Jan. 10, 1967 J. B. DOUGLAS 3,297,359

THEATRE SEAT WITH FOLDING ARM TABLET

Filed Oct. 1, 1965 5 Sheets-Sheet 1

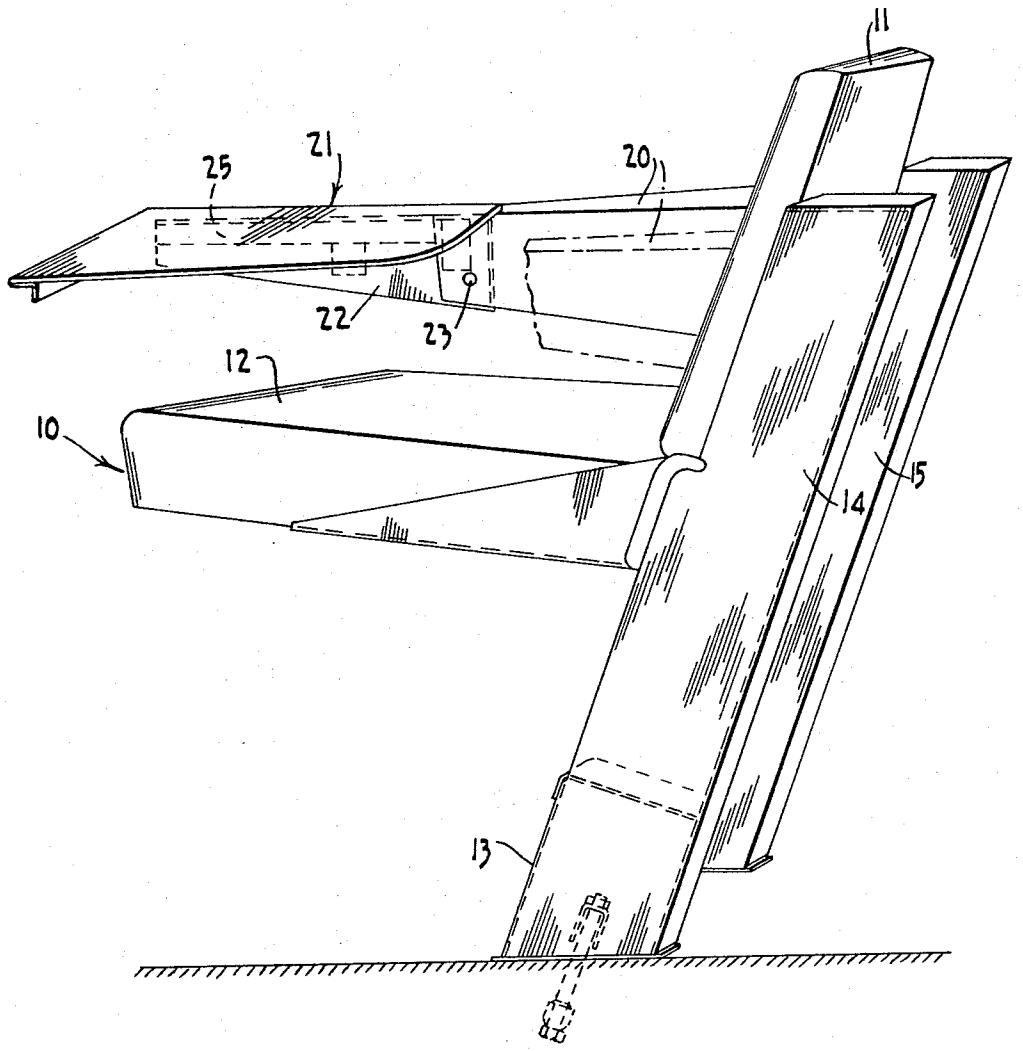


FIG. 1.

