I independently came up with an alternative way to obtain the sequence A182541 and it allows me to suggest a possible interpretation for it. I can't prove in a formal way that the sequence suggested by me and A182541(n) are, in fact, the same, however, my formula correctly calculates all the listed terms for A182541(n) to consider it just a mere coincidence.

So let’s consider the number of permutations of 1...n that have 2 following 1 for n >= 1
(A001710) Jon Perry 2008
The sequence of matrices can be constructed so that all the rows consist of permutations of 11...n

```
11,    112 ,                 1123                11234
       121                   1132                11243
       211                   1231                 ....
                             1213
                             ....
```

Then for each matrix we are going to do the following. For each element with the value of 'k' delete exactly k elements of this type from the matrix, repeat again if necessary until no elements with the value of k are left and the last element is reached. The whole operation shoud be repeated for all the values of k from 1 to n until no more elements can be deleted:

```
11    -->  1       1 element is left and there are no more ones to delete
=>  n(1) = 1

112        102      102
121  -->   120  ->  100 4 non-zero elements are left => n(2)=4
211        210      010
```

A182541(n) basically counts all the non-zero elements left in the matrix after the procedure of "deletion of elements" was completed as it was defined above.

The deletion can be done in any order:

```
1123             1123                 1123             1023
1132             1102                 1100             1000
1231             1201                 1001             1000
1213             1210                 1210             1200
1321             1321                 1301             1300
1312 del3 ->     1012   del 2-->      1010  del 1 ->   1000
2113             2110                 2110             2100
2131             2101                 0101             0100
3112             3112                 3110             3100
3121             0121                 0121             0120
3211             0211                 0011             0010
2311             2011                 0011             0010
```

19 elements are left. n(3) = 19

Clearly there is no need to draw all these matrices to get the A182541(n) as the number of rows of any matrix can be obtained directly from A001710 as the number of permutations.

Finally, A182541(n) can be calculated by the means of formula suggested by me. These matrices have a special property, so that

[The Number of rows] =0 (mod[the number of k-elements left]). for every k =1 to n.

Initially each matrix has the same number of elements bigger than 1 and it equals the number of its rows.
It also has the number of elements with a value of 1 equal to the (number of rows)*2.

After the procedure of deletion of the elements is finished we got the number of 'ones' which is equal to the number of rows in the matrix.
the number of twos which is equal to the (number of rows)/3
the number of threes which is equal to the (number of rows)/4
and so on.

Basically, by definition,

a(1) = 1
a(2) = The number of non-zero elements left = Sum of all the numbers of all the non-zero elements left. = the number of all the "1-elements" left + the number of all the "2-elements" left = Number of rows + Number of rows /3 = 3+3/3 = 3+1 = 4

a(3) = number of all the "1-elements" left + number of all the "2-elements" left + number of all the "3-elements" left = Number of rows + Number of rows /3 + Number of rows /4 = 12 +12/3 + 12/4 = 19. and so on.

---

a(1) =1
for n >=2 a(n)= A001710(n+1)*[1+Sum_{k=2..n}1/(k+1)]

---

and we get the sequence:

1, 4, 19, 107, 702, 5274, 44712, 422568 , ...

The only noticeable difference between the two that can be seen is that A182541(n) defined by Sergey Kitaev, Jeffrey Remmel starts from a(3) = 1

and the 'Matrix-related' or 'sum of the quotients of A001710' sequence defined by me starts from a(1) = 1 what I believe may be even a bit more relevant, but anyway...

for Coefficients in g.f. for certain marked mesh patterns. the formula will look like:

a(3)=1 For n >= 4 a(n)=(A001710(n-1))*[1+ Sum_{k=2..n-2} 1/(k+1)]

but it is the exact same.

Lastly, I want to mention one separate property.
Applying this rather odd or clumsy operation of 'deletion of the elements' to the similar type of matrices based on the sequence

```
 112,  1123,   11234,   11235
```

We get the Central Polygonal numbers. (OEIS A000124)

```
1113           1013
1131  ---> ... 0100
1311           1001
3111           0010
```

7 non-zero elements are left and it is the Central Polygonal number for n=3

```
11114
.....
.....
.....
41111 gives us 11 or the Central Polygonal number for n=4 and so on
```

Of course, it is rather trivial to be considered any seriously
and I added it just mostly an illustration purpose only to show that this operation may indeed have some sense/value.