

# **THE PROBLEM OF FINDING AN EQUALLY STRONG CONTOUR FOR A RECTANGULAR PLATE WEAKENED BY A RECTILINEAR CUT**

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The problem of finding an equally strong contour for a rectangular plate weakened by a rectilinear cut which ends are cut out by convex smooth arcs (we will call the set of these arcs the unknown part of the boundary) is considered. It is assumed that absolutely smooth rigid punches are applied to every link of the rectangular. The punches are under the action of normal stretching forces with the given principal vectors and the internal part of the boundary is free from external forces. Our problem is to find an elastic equilibrium of the plate and analytic form of the unknown contour under the condition that the tangential normal stress on it takes constant value (the condition of the unknown contour full-strength). The problem is solved by the method of complex analyze. The complex potentials of N. Muskhelishvili and equations of an unknown contour are constructed effectively (analytically).