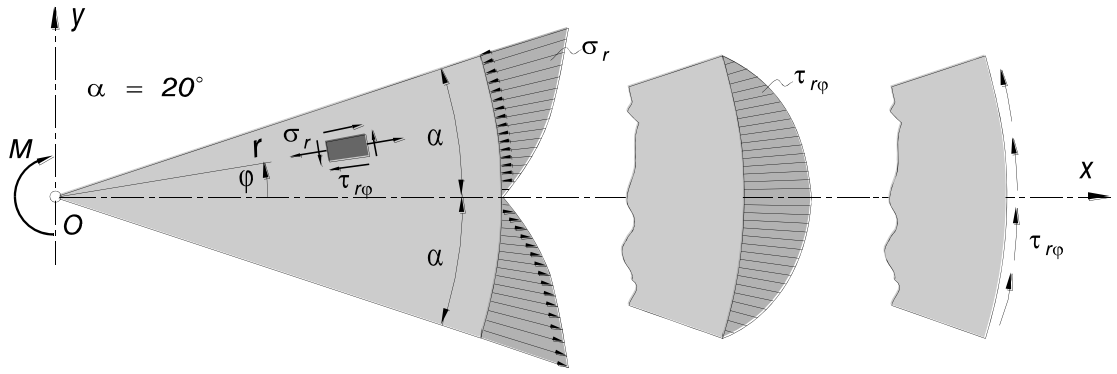
$$\sigma_\varphi(\pm\alpha)=0\,,\qquad \tau_{r\,\varphi}(\pm\alpha)=0\,. \tag{b}$$



Slika 5.34 *Klin opterećen spregom* M *u vrhu*

Prvi je uvjet ispunjen, dok nam drugi rubni uvjet daje

$$\frac{1}{r^2}(C_1+2C_2\cos 2\alpha)=0\,. \tag{c}$$

Odavde možemo dobiti

$$C_1=-2C_2\cos 2\alpha\,, \tag{d}$$

pa je

$$\tau_{r\varphi}=\frac{2C_2}{r^2}(\cos 2\varphi-\cos 2\alpha)\,. \tag{e}$$

Konstantu C_2 odredit ćemo iz uvjeta ravnoteže momenata oko točke 0 koji glasi

$$\boxed{\Sigma M_o=-M+\int_{-\alpha}^{\alpha}\tau_{r\varphi}\cdot r\mathrm{d}\varphi\cdot r=0}\,. \tag{f}$$

Kad u gornji izraz uvrstimo (e) i sredimo, dobit ćemo

$$\boxed{\Sigma M_o=-M+2C_2\int_{-\alpha}^{\alpha}(\cos 2\varphi-\cos 2\alpha)\mathrm{d}\varphi=0}\,,$$

odnosno

$$\boxed{2C_2=+\frac{M}{\sin 2\alpha-2\alpha\cos 2\alpha}}\,, \tag{g}$$

pa je

$$\boxed{\sigma_r=-\frac{2M}{\sin 2\alpha-2\alpha\cos 2\alpha}\frac{\sin 2\varphi}{r^2}}\,,$$