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THEATRE SEAT WITH FOLDING ARM TABLET

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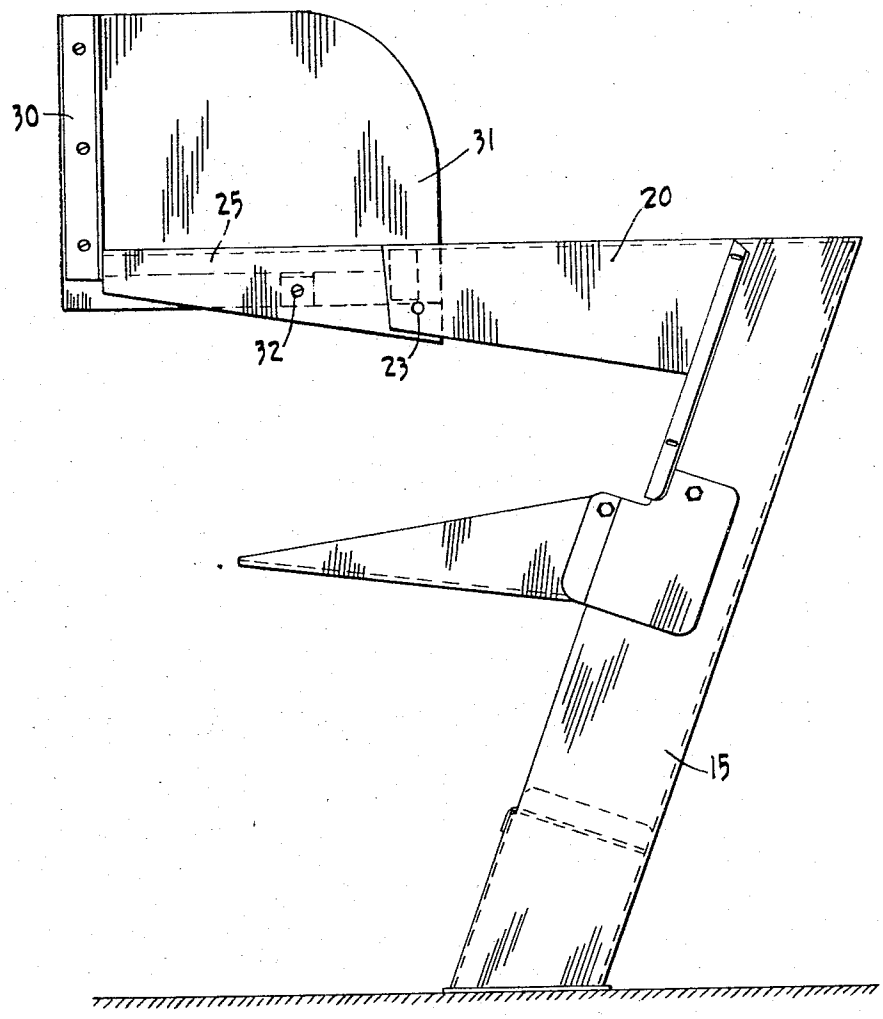


FIG. 2.

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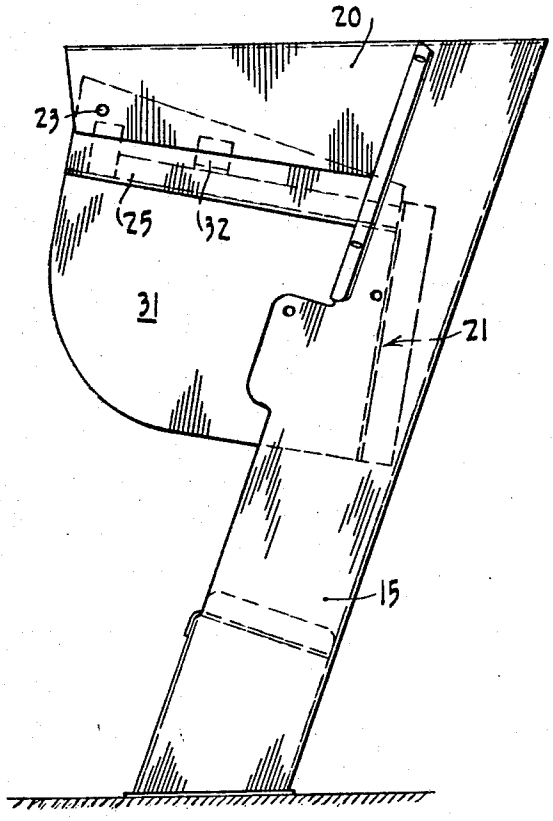


FIG. 3.

