

## Themes & Tasks

# PYTHAGORAS' TROUSERS PART 1

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The majority of chess ideas is connected with chessboard geometry. In chess composition perhaps the systematic manoeuvre of a single piece or a whole complex of pieces is the brightest of such ideas. I must admit that I am an old admirer of geometry on the chessboard as a whole or systematic manoeuvre in particular. And this love began in my school days when I surprised the teacher and the whole class during one of the mathematics lessons demonstrating a clear proof of Pythagoras' theorem with the help of a chessboard (the hypotenuse square is equal to the sum of the squared legs of a triangle — "Pythagoras trousers on all parties are equal!"). Take two chessboards, draw on each of them four straight lines and there is the proof!

The great Genrikh Kasparyan considered the classification of systematic manoeuvres in which a complex of pieces is involved a difficult problem. Therefore, in this first article on this very broad and interesting theme I will concentrate on a simple, but rather attractive manoeuvre: the staircase.

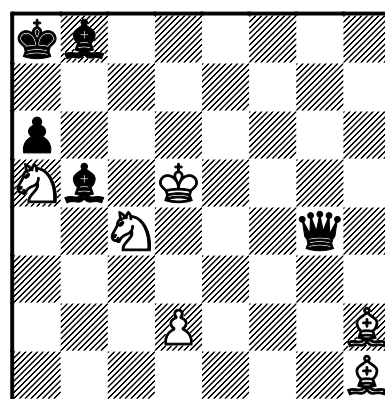
### 1. The royal staircase

The simplest motivation for staircase manoeuvre of the king is battery play. It is presented in light form in the old P1.

At first, room for activity of the white king is created: **1.Sb6+ Ka7 2.Sc8+ Qxc8** (Ka8; Kc5+). Then the second battery is constructed: **3.Bg1+ Ka8**. And now follows a staircase descent of the king: **4.Kd4+ Ka7 5.Ke4+ Ka8 6.Ke3+ Ka7 7.Kf3+ Ka8 8.Kf2+ Ka7 9.Ke1+**, wins. Simple, but tasteful!

P.1 M. Platov

*Vechernaya Moskva* 1927



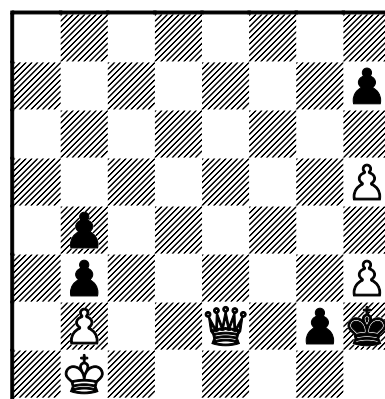
Win

### 2. The queen staircase

Staircase marches are very typical for queens. Their basic motivations are connected with forced actions forcing mate or winning material. I shall not pinpoint on tasks here. These are all based on trivial consumption of black pieces during numerous queen descents and ascents. Instead, I will concentrate on three curious examples.

P.2 E. Zakon

*Jerusalem Post* 1953



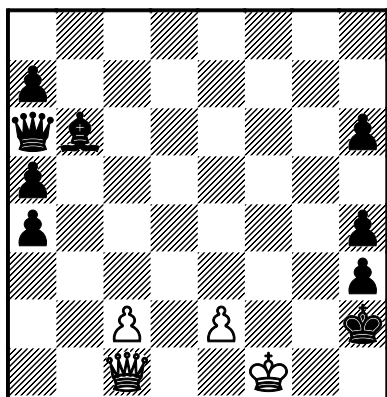
Win

The pawn h3 does not allow White to win in a standard way. For example: 1.Kc1? Kh1 2.Qe4 Kh2 3.Qf4+ Kh1 draws. Also a staircase march of the queen, in order to capture black pawn h7, makes no sense: Black will promote the pawn g2 to a queen with check. We do notice that the black pawn g2 is pinned. So White has a tempo. But what to do with this advantage? Only the far-sighted and beautiful **1.Ka1!!** works. This apparently completely inferior move has a deeply hidden motivation. **1...Kh1 2.Qe4 Kh2 3.Qe5+ Kh1 4.Qd5 Kh2 5.Qd6+ Kh1 6.Qc6 Kh2 7.Qc7+ Kh1 8.Qxh7 g1Q+ 9.Qb1!** This is the point! The white king cleared the square b1 for its own queen. Another line is similar: 6...h6 7.Kb1! Kh2 8.Qd6+ Kh1 9.Qxh6 g1Q+ 10.Qc1! Classic!

