 is mounted on either the ground, the floor, or some other suitable platform. The upper braces 40 are positioned between and secured to the top rail 22, the rear side rail 20 and the end support members 12 and 14. The upper braces 40 are not only attractive in appearance and permit access to the back portion of the cleaning machine shell when the same is supported in the structure 10, but they also cooperate with the rear side rail 20 and the lower rear braces 36 to provide a straight line support from the top rail 22 to the platforms 38.

Referring now to Fig. 2 it will be noted that the intermediate supporting bands 32 are hooked at their forward ends over the top portion of the front rail 18 of the cross member construction. Although the welding is not shown in Fig. 2, it will be understood that in view of the fact that each of the parts of the support structure 10 is connected with the other by some suitable means, such for example, as welding, the hooked portion of the band 32 may be further secured to the front rail 18 by welding.

In Fig. 2 it will be seen that the band 32 extends over the reading support surface 24 of the rail 18, whereas, adverting to Fig. 3, it will be noted that the band 32 is set within a cutout portion (not numbered) provided in the shell supporting surface 26 of the rear rail 20. The construction shown in Figs. 2 and 3 may be varied. Thus, for example, the band 32 may be secured to either the front rail 18 or the rear rail 20 without providing cutouts to receive the band within the rails as shown in Fig. 3, or they may be secured to the rails 18 and 20 by being received in cutouts as shown in Fig. 3. The choice of either one of these constructions does not detract from the essence of the invention since, when the cleaning machine shell is cradled in and supported by the support structure 10, it may be welded along selected portions thereof which contact the surfaces 24, 26, 28, 30 and 34 to be integrally secured therewith and to be retained securely in the support structure 10. As a result of the shell being integrally secured with the support 10 along portions of contacting, supporting and cradling surfaces, its vibrations and motions will be absorbed at these various secured portions and transmitted to and to be absorbed by the support structure 10 as a whole.

An important feature of the invention resides in the fact that the support structure 10 need not be made with any great degree of precision, and in face, the benefit of the above disclosed construction accrues from the fact that the same may be constructed only to the approximate dimensions of the cleaning machine shell which is to be supported therein and secured thereto.

While there have been shown and described and pointed out the fundamental novel features of the invention as applied to a preferred embodiment thereof, it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art, without departing from the spirit of the invention. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.

What is claimed is:

1. A vibration dampening article suspension support structure comprising opposed longitudinally spaced end members, a cradle suspension having an article receiving opening defined therein and including a plurality of article conforming cradle members one on each of said end members and at least one intermediate said end members, supporting cross members including front, rear and top rails, each of said rails securing said end members longitudinally spaced from each other, said rails each having longitudinally extending supporting surfaces defining a three surface article support to transmit forces received thereby to said end members and cooperating with said end members to define said article receiving opening in the top and front of said suspension, and said article cradling member intermediate said end members being supported from and suspended in article supporting position between said front and rear rails to transmit forces received thereby to said front and rear rails.

2. A vibration dampening article suspension support structure comprising longitudinally spaced end members, front and rear rails secured to said end members at the lower portions thereof to retain the same in their spaced relation, a top rail securing the top rear of said members in spaced relation, said front and rear rails each having a longitudinally extending supporting surface, said rails and end members defining an article receiving opening said surfaces defining a longitudinally extending article support in said opening, a cradling member on each of said end members and at least a cradling member supported on and suspended between said front and rear rails intermediate said end members, said cradling members each shaped to conform to that of an article cradled therein.

3. A vibration dampening article suspension support structure comprising a pair of planar upstanding end plate members, transversely spaced longitudinally extending front and rear rails secured at their opposite ends to said end plate members to maintain the same in longitudinal spaced relation, said front and rear rails each having longitudinally extending article support surfaces, a top rail extending longitudinally between said spaced end plate members and secured to the tops thereof to retain the same in spaced relationship thereat, an article conforming cradle member one on each of said plate members and projecting longitudinally toward each other, and at least one article conforming cradling member suspended between said front and rear rails intermediate the longitudinally spaced end plate members and defining with said conforming cradle members on said plate members a suspended cradle for an article, said longitudinally

extending support surface on said rails serving to support an article along the front and rear lengths thereof.

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