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THEATRE SEAT WITH FOLDING ARM TABLET

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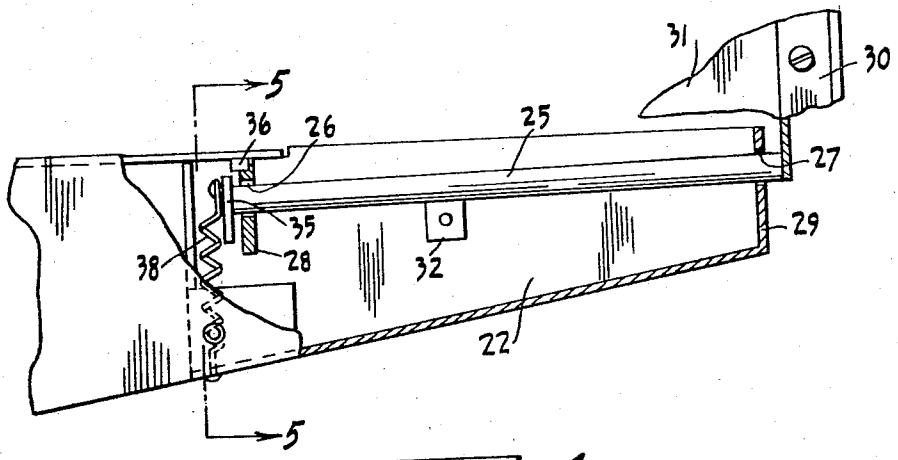


FIG. 4.

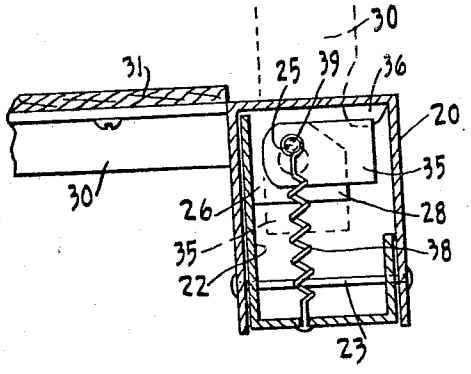


FIG. 5.

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THEATRE SEAT WITH FOLDING ARM TABLET

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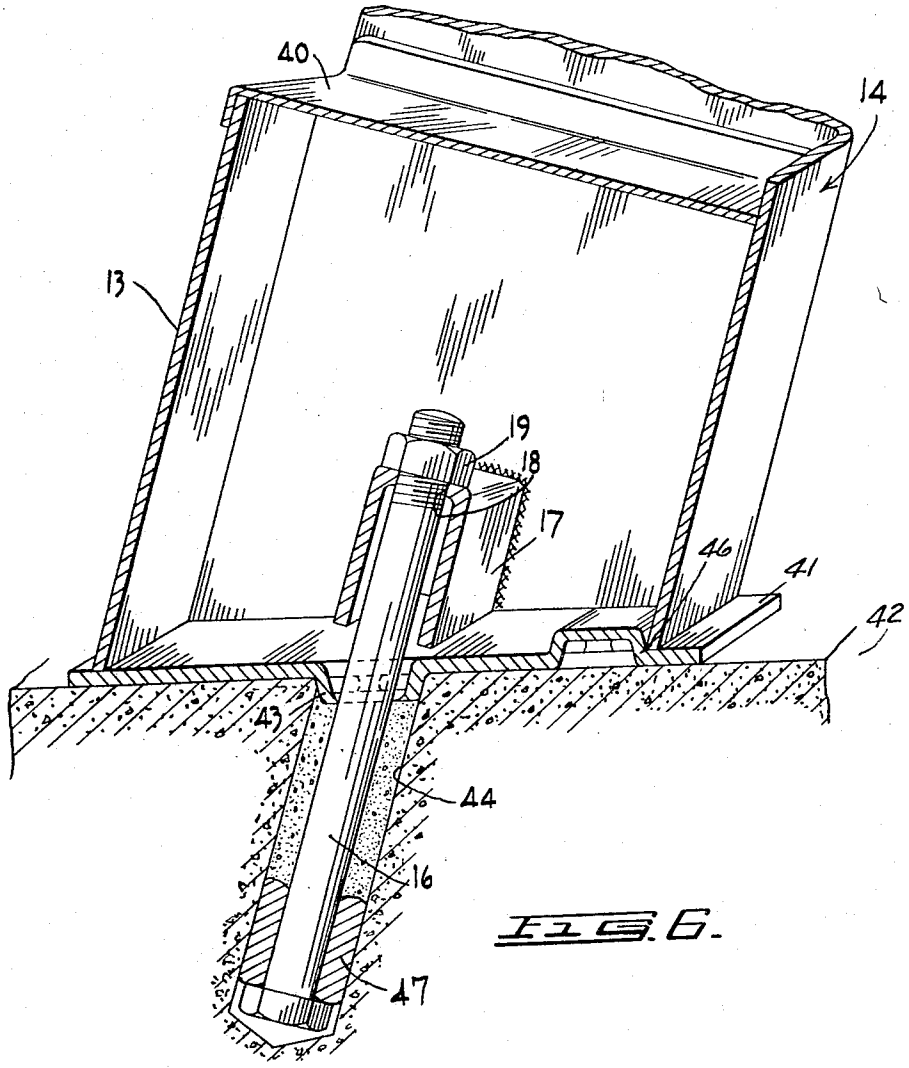


