

Fig. 1

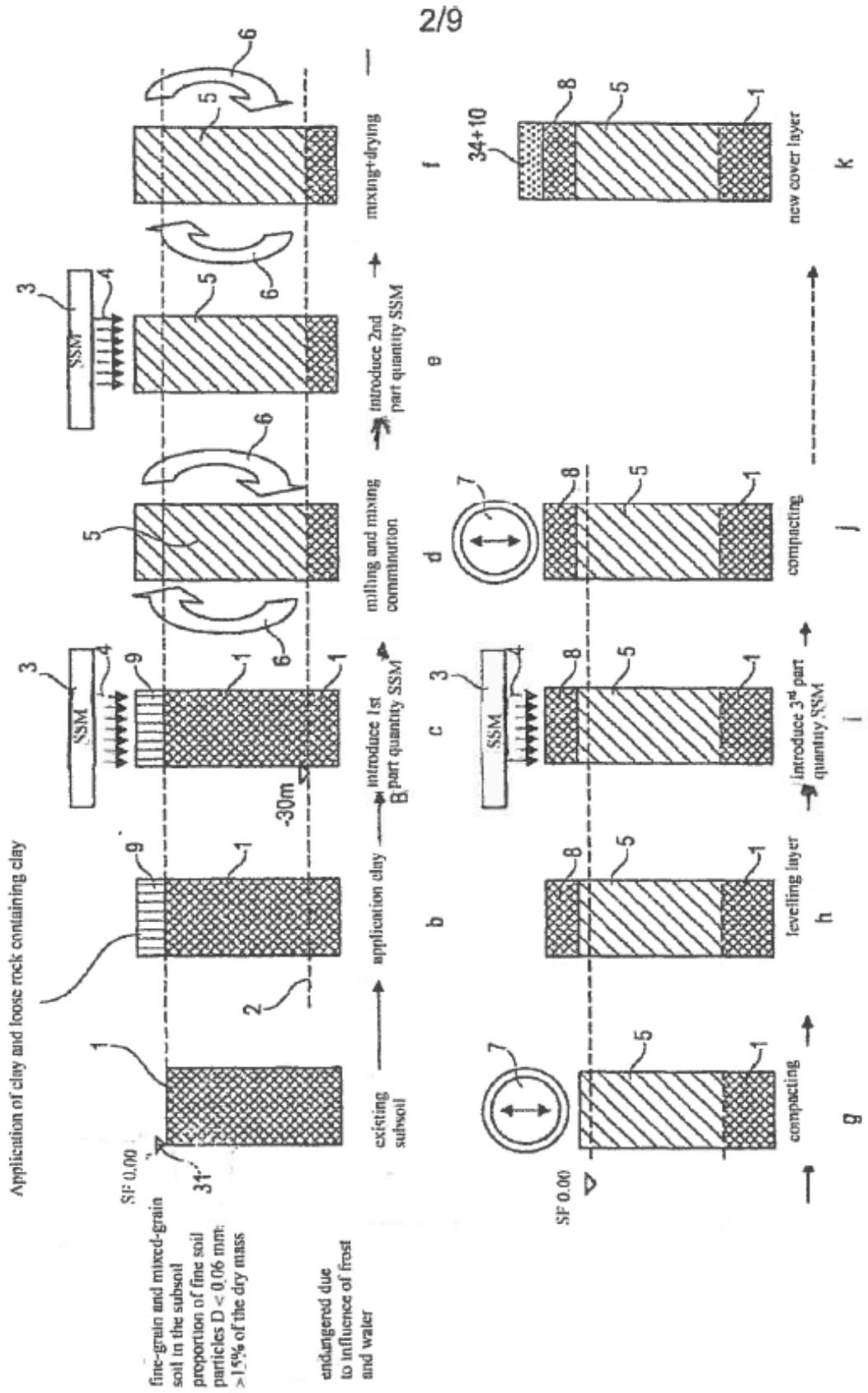
