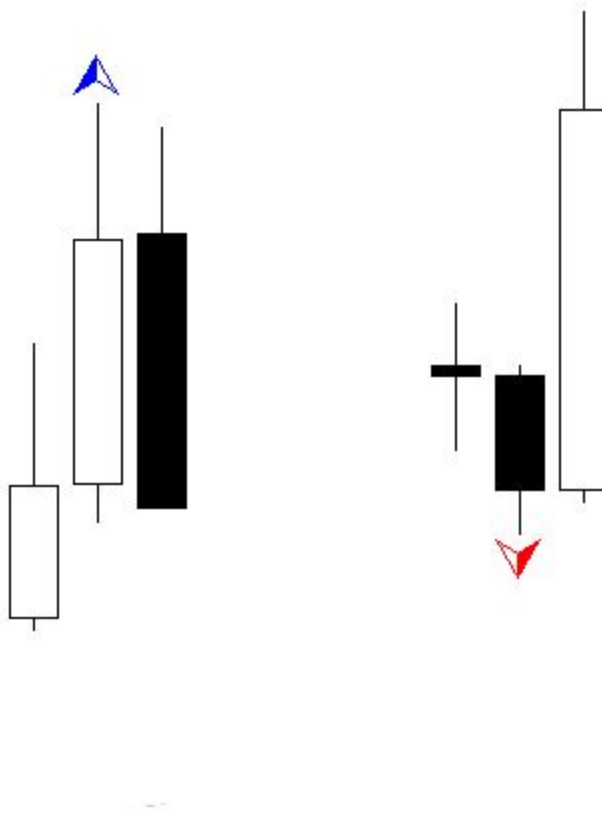


# ST Patterns Strategy Implementation (Stage 1)

## Fractals

### Fully formed fractals



*Fig.1*

The fractal indicator is one of the elements of the “Chaos Trading Theory” introduced to the market by Bill Williams. This indicator calculates and shows the peaks of ups and downs on the market chart.

Based on the results of tests, we know that the fractal consisting of three candles shows better results than those consisting of five candles. (See: Fractal Direction ST Patterns MT4 on MQL5: <https://www.mql5.com/en/market/product/30135>, it's important to use the directional indicator as we're going to use the directions further on in order to set the SL levels properly)

## Not Fully Formed Fractals

See Fig 4.

It means simply that during the time that candle C is being drawn on trading platform, you won't know if candle B is really going to be a fractal because candle C could end up having a high that exceeds the high of candle B.

## Average Daily Range (ADR)

Average Daily Range (a useful measure of volatility) is calculated as the average over the five previous trading days, of the distances from the high to the low for each candle.

$$\text{ADR (5)} = ((\text{High D1} - \text{Low D1}) + (\text{High D2} - \text{Low D2}) + (\text{High D3} - \text{Low D3}) + (\text{High D4} - \text{Low D4}) + (\text{High D5} - \text{Low D5})) / 5$$

## Fractal Corridor

An **important** part of all ST Patterns is the Fractal Corridor. The Corridor is formed at the moment when the price crosses the fully formed fractal. The boundaries of the Corridor are formed by two parallel lines passing through the up and down peaks of the two nearest-to-each-other, but oppositely-directed fractals (in other words, the nearest Up Fractal and nearest Down Fractal). The height of the Corridor is measured by the distance from the bottom point of the pierced fractal to the upper peak of the opposite fractal. The first thing to assess before the formation of each structural model is the height of its Corridor.

Most Corridors are formed with a height that is less than half of the Average Daily Range (ADR).

However, sometimes larger Corridors appear on the chart. It is advisable to use only those Corridors whose height in points does not exceed 50% of the ADR for the last five completed days. In my experience, it's best to skip a Corridor with a greater height. Then, you can open the position in any direction with the appearance of the next Corridor with an acceptable height.

The height of the Corridor determines the distance in points to the Target (Fibonacci Levels).



Fig 2.

## Fibonacci Indicator

To trade, you will also need a Fibonacci indicator with its levels configured as below.

Level 0.0 = STOP

Level 1.0 = START

Level 3.1 = CLOSE IF BACK 210%

Level 5.0 = TAKE PROFIT 400%

The indicator is programmed so that level 3.1 corresponds to getting a price of 210% of the height of the Corridor, while level 5.0 indicates where 400% is. Various ST Patterns will arise

when price passes through each of these levels. The significance of these values will be explained

### Start Line and the Opening Level

The necessary condition for a Corridor to become part of the ST Pattern Direct Movement is for the market to **exceed the price of the fractal level** (the Start Line) by a threshold distance that is determined by the trader for the given market.