FIG. 6.

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United States Patent Office 3,297,359 Patented Jan. 10, 1967

3,297,359

THEATRE SEAT WITH FOLDING ARM TABLET

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Filed Oct. 1, 1965, Ser. No. 492,192
Claims priority, application Canada, Oct. 14, 1964, 913,894
5 Claims. (Cl. 297—162)

This invention relates to chairs having tablet arms and is more particularly concerned with a theatre seat having a folding tablet arm assembly.

It is well known to provide tablet arms on chairs when a writing area is required and space consideration does not permit the use of individual desks or tables. However, to provide such tablets on rows of seats of the type used in theatres or auditoriums is more difficult, as such seats usually have limited space between rows and the seats in each row are quite close together. A folding tablet must, therefore, be provided in order that persons can seat themselves without difficulty.

Furthermore, it is highly desirable that the tablet arm be self-storing when not in use so as not to interfere with the use of or detract from the appearance of the theatre seat.

It is a feature of the present invention to provide a folding tablet arm assembly which is easily moved out of the way to allow persons to seat themselves or to rise from their seat.

A further feature of the present invention is the provision of a folding tablet which is self-storing and which does not interfere with the use of the theatre seat or detract from the appearance of the theatre seat when the tablet is so stored.

A still further feature of this invention is the provision of a theatre seat particularly adapted to have a folding self-storing tablet arm attached thereto.

Accordingly, the present invention provides in combination with a seat supported between at least one pair of vertical members, a collapsible tablet assembly associated with an arm rest secured to one of said vertical members, said tablet assembly comprising a member pivotally secured to said arm rest so as to form in one position an extension of said arm rest, a shaft extending longitudinally of said pivotal member and journalled for axial rotation thereon, a tablet secured to said shaft, and means on the inner end of said shaft cooperating with said arm rest for locking said pivotal member in said one position to prevent downward movement thereof when said tablet is in use.

In the drawings which illustrate a preferred embodiment of the invention,

FIG. 1 is a perspective view of a theatre seat including a collapsible tablet arm assembly constructed in accordance with this invention.

FIG. 2 is a side elevational view of the theatre seat showing the tablet arm in a partially folded position.

FIG. 3 is a side elevational view of the theatre seat showing the tablet arm in the fully folded position.

FIG. 4 is a fragmentary side elevational view in detail of the tablet arm assembly.

FIG. 5 is a section taken along the line 5—5 of FIG. 4; and

FIG. 6 is a fragmentary perspective view of the lower portion of the theatre seat showing the means for connecting the seat to the floor.

A theatre seat **10** embodying certain features of the present invention is illustrated in the drawings. All parts of the theatre seat to be described are preferably of metal unless otherwise specified.