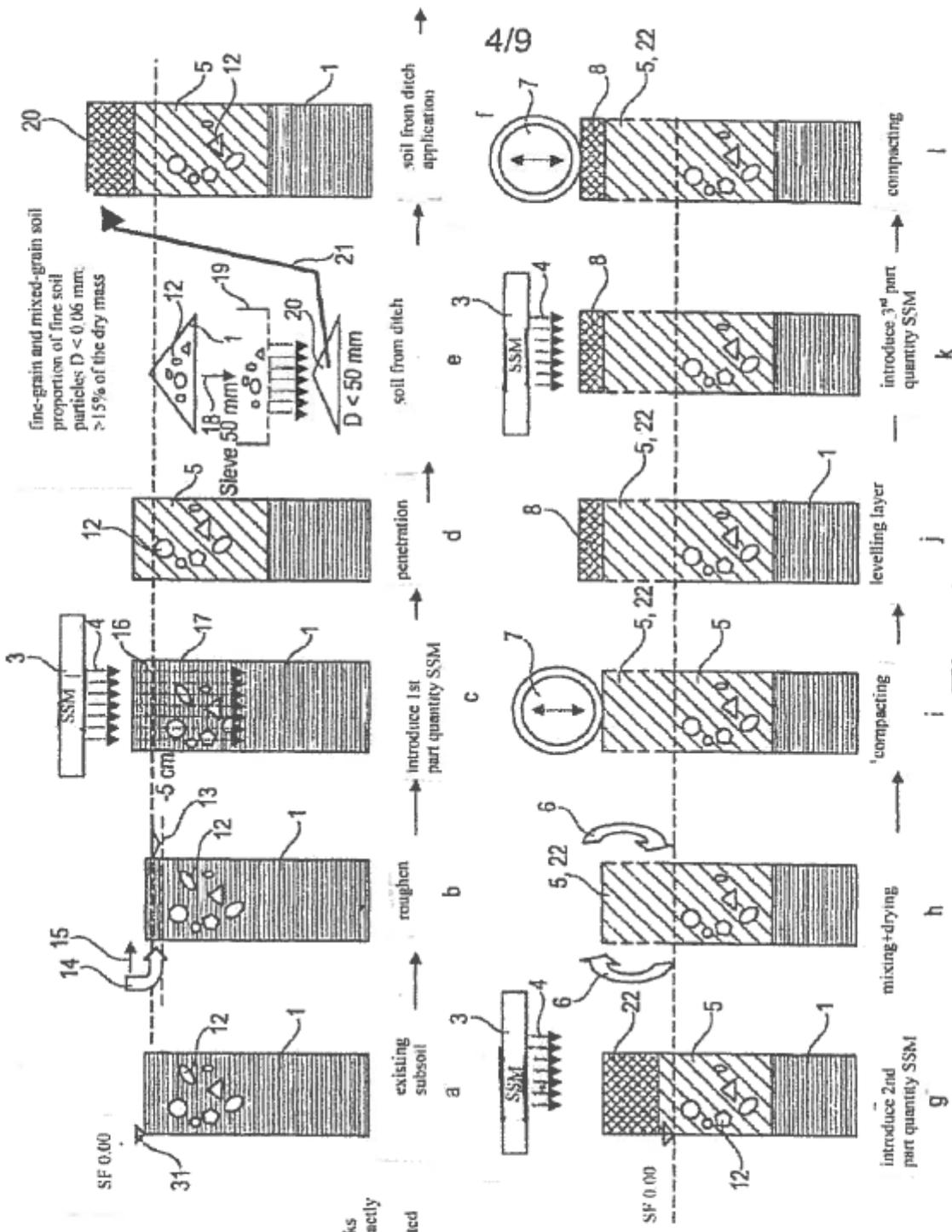