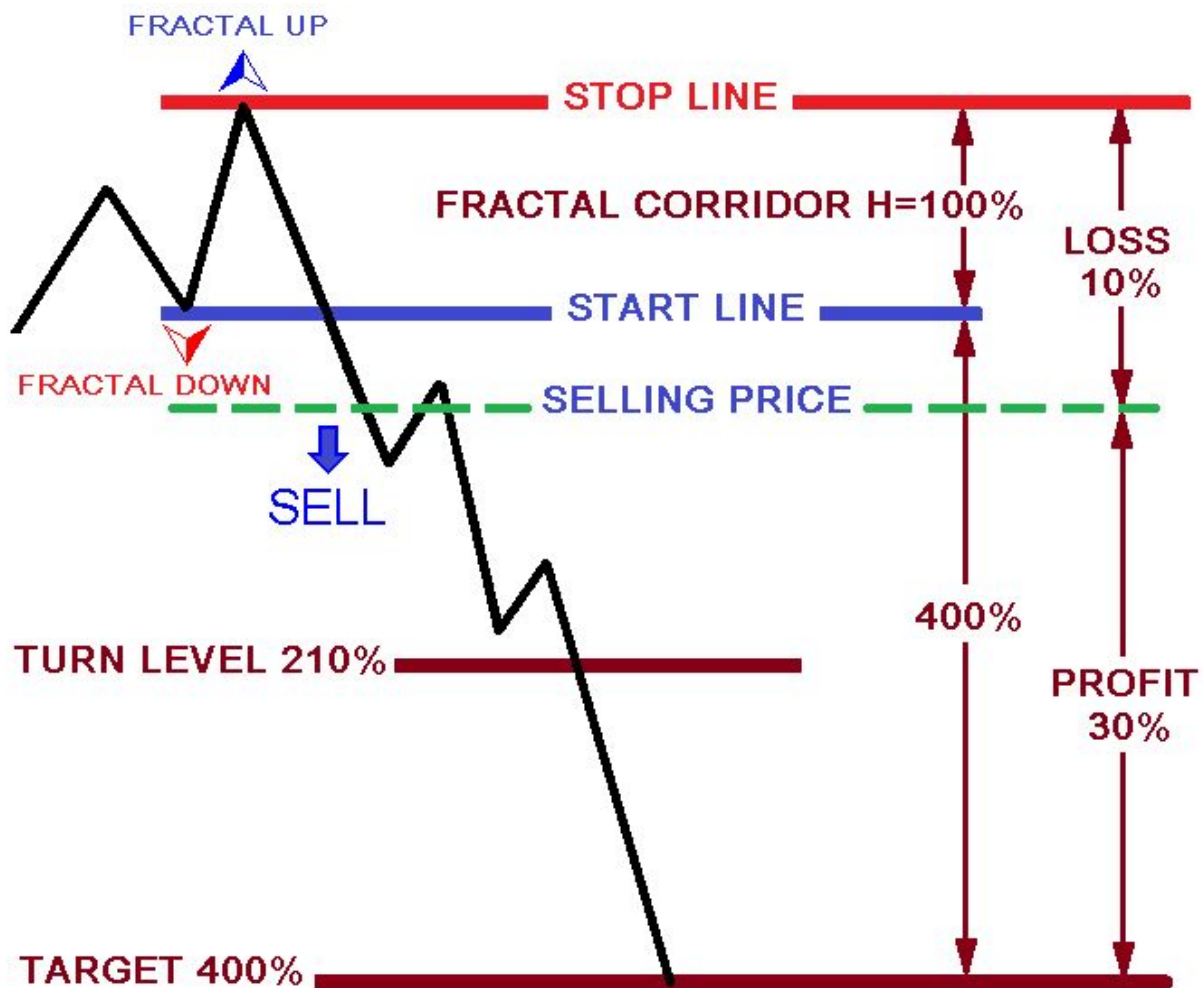


Fig 3.

The level of the down fractal forms the Start Line (because the market breaks the fractal heading south), and the nearest upper fractal forms the Stop Line (because it's the nearest fractal opposite of the broken fractal).