The theatre seat **10** includes a suitably padded back rest **11** and seat portion **12** supported between a pair of vertical members or supports **14** and **15**. The seat **12** is hingedly secured to the supports **14** and **15** in a manner more fully described in my copending Canadian patent application Serial No. 888,141. The supports **14** and **15** preferably comprise heavy guage sheet metal channels substantially rectangular in cross-section and having the opening in the channel directed toward the front of the chair. A lowermost portion **13** of each of the support members is preferably tubular.

In order to eliminate the conventional flange at the base of the vertical support members and the exposed bolts and nuts which tend to interfere with floor cleaning operations, a single mounting bolt **16** has been provided within each of the support members **14** and **15**.

As shown more clearly in FIG. 6, an inverted U-shaped channel member **17** is secured in end abutting relationship between opposed side walls of each of the support members **14** and **15**. The support members **14** and **15** are identical in this respect and only one need be described. Accordingly, the channel member **17** is provided with an aperture **18** through which the threaded upper end of the mounting bolt **16** is adapted to extend; a nut **19** is threadedly received on the bolt **16**. It will be appreciated that access to the bolt **16** may be gained by removing a sheet metal cover plate **40** which is provided to close the open upper end of the tubular portion **13** of the support member **14**.

The support member **14** is also provided with a base plate **41** between the lower edges of the member **14** and the surface of the concrete **42**. The base plate **41** has a suitable apertured downwardly projection portion **43** adapted to extend into the hole **44** in the concrete to prevent shifting of the plate **41**. In addition the base plate **41** is provided with a transversely extending ridge **46** against which the lower edge of the support member **14** is adapted to bear.

The manner of securing the mounting bolt **16** illustrated in FIG. 6 is by way of example only and other arrangements which will be readily apparent to those skilled in the art are considered to be within the scope of the present invention. In the example presented herein, the mounting bolt **16** having an anchor element **47** thereon is placed head down in the hole **44** in the concrete and cemented therein.

An arm rest **20** comprising an inverted U-shaped channel member preferably of metal and suitably padded is secured to each of the supports **14** and **15**. It will be appreciated that as the seats are constructed in rows, three vertical members can be used to support two seat portions, in which case, each arm rest **20** is provided with a folding tablet assembly **21** with the exception of the vertical member at the extreme left of each row. The theatre seat which is described and illustrated herein is the one adapted to be situated at the extreme left of a row of seats.

The folding tablet assembly **21** includes a member **22** pivotally secured to the outer end of the arm rest **20** by a bolt **23** passing therethrough (see FIG. 5). The member **22** has a substantially L-shaped cross-section throughout most of its length and is provided with a substantially U-shaped cross-section at the portion through which the bolt **23** passes.

As illustrated more clearly in FIG. 4, a shaft **25** extending longitudinally of the pivotal member **22** is journalled for rotation in apertures **26** and **27** in flanges **28** and **29** respectively disposed at right angles to the pivotal member **22**. The flange **29** may be formed integral with the pivotal member **22** whereas the flange **28** is secured to the plate **22** by welding. The outer end of the shaft **25** has a bracket **30** secured thereto which supports a tablet **31**

of wood or other suitable material to which the bracket **30** is attached by suitable means such as screws. A further bracket **32** is welded to the shaft **21** adjacent the mid-section thereof and is also adapted to be secured to the tablet **31**.

The inner end of the shaft **25** is provided with means co-operating with the arm rest **20** to lock the member **22** in the horizontal position. This means comprises a member **35** welded or otherwise secured to the shaft **25** to rotate therewith. The member **35** is so shaped and dimensioned that when in the positioned illustrated in FIG. 4 (see also broken lines in FIG. 5), it does not prevent pivotal movement of the member **22**. However, in the position illustrated in FIG. 5 wherein the tablet **31** is in the horizontal position, the member **35** engages a stop **36** provided on the undersurface of the arm rest **20**.