Fig. 2





fine-grain and mixed-grain soil  
 proportion of fine soil  
 particles  $D < 0.06$  mm:  
 $> 15\%$  of the dry mass

fine-grain and mixed-grain  
 soil in the subsoil  
 proportion of fine soil  
 particles  $D < 0.06$  mm:  
 $> 15\%$  of the dry mass

with water permeability  
 endangered due  
 to influence of frost  
 and water

With large stones and blocks  
 which are embedded compactly  
 into the fine soil particles  
 and are not to be comminuted

Fig. 4

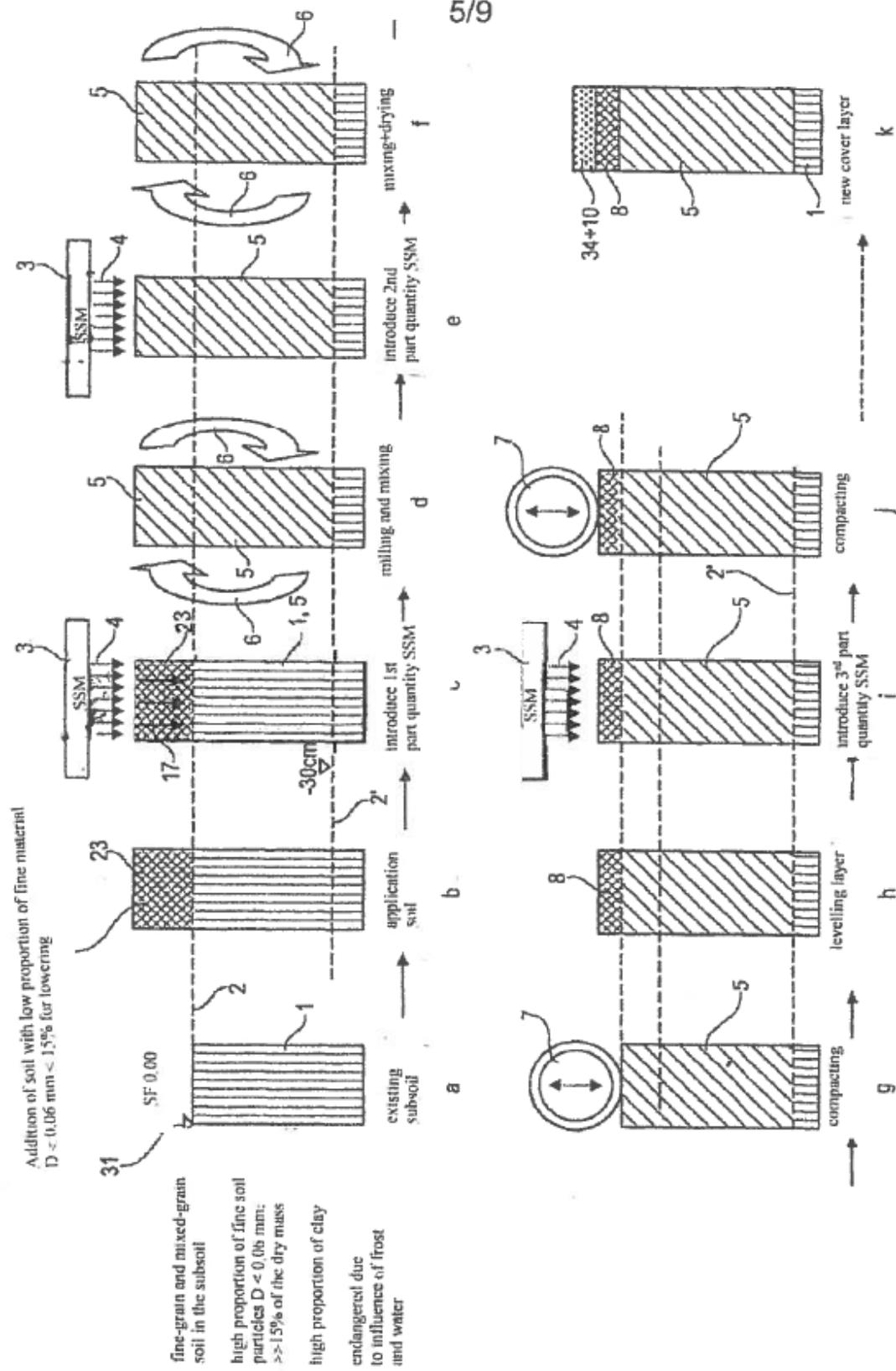


Fig. 5

Addition of soil without and with low proportion of fine materials

Addition of soil with low proportion of fine material  
 $D < 0.06 \text{ mm} < 15\%$  for lowering

fine-grain and mixed-grain soil in the subsoil

high proportion of fine soil particles  $D < 0.06 \text{ mm}$ :  $\gg 15\%$  of the dry mass