According to the results of historical data tests, it turns out that it is better to use a small threshold, or breakdown value, measured in points, as a criterion for detecting fractal breaks when building ST Patterns. We don't want it to be too small or it will be irrelevant; nor too big or we will miss good trades. In recent years, this minimum-enough value has been 7 points for the EUR/USD pair. For the more volatile GBP/USD currency pair, the ideal breakdown threshold would be higher, and for the AUD/USD pair, it would be a little lower.

The **threshold of breakthrough** *must be configurable*.

For accurate calculation in real trading, you should increase the breakdown value by the size of the spread, which may be different for each broker. Often there is a difference between brokerage quotes and those that are displayed on the chart. This shift in values also needs to be taken into account in order to accurately calculate the entry price to the market. Such adjustments are needed for the price of Stop Orders, Limit Orders, and other price parameters.

Thus, positions will be opened with a pending order when price reaches a level that is **threshold of breakthrough** points above or below the level of the broken fractal, in the direction of the break. It is worth noting that such a way of entering the market can sometimes lead to unwanted slippage.

## Stop Line and Stop Loss

After a fractal is formed, and price breaks fractal, a price band (the Corridor) is formed by the Start and Stop Lines. It is important to set the Stop Loss Order at the level of the Stop Line. the protective Stop Order will be set exactly at the Stop Line (for this phase).

In the situation when the opposite fractal (meaning, the fractal pointing away from the direction of the trade) is fully formed before the moment of the fracture, and it is the fractal closest (in time) to the broken fractal, the Stop Order is set at its level. This is the simple case. You can see an example of this situation in the first Corridor (labeled with brown 1)