A helical return spring **38** is secured at its upper end to a projection **39** on the member **35** and at its lower end to the pivotal member **22** in any convenient manner. It is important that the projection **39** to which the spring **38** is connected, be substantially over center with respect to the shaft **25**. The shaft **25** and attached bracket **30** and tablet **31** are thus resiliently retained in position when rotated fully counter-clockwise (as viewed in FIG. 5). Clockwise rotation of the shaft **25**, however, causes the return spring **38** to urge the shaft **25** and member **35** in a clockwise direction to the position shown in dashed lines in FIG. 5.

In operation, assuming the tablet arm assembly **21** is in the stored position illustrated in FIG. 3, the assembly **21** is pivoted outwardly and upwardly until the pivotal member **22** forms an extension of the arm rest **20** as illustrated in FIGS. 2 and 4. The tablet **31** is then swung downwardly to a horizontal position illustrated in FIGS. 1 and 5, in which position the member **35** engages the stop **36** to prevent downward movement of pivotal member **22**. Furthermore, the return spring **38** yieldably retains the tablet **31** in the horizontal position in the manner described above.

If the seated person wishes to rise from his or her seat, the tablet **31** is easily moved to the vertical position of FIG. 2, and will remain there due to the urging of the return spring **38**. There is also sufficient frictional engagement between the mating portions of the pivotal member **22** and the arm rest **20** to retain the former in the extended position.

When the tablet arm assembly **21** is to be moved to the stored position from the operative horizontal position, the tablet **31** is pivoted to the vertical position thus releasing the lock provided between the member **35** and the stop **36**. The assembly **21** is then moved through approximately 180° so that the member **21** is partly received in the channel in the underside of the arm rest. The bracket **30** and a portion of the tablet are received in the channel provided in the support **15**.

I claim:

1. In a theatre seat including a seat portion mounted between a pair of hollow supports having their lower ends resting on a floor, the improvement comprising an inverted substantially U-shaped channel member secured in end abutting relationship between the internal surfaces of a pair of opposed walls of each said hollow supporting member, an aperture in said channel member through which a bolt is adapted to extend, said bolt being adapted to be secured to the floor, and a nut threadedly received on the portion of said bolt extending through said aperture, each said hollow supporting member being so constructed as to provide access for positioning and tightening said bolt.

2. In combination with a seat supported between two vertical members and an arm rest secured to one of said

vertical members, a collapsible tablet assembly, said tablet assembly comprising a member pivotally secured to said arm rest so as to form in one position an extension of said arm rest, a shaft extending longitudinally of said pivotal member and journalled for axial rotation thereon, a bracket on the outer end of said shaft, a tablet supported by said bracket and adapted to rotate with said shaft so as to be in a vertical plane or a horizontal plane, means on the inner end of said shaft cooperating with said arm rest for locking said pivotal member in said one position to prevent downward movement of the outer end thereof when said tablet is in a horizontal plane and resilient means for urging said tablet toward a horizontal plane.

3. A collapsible tablet assembly as claimed in claim **2** wherein said resilient means is a helical spring, one end of which is secured over center of said shaft, the other end of said spring being secured to said pivotal member, whereby said spring normally urges said tablet to two positions, in one position said tablet being in a vertical plane and in the other position said tablet being in a horizontal plane, said tablet being retained in said horizontal plane when in use.

4. In a theatre seat including a seat portion mounted between a pair of hollow supports having their lower ends resting on the floor, the improvement comprising a transverse member secured between opposed internal wall surfaces of each said hollow supporting member, an aperture in said transverse member through which a bolt is adapted to extend said bolt being adapted to be secured in said floor and secured to said transverse member, each said hollow supporting member being so constructed as to provide access for positioning and tightening said bolt.

5. In combination with a seat supported between two vertical members, a tablet arm assembly said tablet assembly comprising a member pivotally secured to said arm rest for movement so as to form in one position an extension of said arm rest and so as to be movable to a stored position wherein said member is substantially horizontally disposed beneath said arm rest, a shaft extending longitudinally of said pivotal member and journalled for axial rotation thereon, a bracket on the outer end of said shaft, a tablet supported by said bracket and adapted to rotate with said shaft so as to be in a vertical plane or a horizontal plane, means on the inner end of said shaft cooperating with said arm rest for locking said pivotal member in said one position to prevent downward movement of the outer end thereof when said tablet is in a horizontal plane.

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