cylinders on the supporting apparatus. In this case, however, a suitably heavy rod is required to transfer the axial forces to the slurry wall apparatus, which is very expensive overall.

Prior art of this generic kind can be found in EP 0 811 724 B1 and DE 697 28 713 T2. These well-known trench cutters have lateral clamping elements on a base frame by means of which the base frame can be clamped onto the cutting frame and the base frame can be fixed to the ground. The cutting wheels are positioned on a vertically adjustable supporting unit, whereby the supporting unit having the cutting wheels can be pressed downward by means of vertically positioned hydraulic cylinders if the base frame is clamped firmly into the trench.

These well-known trench cutters have numerous different horizontally extendable clamping elements, since the major portion of the trench cutters is clamped against the walls of the trench. This also means that a significant proportion of the weight of the trench cutter is borne by the lateral walls of the trench. With the trench cutter's weight being laterally displaced in this way, thus it is no longer available as a pressing force for the cutting wheels. The pressing means having the hydraulic cylinders must be configured appropriately big so that these can compensate the lack of a pressing force of the weight of the trench wall apparatus on the one hand and can apply an additional pressing force on the cutting wheels on the other hand.

The **object** of the invention is to provide a trench wall apparatus and a method for creating a trench in the ground, whereby with a simple construction of the trench wall apparatus can apply a high pressing force on a soil excavation means in a particularly efficient way.

According to the invention, said object is achieved by a trench wall apparatus having the features of claim 1 on the one hand and by a method having the features of claim 14 on the other hand. Preferential embodiments of the invention are specified in the dependent claims.

The trench wall apparatus according to the invention is characterized in that the clamping means having at least two clamping elements and the at least one ~~clamping~~ actuating cylinder are positioned on an intermediate frame which clamping means is mounted along the base

frame such that it can slide, and that the pressing means is arranged between the intermediate frame and the base frame.

Furthermore, the method for creating a trench in the ground according to the invention is characterized in that the clamping means having the at least two clamping elements and the at least one ~~clamping~~ actuating cylinder are positioned on an intermediate frame which clamping means is mounted along the base frame such that it can slide, that by the clamping means the intermediate frame is clamped and fixed to the ground, and that the base frame with the soil excavation means is pushed downward by means of the pressing means.

A basic idea behind the invention lies in the fact that, when working with harder soil material, a large portion of the weight of the trench wall apparatus still acts on the soil excavation means, whereby an additional pressing force is primarily applied by the pressing means.

According to the invention, this is achieved in that the base frame on which the trench wall apparatus is hung or held farther remains connected to the soil excavation means, while only a relatively small intermediate frame, on which the plate-like clamping elements and the at least one ~~clamping~~ actuating cylinder are positioned, is being clamped against the surrounding walls of the trench. In this version, the base frame having the soil excavation means is mounted on the intermediate frame such that it can slide.

In this way a majority of the weight of the slurry wall apparatus is still able to act on the soil excavation means, even if the slurry wall apparatus is clamped in the trench. In this variation, the pressing means is positioned between the intermediate frame and the base frame such that through this a pressing force can be applied in addition to the weight of the base frame and the soil excavation means. Since the pressing means therefore only has an additional pressing force to apply, this pressing means can be made more compact and more cheaply overall.

One preferential embodiment of the slurry wall apparatus according to the invention consists of mounting the intermediate frame on an external side of the base frame such that it can slide. Suitable guiding and sliding means can be fitted on the external side of the base frame for the intermediate frame.

CLAIMS

1. Trench wall apparatus for creating a trench in the ground, having
   - a base frame;
   - at least one soil excavation means, which is positioned at a bottom end section of the base frame;
   - a holding means for suspending the trench wall apparatus at a top end section of the base frame;
   - a clamping means with at least two clamping elements lying on opposite sides and laterally displaceable, and at least one actuating cylinder, through which the clamping elements can be extended laterally against a wall of the trench in order to clamp at least one part of the trench wall apparatus in the trench, and
   - a pressing means by which a pressing force can be applied to the at least one soil excavation means,
   - wherein the clamping means with the at least two clamping elements and the at least one ~~clamping~~ actuating cylinder are positioned on an intermediate frame, which is mounted along the base frame to a box-like mounting section such that it can be displaced, and
   - wherein the pressing means is positioned between the intermediate frame and the base frame and has several pressing cylinders,
   - wherein
     the pressing cylinders are arranged in a tilted way toward the vertical, wherein the base frame with the soil excavation means can be pressed downward relative to the clamped intermediate frame when actuating the pressing cylinders, and
     ~~that~~ each tilted pressing cylinder is articulated to the base frame on the one hand and to one of the plate-shaped clamping elements on the other hand.

2. Trench wall apparatus according to claim 1,
   wherein
   the intermediate frame is mounted on an external side of the base frame such that it can be displaced.

3. Trench wall apparatus according to claim 1 and 2,

wherein
the intermediate frame (60) is mounted along the box-like mounting section (16) and guided such that it can be displaced.

4. Trench wall apparatus according to any one of claims 1 to 3,
wherein
the intermediate frame has a clamp-like base carriage, on which the clamping elements are mounted such that they can be displaced.

5. Trench wall apparatus according to claim 4,
wherein
several actuating cylinders are positioned between the clamping elements and the clamp-like base carriage.

6. Trench wall apparatus according to any one of claims 1 to 5,
wherein
several first actuating cylinders are provided that are positioned horizontally.

7. Trench wall apparatus according to any one of claims 1 to 6,
wherein
several second actuating cylinders are provided that are tilted toward the horizontal.

8. Trench wall apparatus according to any one of claims 4 to 7,
wherein
each clamping element is connected in a displaceable way to the clamp-like base carriage by at least one pivoted lever.

9. Trench wall apparatus according to claim 1,
wherein
the pressing cylinders are arranged above the intermediate frame.

10. Trench wall apparatus according to any one of claims 1 to 9,
wherein
the trench wall apparatus is designed as a trench cutter, wherein the soil excavation means has at least one cutting wheel.

11. Trench wall apparatus according to any one of claims 1 to 9,
wherein
the trench wall apparatus is designed like a trench grab, wherein the soil excavation means has a grabbing bucket.

12. Method for creating a trench in the ground using a trench wall apparatus according to any one of claims 1 to 11, wherein
- by means of a holding means a base frame of the trench wall apparatus is held at its top end section;
- by means of at least one soil excavation means, which is positioned at a bottom end section of the base frame, soil being excavated while forming the trench;
- by means of one clamping means at least two clamping elements lying on opposite sides are extended laterally against a wall of the trench by at least one actuating cylinder, wherein at least one part of the trench wall apparatus is clamped in the trench, and
- by means of a pressing means a pressing force is applied to the at least one soil excavation means,
- wherein the clamping means with the at least two plate-like clamping elements and the at least one ~~clamping~~ actuating cylinder are positioned on an intermediate frame, which is mounted along the base frame to a box like mounting section such that it can be displaced;
- wherein the intermediate frame is clamped in the trench and is fixed in regard to the soil by the clamping means, and
- wherein the base frame with the soil excavation means is pressed at the bottom section downward by means of the pressing means having several pressing cylinders,
- wherein
the pressing cylinders are arranged in a tilted way toward the vertical, wherein the base frame with the soil excavation means is pressed downward relative to the clamped intermediate frame when actuating the pressing cylinder, and
~~that~~ each tilted pressing cylinder is articulated to the base frame on the one hand and to one of the plate-shaped clamping elements on the other hand.