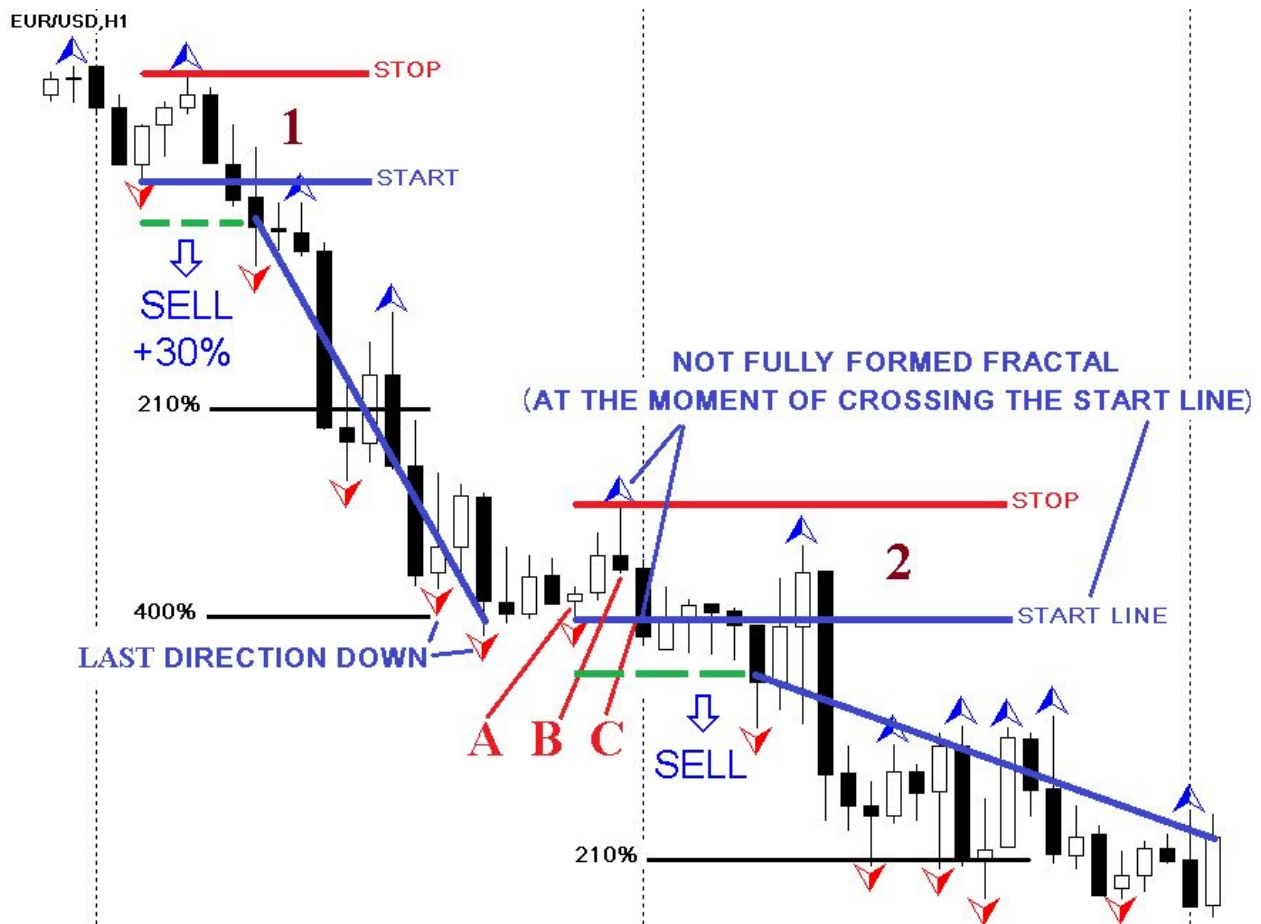


Fig 4.

Sometimes, however, there are situations when the nearest fractal is not fully formed and has only a central candle and one candle to the left of it. This situation is shown in the second Corridor (labeled with brown 2) in Figure 14. The letters A, B, and C in Figure 14 refer to the three most relevant fractals for this discussion.

discussion. Candle A is a Down Fractal (even though it's a white candle) that defines the Start Line. Candle B is an Up Fractal, but notice that it is not fully formed at the instant when candle C penetrates the Start Line. (Notice that candle C is not the trade trigger. The trade signal occurs when the subsequent black candle, five candles after C, penetrates the green dashed line which is drawn, imaginarily, at the threshold below the A fractal.)

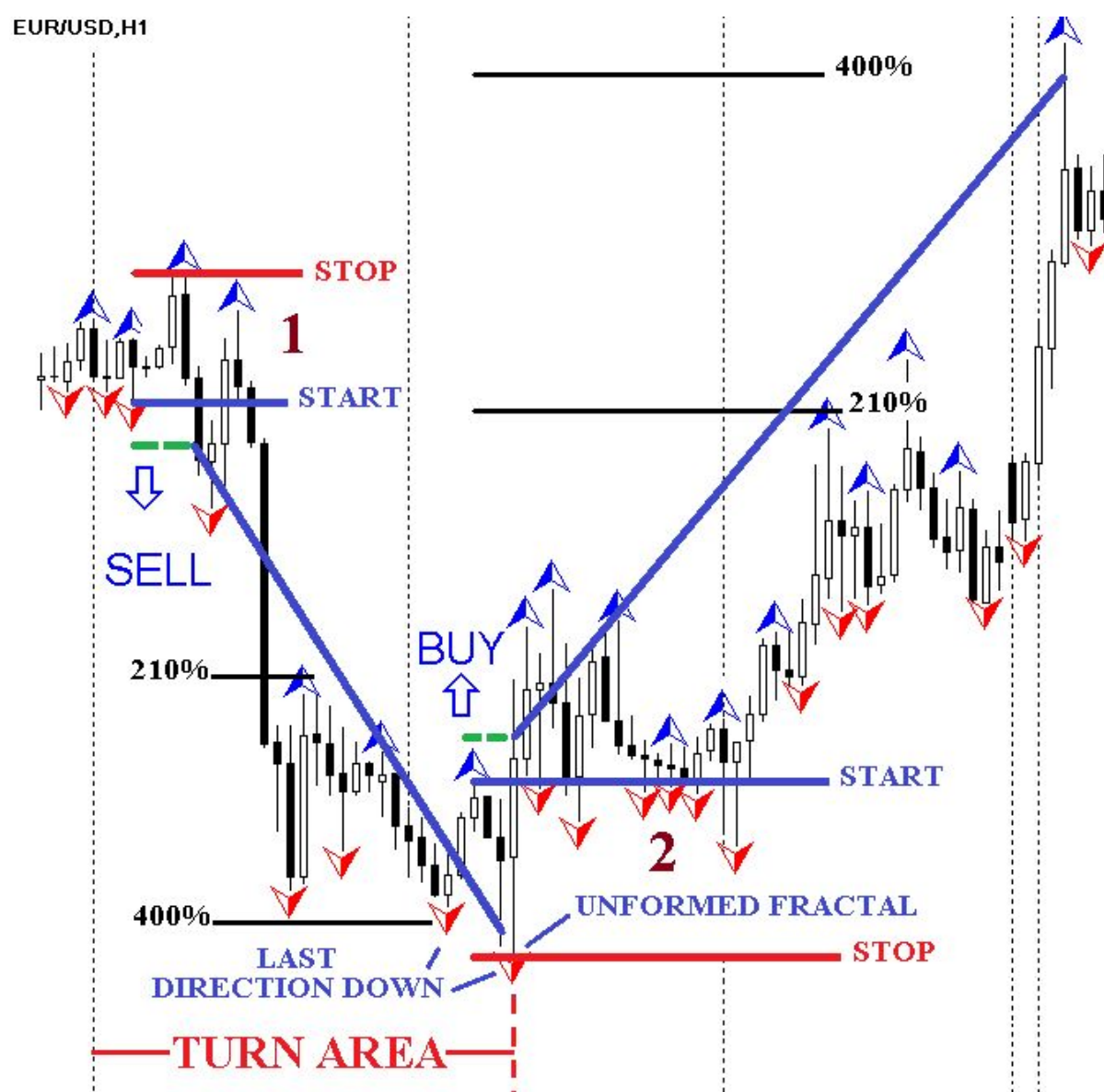
If the price (during the formation of candle C) breaks the candle A fractal in the direction in which the previous structural model was completed, then the Stop Line can be placed at the peak of the central candle (candle B), even though it is not yet a fully formed fractal.

