before being loaded. If now the weights \( q_1 \) and \( q_2 \) are suspended from it, \( A \) will move to \( A_1 \) and the curve will take the position \( A_1 P M, M \) being a fixed point. Our task is to find a relation between the abscissas and ordinates of the new curve, which will enable the determination of the horizontal tension. The average tension in curve \( A_1 P M \) must be equal to the average tension of middle cable, and as we know the length \( A_1 P M \), we also know the length \( A_1 P A_1 \). If \( M_1 \) and \( M_2 \) are the lowest points of the two parabolas \( MP \) and \( PA_1 \), the above length is also expressed by the equation:

\[
S = C \left\{ 1 + \frac{2}{3} \left( \frac{z}{C} \right)^2 \right\} - (C - \lambda)
\]

\[
+ (B - \lambda) \left\{ 1 + \frac{2}{3} \left( \frac{y - x}{B - \lambda} \right)^2 \right\} -(B - l)
\]

or:

\[
S = C \left\{ 1 + \frac{2}{3} \left( \frac{z}{C} \right)^2 \right\} - (C - \lambda)
\]

\[
+ (B - \lambda) \left\{ 1 + \frac{2}{3} \left( \frac{y - l}{B - \lambda} \right)^2 \right\} -(B - l)
\]