In the following example the white queen ascends and descends the staircase three times with the help of two pawn's closings – at first a queen line and then a bishop line.

### P.3 G. Nadareishvili

2nd comm. *Shakhmaty v SSSR* 1946

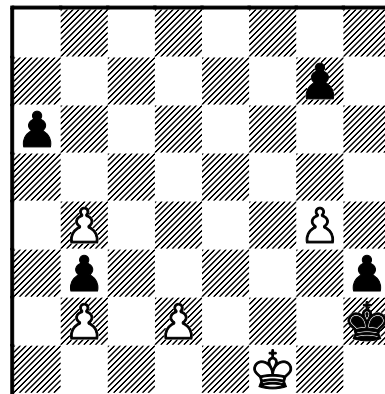


Win

**1.Qf4+ Kh1 2.Qe4+ Kh2 3.Qe5+ Kh1 4.Qd5+ Kh2 5.Qd6+ Kh1 6.Qc6+ Kh2 7.c4!** Unpins pawn 2... **7...Kg3 8.Qf3+ Kh2 9.Qf4+ Kh1 10.Qe4+ Kh2 11.Qe5+ Kh1 12.Qd5+ Kh2 13.Qd6+ Kh1 14.Qc6+ Kh2 15.e3!** ... and now closes the diagonal b6-g1 for the black bishop. **15...a3** (Kg3 16.Qd6+ Kg4 17.Qf4+ Kh5 18.Qf5 mate) **16.Qd6+ Kh1 17.Qd5+ Kh2 18.Qe5+ Kh1 19.Qe4+ Kh2 20.Qf4+ Kh1 21.Qf3+ Kh2 22.Qf2+ Kh1 23.Qg1** mate.

### P.4 V. Smyslov

*Moi Etyudi* 2005



Win

The 7th world champion of chess, Vasily Smyslov, is the champion among champions in studies. After having stopped playing tournaments, he switched to composition. In 2005 his collection *Moi Etyudi* (*My Studies*) with 114 studies was published. I remember how I was working on the first edition of the collection (Smyslov asked me to be the editor) when Vasily Vasilevich came to 64 to select photos and drawings from our archive for the upcoming book. When this was done he called to inform his wife that he was leaving for home. But then he decided to show me a new study. He put the position on the board and we soon started analyzing it deeply. One hour passed after the other. Nadezhda Andreyevna worrying about her husband had to call a couple of times before Vasily Vasilevich went home. And he left the envelope with photos and drawings on the table...

After the obvious **1.Kf2 Kh1** the move 2.d4 looks absolutely natural. But it misses the win which will only become clear after 11 (!) moves. Also wrong is 2.g5? a5! 3.b5 a4 4.b6 a3 5.b7 axb2 6.b8Q b1Q 7.Qg3 Qf5+! since White has lost control over the f5-square. Only the incredible **2.d3!!** brings White the victory. Black's counter play is connected with stalemate. However, the direct 2...h2 is impossible because of a fast mate. So two pawn moves remain:

**A. 2...a5 3.b5 a4 4.b6 a3 5.b7 axb2 6.b8Q b1Q.** And now the white queen approaches the black king: **7.Qb7+ Kh2 8.Qc7+ Kh1**

**9.Qc6+ Kh2 10.Qd6+ Kh1 11.Qd5+ Kh2 12.Qe5+ Kh1 13.Qe4+!** This check became possible thanks to the closing of the diagonal b1-h7 on the second move! **13...Kh2 14.Qf4+ Kh1 15.Qf3+ Kh2 16.Qg3+ Kh1 17.Qxh3 mate.**

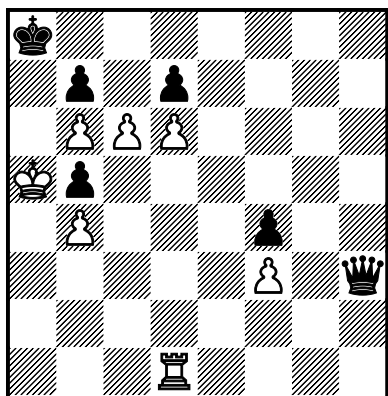
**B. 2...g5 3.Kg3! a5 5.b5 a4.** In case the king escapes from the corner – **4...Kg1 5.Kxh3 a4 6.b6 a3 7.b7 axb2 8.b8Q** Black will lose its new queen: **8...b1Q 9.Qh2+ Kf1 10.Qh1+.** **5.b6 a3 6.b7 axb2 7.b8Q b1Q.** And now the queen goes down to the victim on another staircase. **8.Qb7+ Kg1 9.Qb6+ Kh1 10.Qc6+ Kg1 11.Qc5+ Kh1 12.Qd5+ Kg1 13.Qd4+ Kh1 14.Qe4+! Kg1 15.Qe2** (15.Qe3 only defers the inevitable final) wins.