It was determined that it is wise to ask if momentum may exist from the previous (last) fractal. When the previous (last) direction and the trade direction are not the same, it's better to put the stop loss at the more reliable level of a most recent fully formed fractal.

The direction of the previous fractal is shown with the arrow by the Fractal Direction ST Patterns MT4 indicator as opposed to the Fig 4. (LAST DIRECTION DOWN would be shown as a red arrow heading south-east.)

But if the fractal break is occurring in the same direction as the previous fractal direction (apparent momentum), the stop can be put on the less reliable level of the peak of the not fully formed fractal. That is the situation shown here when the Stop Line is set at the high of candle B.

There is one more detail we need to drill into. Only when there is no fully formed fractal in the turn area, we can set the Stop Line at the not fully formed fractal level. Fig. 5 illustrates this.



*Fig. 5.*

In other words, if you continue moving in the previous direction (the previous or last movement is when (before price crossing the start line) the last upper fractal is higher than the penultimate upper fractal or when the last lower fractal is lower than the penultimate lower fractal), you can place the Stop Line at the peak level of the opposite to fractured one, completely unformed fractal. When the price is reversed, the Stop Line is placed only at the level of the fully formed opposite fractal. And, only if there is no such in the turn area, the Stop Line can be placed at the level of the fractal that is not completed.

#### Previous direction

We say that the previous direction is up when the last upper fractal is higher than the previous upper fractal before the Corridor. And vice versa, we say the previous direction is down when the last lower fractal is lower than the previous down fractal before the Corridor.



