Too difficult for Stockfish 16

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This amazing chess puzzle was composed by a Latvian chess-problem composer in 1927 and is too difficult for the world's leading chess engine, Stockfish 16, to solve, even though it has a calculating capacity 22 moves deep.

It is White's turn to move. What should White do? Is a mate possible? Or any other winning strategy?

A mate looks to be completely out of the question. Black's King is as safe as a bank on h1, tucked in behind his Knight on g1, and in front of his three pawns. White's Rook on c1 pins Black's Knight to his King, preventing it from moving, but Black's King and pawn on h2 support the Knight, and it cannot be captured without the h2 pawn queening on g1.
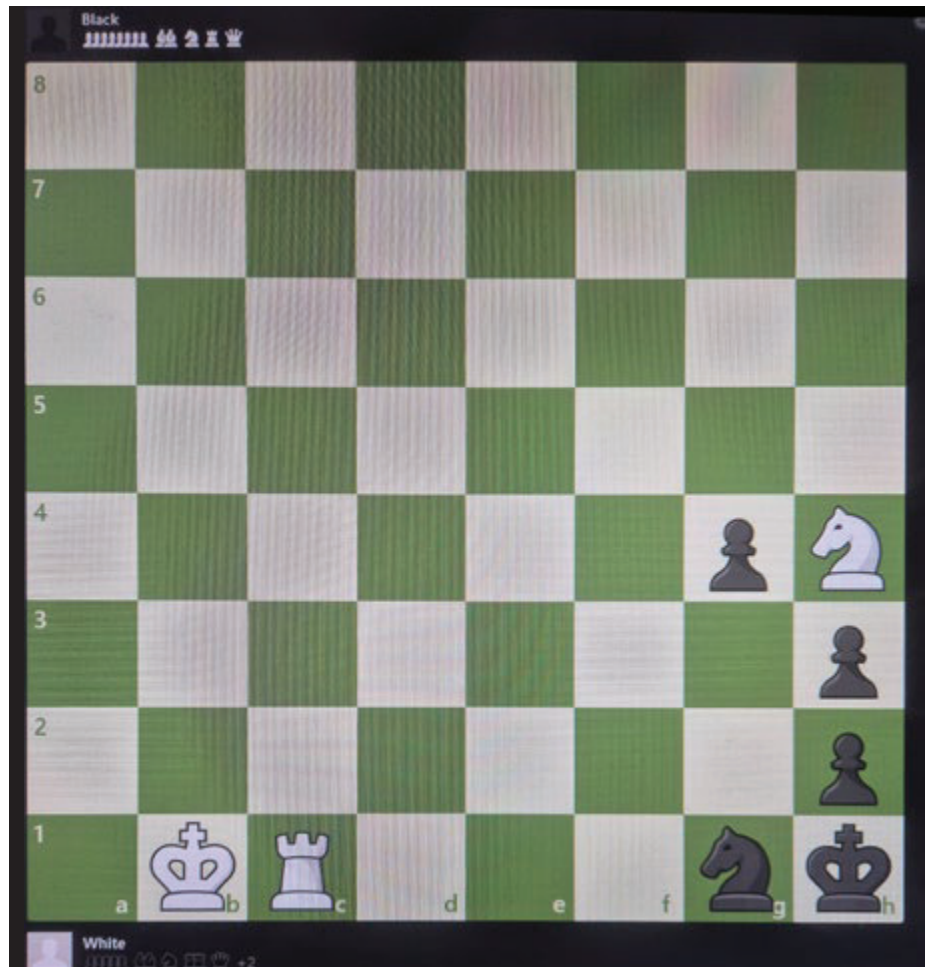
The position looks like a forced draw, which is Stockfish 16's assessment of this position.

White's Knight on h4 controls the g2 square, preventing Black's King from escaping from h1 and thereby preventing his h2 pawn from promoting to a Queen on h1. At the moment, only Black's pawn on g4 can move. If it advances two squares to g2, none of Black's pieces will be able to move, resulting in a draw, unless White, in the meantime, were to move his Rook off the first rank. If White were to do that, however, it would unpin Black's Knight, enabling it to move from g1, then enabling Black's King to escape from h1 via g1 and f2, then enabling the h2 pawn to promote to a Queen on h1, soon resulting in a win for Black. So White's Rook really has no option but to remain on the first rank. At first glance it seems also that White's Knight has no option but to remain on h4, preventing Black's King from escaping from h1 and his h2 pawn from promoting to a Queen on h1.

And now I will share with you the solution that even Stockfish 16 has missed. White has a forced win available to him if, and only if, he moves his Rook to f1! Black's only possible reply is to move his g4 pawn forward to g3. As a result of White's Rook on f1 and Knight on h4, this is his only legal move.

And now White's Knight moves to f5! 'What?!', I hear you exclaiming.

Yes, White now frees the g2 square for Black's King, and amazingly, if Black moves his g3 pawn to g2 now, White will deliver a smother mate by moving his Knight to g3 behind it, when Black's King will be unable to move out of that check.

So, to avoid that smother mate, Black's only move to survive is to move his King to g2, threatening White's Rook on f1.

And now another amazing Knight move by White: his Knight moves to e3! Now it checks Black's King on g2, defends White's Rook on f1 and, amazingly, forces Black's King to retreat to h1. And now it becomes clear why White's Rook had to move to f1 – it was to prevent Black's King from escaping to f2 or f3 when White's Knight moved from f5 to e3.

Stockfish 16 still can't see White's winning strategy. White next moves his Rook back to where it originally was on c1 in the diagrammed position! Only now does Stockfish 16 see a forced mate in two moves. But it is a far from obvious mate.

Because of White's Rook's pin on Black's Knight, and White's Knight's control over g2, Black has only one legal move, and that is to move his g3 pawn to g2. Black's King is now entombed by his h2 and g2 pawns and by his Knight. Isn't this a forced draw?

No, another even more amazing move by White's Knight: it now moves to d1 (!!), blocking White's Rook from pinning Black's Knight.

Black's only legal move now is to move his Knight, and he moves it to e2, where it attacks White's Rook on c1.

And now the coup de grâce by White's Knight: it moves to f2, delivering a double check from both it and the Rook, which is checkmate because Black's King cannot move out of the simultaneous checks by both pieces.

And here it becomes clear why White's Rook had to move back to c1. It was to enable White's Knight to move to d1, thereby blocking White's Rook from controlling the first rank, thereby unpinning Black's Knight and enabling it to move from g1, and finally enabling White's Knight to deliver a double check and checkmate by moving to f2.

I doubt that any human would find the winning strategy if this position occurred in over the board play. Chess never ceases to challenge and entertain us. **BN**