### 3. The rook staircase

Now it is the rook's turn. There are many more motivations for staircase manoeuvres than for the king and the queen case.

#### P.5 G. Kasparian

3rd prize tourney in connection with the 3rd Moscow Chess Tournament 1936



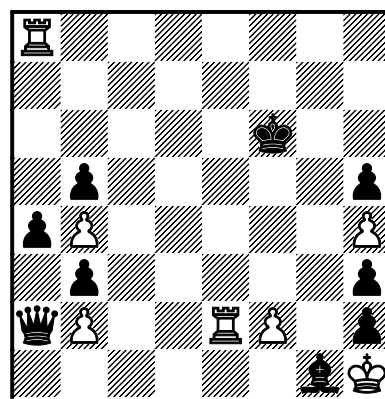
Win

**1.c7!** There is an amusing draw after **1.cxd7?! Qxd7 2.Rh1 Qg7 3.d7 Qd4 4.Rg1 Qd5! 5.Rg2 Kb8! 6.Rh2 Qd4 7.Rh1 Ka8! 8.Rg1 Qd5**, when the white rook path is the square g1-h1-h2-g2. For the sake of justice it is necessary to tell that Black has other ways to draw, for example, **3...Qg8 4.Rh2. 1...Qh8.** Black's defence is based on the check threat on the a-file. **2.Rd4! Qg8! 3.Rd5! Qh8 4.Re5 Qg8 5.Re6 Qh8** (dxe6; d7) **6.Rf6 Qg8 7.Rf7 Qh8.** Otherwise Black will eventually lose be-

cause of zugzwang, for example, **7...Qe8 8.Rxf4 Qg8 9.Rf7 Qe8 10.Rg7 Qh8 11.f4. 8.Rg7 Qe8 9.Rg2!** After **9.Rg1 Qh8** White is obliged to return to **10.Rg7** in view of **10.Re1? Qa1+.** **9...Qh8 10.Ra2.** Now the rook manoeuvres make sense: White has created the decisive rook and king battery. **10...Qg8 11.Kxb5+** wins.

#### P.6 N. Kralin

1st prize Bondarenko JT 1974 (correction)



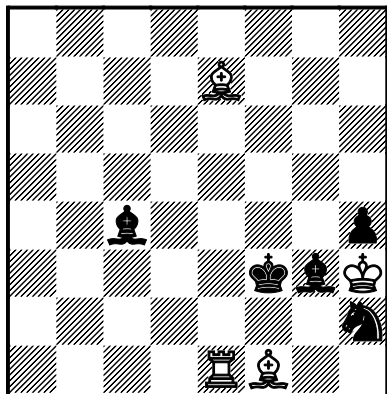
Draw

The initial position had **wRc2** and **bKe5** (**1.Re2+ Kf6**) but I believe it is cooked by: **1.Rc5+! Ke4 2.Re8+ Kd3 3.Rd8+ Ke2 4.Re8+ Kf1 5.Rc1+ Kxf2 6.Rc7! Kf1 7.Rc1+ Kf2 8.Rc7).**

**1.Rf8+ Kg7 2.Rf3!** Setting up a stalemate construction! The careless **2.Rf4?** fails to **Qb1 3.Re7+ Kh6 4.Re6+ Qg6 5.Rxg6+ Kxg6 6.Rf3** trying to keep a position with the help of zugzwang is easily parried by **6...Kg7! 7.Rxh3 (Rf5 a3!;) 7...Bxf2 8.Rd3 (Kxh2 Bd4;) 8...Bg1. 2...Qb1.** Black has no other options other than bringing the queen into play. **3.Re7+ Kg8 4.Re8+ Kg7 5.Re7+ Kh6 6.Re6+ Qg6! 7.Rc6!** Preparing a positional drawn: **7...Kh7** (7...Qxc6 stalemate involving a pinned rook f3) **8.Rc7+!** (8.Rxg6? Kxg6 9.Rxh3 Bxf2 we have seen before) **8...Qg7! 9.Rb7! Kh8** (9...Qxb7 stalemate) **10.Rb8+ Qg8! 11.Ra8! Kh7** (11...Qxa8 stalemate) **12.Ra7+ Qg7 13.Rb7 Kh6 14.Rb6+ Qg6 15.Rc6**, and the white rook secures the draw by a perpetual upward-downward manoeuvre on a staircase.

