Abstract. Let $a$, $b$ and $c$ be primitive Pythagorean numbers such that $a^2 + b^2 = c^2$ with $b$ even. In this paper, we show that if $b_0 \equiv \epsilon \pmod{a}$ with $\epsilon \in \{\pm 1\}$ for certain positive divisors $b_0$ of $b$, then the Diophantine equation $ax + by = cz$ has only the positive solution $(x, y, z) = (2, 2, 2)$. 