The title compound was prepared by solid state reaction of Ag$_2$O with Hg(NO$_3$)$_2$·H$_2$O in air at 350 °C. Its crystal structure was determined from single-crystal diffractometer data: Pnma, $a = 620.1(1)$ pm, $b = 670.1(1)$ pm, $c = 1267.5(2)$ pm, $Z = 4$, $R = 0.026$ for 586 structure factors and 33 variable parameters. The compound may be represented by the formula Ag(HgO)$_2$NO$_3$. The mercury(II) together with the oxygen atoms form zig-zag chains with linear coordination of the mercury atoms. The oxygen atoms of these chains are linked via silver(I) atoms, thus forming two-dimensionally infinite nets, which contain the trigonal planar nitrate groups in interstices. Thus, only secondary Hg-O and Ag-O bonds are formed between the nets.