If \( n \) new points, \( 1, 2, \ldots, n \) are to be determined from \((n + 2)\) given points \( a, b, p_1, \ldots, p_n \), as seen in the figure, one has to do with an \( n \) number of backward resections. This problem may be solved in a similar manner as with the simple backward resection, i.e. by the determination of two auxiliary angles and subsequent direct resection.

For the special case where \( p_i = p_2 = \ldots = p_n = p \), Prof. Dr.-Ing. Werkmeister has given a method for the rapid progressive improvement of given approximation values for the auxiliary angles.

It is however also possible to reduce a multiple backward intersection to a purely manifold number of lateral resections, a method which corresponds to the simple backward resection with the aid of Collins' points. As a matter of fact, it may be shown that the proposition: "an \( n \) number of backward resections can be computed by \( 2n \) lateral resections", is fully proved.

By referring to the figure, it is easily seen that the new point 1 is located on circle \( K_1 \) determined by \( a, p_1 \) and \( \varphi_1 \). The ray (12), since it includes with \((a 1)\) the given angle \( \varepsilon_1 = 180 - (\varphi_1 + \Psi_1) \), must pass through that point \( k_1 \) of \( K_1 \) which, with \( a \), yields the periphery angle \( \varepsilon_1 \). This point \( k_1 \), determined by lateral resection of \( a \) and \( p_1 \), will be called the Collins' point conjugated to new point 1. In precisely a similar manner the new point 2 is to be sought on the circle determined by \( k_1, p_2 \) and \( \varphi_2 \), and passes (23) through the Collins' point \( k_2 \) belonging to 3 determined by lateral resection from \( k_1, p_2 \), and so
Finally, \((k \Pi b)\) gives the direction of \((nb)\). \(n\) can now be determined by lateral resection from \(pn\), and \(b, n - 1\) by lateral resection from \(n, p_n - 1\), and so on. Thus, for the determination of the Collins' points, there are required \(n\), lateral resections; for the determination of the new points also \(n\), consequently altogether \(2n\) lateral resections are necessary for the solution of the problem.