**P.7 J. Fritz**

1st prize Czechoslovakian ty, 1954 (vers.)



Win

The tense initial position calls for resolute actions. **1.Bg2+ Kf2 2.Re4!** Simultaneously threatening mate and winning the knight. **2...Be2!** Mate has, of course, priority. Black has to abandon the knight. But the piece loss is compensated by... mate counter play! **3.Bc5+.** After 3.Bxh4 Bxh4 4.Rxh4 a draw position is reached according to the 6-men EGTB, e.g. 4...Bf1! **3...Ke1 4.Bg1 Kd2!** (the knight is already doomed: 4...Sg4 5.Bf3) **5.Bxh2 Bd3,** and a nice systematic manoeuvre with an ascent of the white rook: **6.Rd4!** (6.Bxg3 Bxe4 7.Bf4+ Kd3) **6...Kc3 7.Rd5 Bc4! 8.Rc5! Kb4 9.Rc6 Bb5 10.Rb6 Ka5 11.Rb7 Ba6 12.Ra7.** And the edge of the board secures White a win!

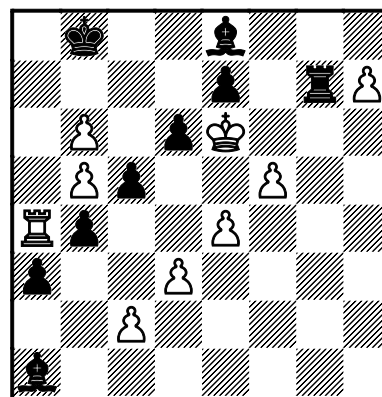
The following study, which already appeared in one of my previous articles, is also an excellent example of the theme. The Georgian grandmaster is a great master in the synthesis of various themes and ideas in studies!

**(P.8)** Here the white pawns help the black rook in a staircase march. **1.Ra8+!** It is necessary to get rid of the rook before the manoeuvring! After 1.h8Q? Rg6+ 2.f6 Rxf6+ 3.Kd5 Rf5+ 4.e5 Rxe5+ 5.Kc4 Re4+ 6.d4 Rxd4+ 7.Kb3 Rd3+ 8.c3 Rxc3+ the 4-square is inaccessible to the white king, and has to play 9.Ka2 b3+ 10.Kxa3 b2+ 11.Ka2 b1Q+ 12.Kxb1 Rc1+ 13.Kxc1 Bxh8 14.Rg4 Bf7, and Black wins. **1...Kb7! 2.Rb8+!** (too early is 2.h8Q? Rg6+ 3.f6 Rxf6+ 4.Kd5 Bf7 mate) **2...Kxb8 3.h8Q Rg6+ 4.f6! Rxf6+ 5.Kd5 Rf5+ 6.e5! Rxe5+ 7.Kc4 Re4+ 8.d4! Rxd4+**

**9.Kb3 Rd3+ 10.c3! Rxc3+ 11.Ka4!** We already know the consequences of 11.Ka2?: 11...b3+ 12.Kxa3 (12.Kxa1 Rc1 mate) 12...b2+ 13.Ka2 (13.Ka4 Ra3+! 14.Kxa3 b1S+) 13...b1Q+ 14.Kxb1 Rc1+ 15.Kxc1 Bxh8 wins. After the text move white king is safe.

**P.8 D. Gurgenzidze**

4th prize *Molodost Gruzzi* 1970



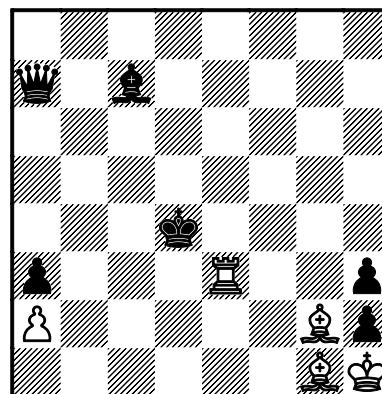
Win

In staircase manoeuvres also two pieces can take part simultaneously. Here are two characteristic examples.