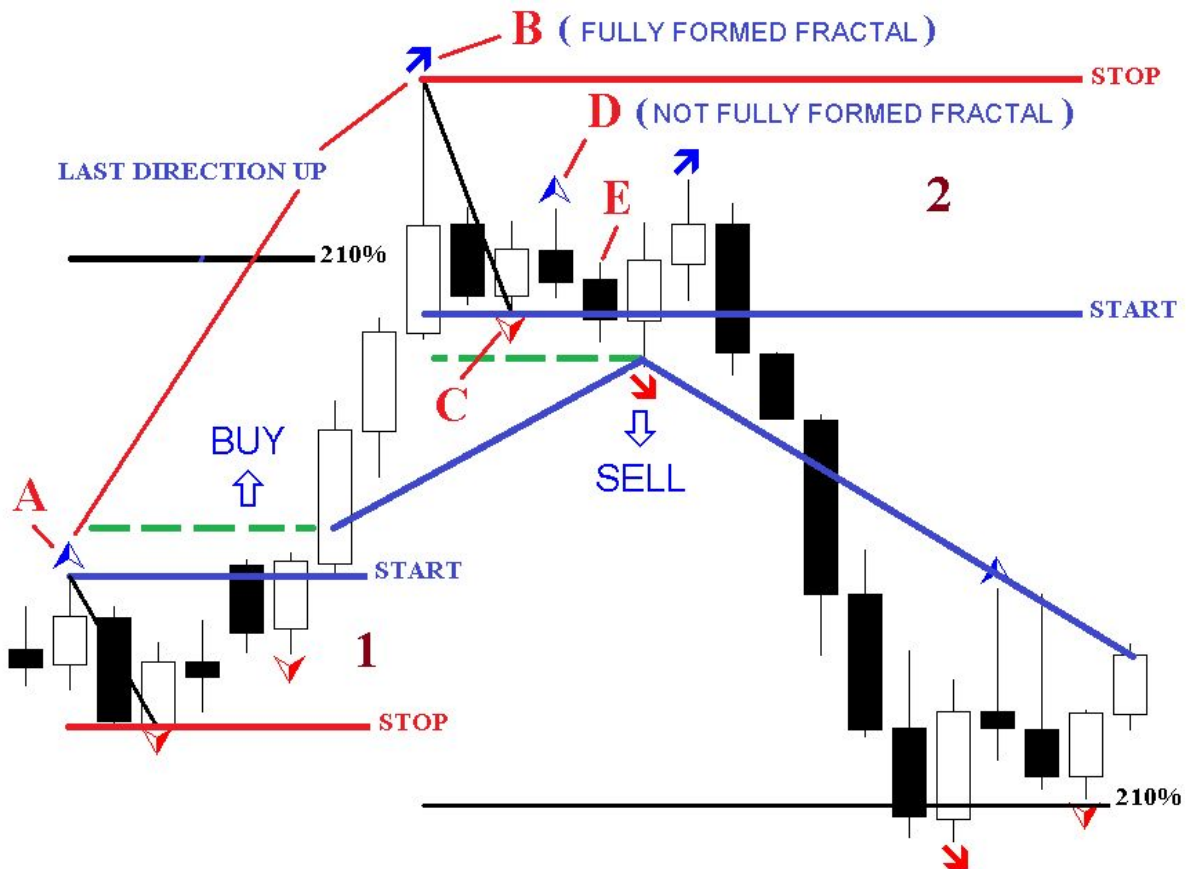


Fig. 6.

Let's consider a trade where the rule of setting stop loss on not fully formed fractal would have helped us. As can be seen in Fig. 6, when candles C and D formed a possible Corridor, we used candle B to set the Stop Line rather than candle D. We took three steps in making that decision. First, candle D is not a fully formed fractal because candle E breaks fractal C while candle E is still forming beside candle D. If D was a fully formed fractal, we would have used it for the Stop Line. Second, since it's not fully formed, we look to the previous fractal before the Corridor, which is fractal B, and we note its direction. Third, we compare that direction to the trade direction to see if there is possible momentum. Since the fractal break is downward, but the previous direction was upward, and since fractal D is not fully formed, we cannot use D to set the Stop Line so we instead set the Stop Line at fractal B. Notice what happens next. A short trade is barely triggered 7 pips below the break of the Start Line in the white candle after candle

E. Then on the next white candle, the market rises above the high of candle D. That would have triggered the protective stop undesirably because subsequently the market did head south as we hoped. Thankfully our Stop Line at fractal B was above the noise and we were able to ride the trade for a profit.

### Constructing New Pattern Precondition

If the previous Corridor should impact where the Start Line is drawn when a new Corridor is forming? The answer is to check if the previous pattern is “complete”.

### Pattern Completion Rules

A pattern can be completed a few ways, such as by hitting its Target, or reaching the stop loss (including times when you moved the stop loss to breakeven after the trade reached the 210% level), or if price breaks a new fully formed fractal in the opposite direction of a trade. Fractals that were crossed by price before a pattern is completed are not valid for building a new Start Line.

### Dealing With Reversals

Between the Start Line and the Target level of 400% there is an intermediate level of 210%. Once it is reached, significant price reversals can occur in the market.

**There are two supplemental steps** to take when prices reach the level of 210% of the height of the Fractal Corridor. First, move the Stop Loss Order to the level of the opening position (breakeven). Second, if a new Corridor appears and the fractal breaks in the opposite direction of your trade, you must close the position and open a new one in the direction of the breakout. (This is why I call the level “Close if Back 210%”)

Poltoratskiy, Vladimir. Trading Code is Open: ST Patterns of the Forex and Futures Exchanges, 100% Profit per Month, Proven Market Strategy, Robots, Scripts, Alerts (p. 35). Kindle Edition.