**4. The rook and king staircase**

**P.9 G. Kasparian**

1st prize VLKSM 20 JT 1938



Win

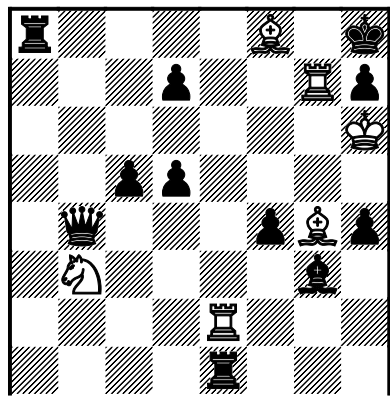
**1.Re4+!** The queen winning manoeuvre has to be prepared carefully. Too hasty is 1.Rd3+? Kxd3 2.Bf1+ Kc2 3.Bxa7 Kb2 4.Bc4 Be5, and Black constructed an impenetrable fortress. **1...Kd5!** Exposes himself to the second battery. Die with music! A short torture awaits Black after 1...Kd3 2.Bf1+ Kxe4 3.Bxa7 Bd6 4.Bb6 Kf3 5.Bxh3 Ke2 6.Bf5 Kd2 7.Bd4 Ke2

8.Kg2 Kd2 9.Be4 Ke2 10.Kh3! Kf1 (10...Kd2 11.Kg4 h1Q 12.Bxh1 Kc2 13.Be4+) 11.Kg4 Bb4 12.Kf5 Be1 13.Ke6 Bf2 14.Kd5. **2.Rd4+ Kc5.** Adhering to the selected way. After 2...Ke5 3.Rd5+ Ke6 4.Bxh3+ Kxd5 5.Bxa7 Kc4 White does not let the black king pass to the saving square b2: 6.Be3! Kc3 7.Bc1! Bd6 8.Bf5. **3.Rd5+ Kc6!** (Kc4; Bf1+) **4.Rc5+ Kb6** (familiar 4...Kd6 5.Rc6+ Kd7 6.Bxh3+ Kxc6 7.Bxa7) **5.Rc6+ Kb7 6.Rb6+.** With a small but decisive advantage. My computer insists on 6.Rxc7+? Kxc7 7.Bxa7 hxc2+; the "poor fellow" does not know that corner 8 not win! **6...Kc8 7.Bxh3+ Kd8 8.Rd6+ Bxd6 9.Bxa7.** Now the black king is far from square b2 and White easily wins. Excellent work of the double battery! Thus the black king, having a wide choice of squares, becomes courageous under the double checks.

## 5. The rook and queen staircase

P.10 S. Didukh

1st prize Humor Tourney 2004



Draw

**1.Be6!** It is necessary to close the e-file. Too early is 1.Bd6? Qc3 2.Re5 Qxe5 3.Bxe5 Rxe5 4.Rxh7+ Kg8 5.Rg7+ Kf8 6.Sxc5 Rd8 7.Sxd7+ Rxd7 8.Rxd7 Ke8. **1...dxe6 2.Bd6! Qc3 3.Sd4! Qxd4.** The best chance. The refusal of capture 3...Qd3 leads to a draw after 4.Be5! Rxe2 (4...Qxd4 5.Ra2! Rxa2 6.Rg6+ Rxe5 7.Rg8+ Kxg8) 5.Rxh7+ Kg8 6.Rg7+ Kf8 7.Bd6+ Ke8 8.Re7+. **4.Re5!** (Be5? f3;) **4...Qd3!** Accepting the sacrifice quickly ends with a stalemate: 4...Qxe5 5.Bxe5 Rxe5 6.Rg8+ Kxg8. **5.Re4!** (5.Reg5? f3! 6.Be5 Bxe5) **5...Qc3!** (Qxe4; Be5!) **6.Rd4!** It is not a good idea leave the queen more space: 6.Re5? Qc2 7.Re4 Qb2 8.Re5 Qb1 9.Re4 Qa1 10.Re5 Ra7 11.Rxa7 Qxa7 12.Rg5 f3!, and Black wins. **6...Qc2 7.Rd3!** (7.Ra4? Rf8! 8.Ra8! Qf5! 9.Be5! Qh5+! 10.Kxh5 Rxe5+ 11.Kh6 Rh5+!) **7...Qb2 8.Rc3 Qb1 9.Rc2 Qa1 10.Rb2!** (Rc3? Ra7;). The queen is forced against the ropes of the box ring and must capture the rook: **10...Qxb2.** But now a simple stalemate combination decides: **11.Be5! Rxe5** (or 11...f3 12.Rxg3+ Rxe5 13.Rg8+ Kxg8; 11...Rf8 12.Rxh7+ Kg8 13.Rg7+) **12.Rg8+! Kxg8** stalemate.

(To be continued)