### The Starting Point for ST Patterns

A new ST Pattern should only be traded after the previous one is closed. Models follow each other, and to choose them correctly it is necessary to find a place on the chart where the end of the previous combination is evident. Otherwise, you can confuse a separate model with the inside of another complex pattern. The best starting point is seen on the market reversals or

after a strong price movement, which clearly ends the previous model. Variations of how new ST Patterns appear are shown in Fig. 7.

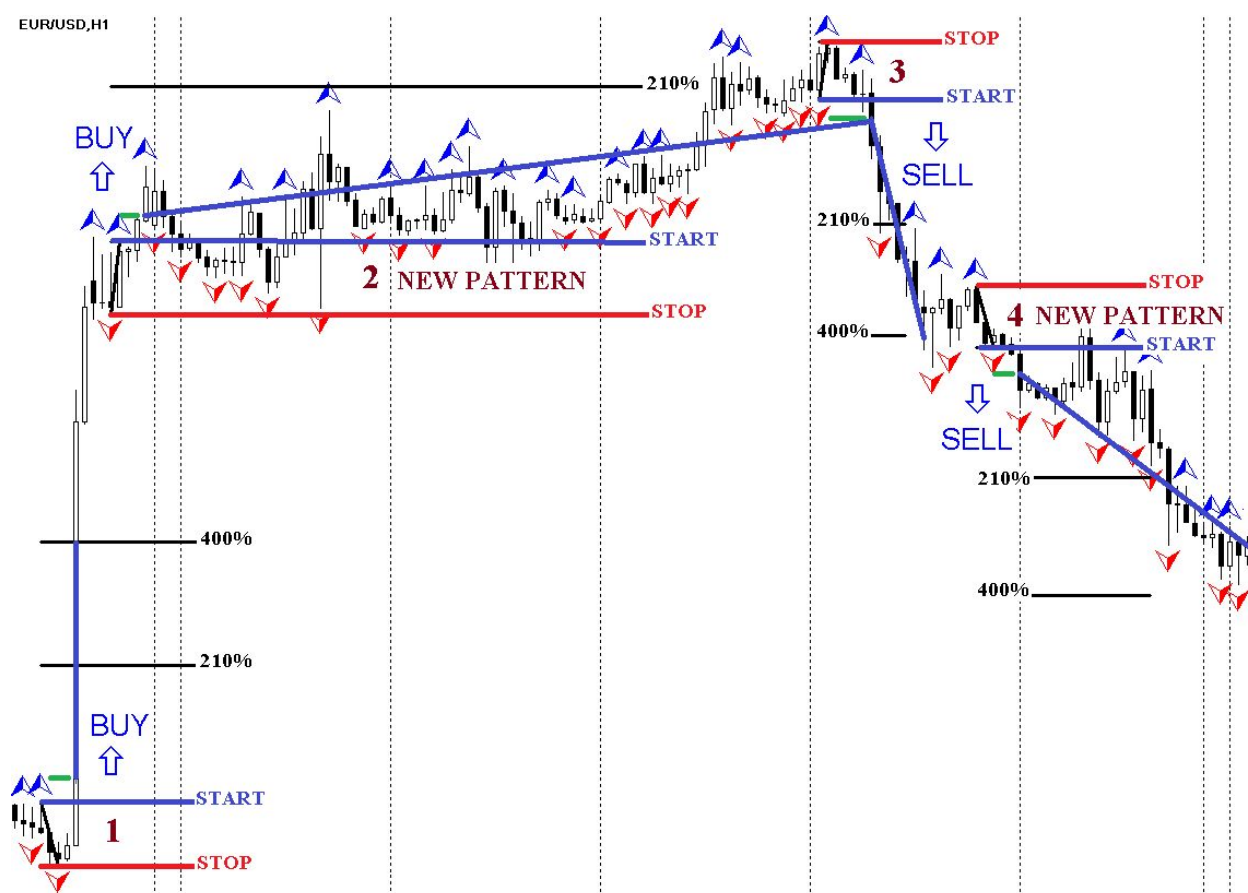


Fig 7.

After a strong upward movement of prices, the Direct Movement Pattern was formed with Corridor 1 at the bottom. Obviously, the Counter Direct Movement model that followed, with Corridor 2, is independent. Similarly, the model with Corridor 4 at the bottom is also not part of another ST Pattern, since the previous model reached its Target of 400%.