high proportion of clay

endangerst due to influence of frost and water

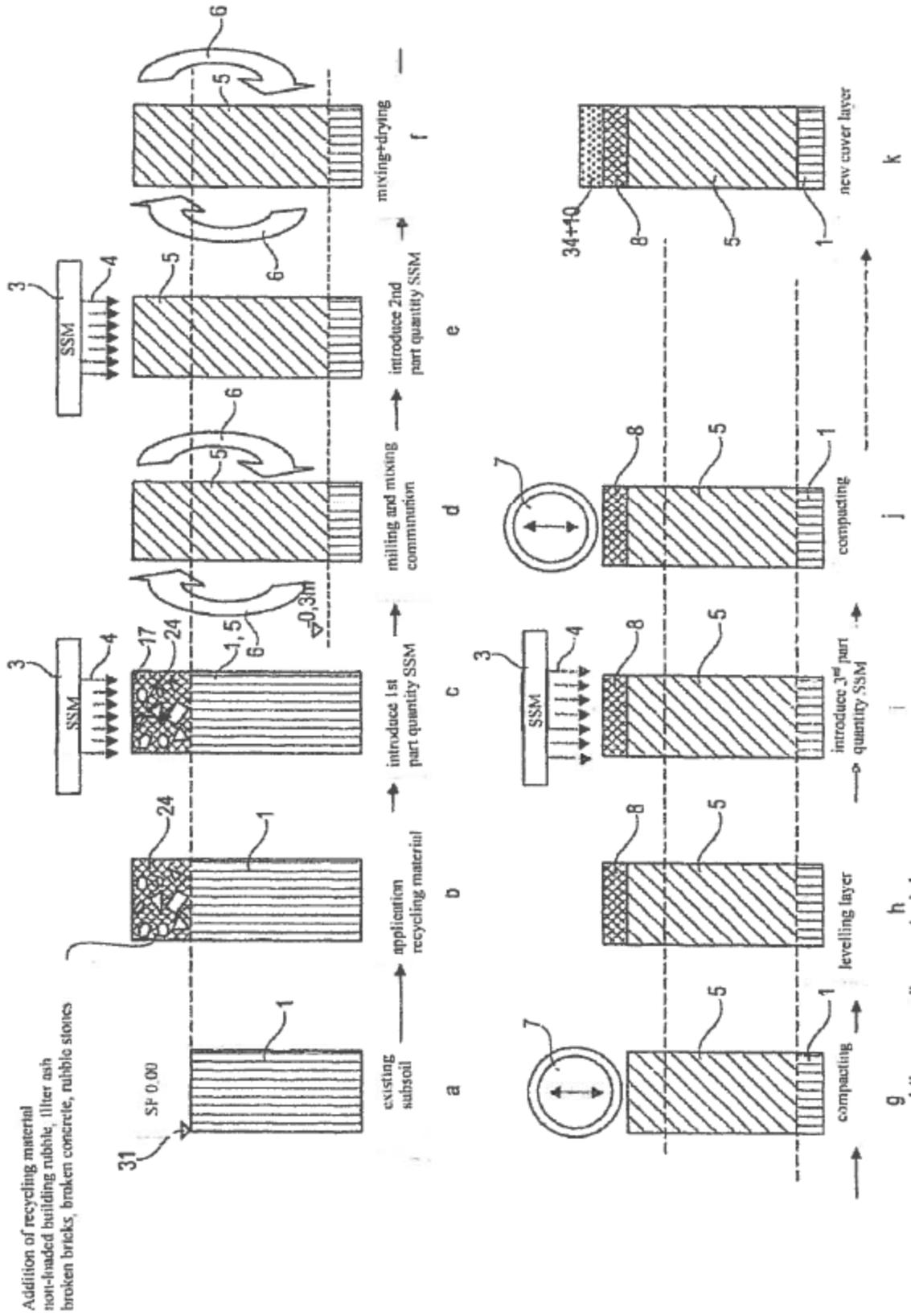
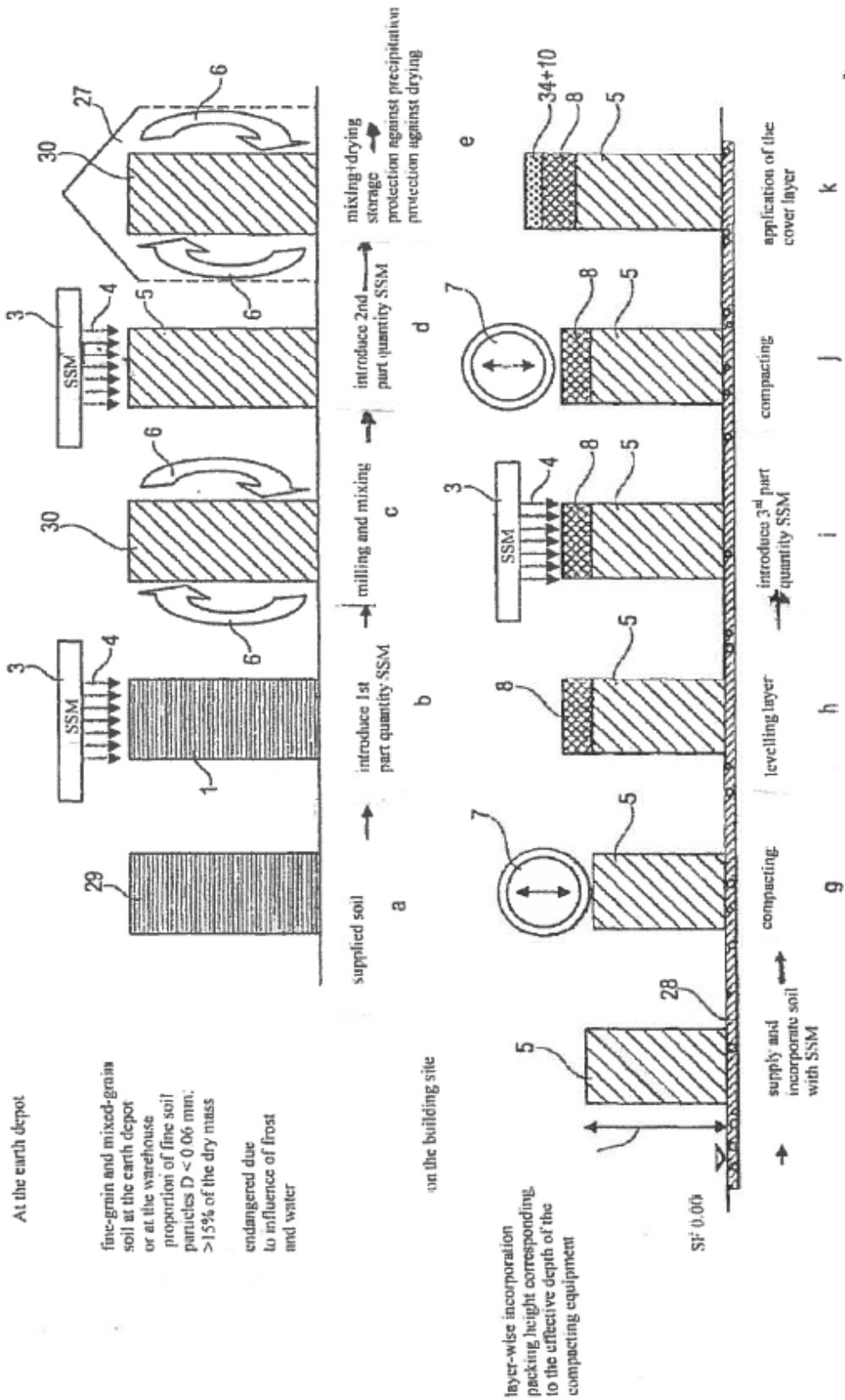


Fig. 6



At the earth depot

fine-grain and mixed-grain soil at the earth depot or at the warehouse proportion of fine soil particles  $D < 0.06 \text{ mm}$ :  $> 15\%$  of the dry mass endangered due to influence of frost and water

on the building site

layer-wise incorporation packing height corresponding to the effective depth of the compacting equipment

SF 0.07h

f

Fig. 7

Construction and building sequence with GF:

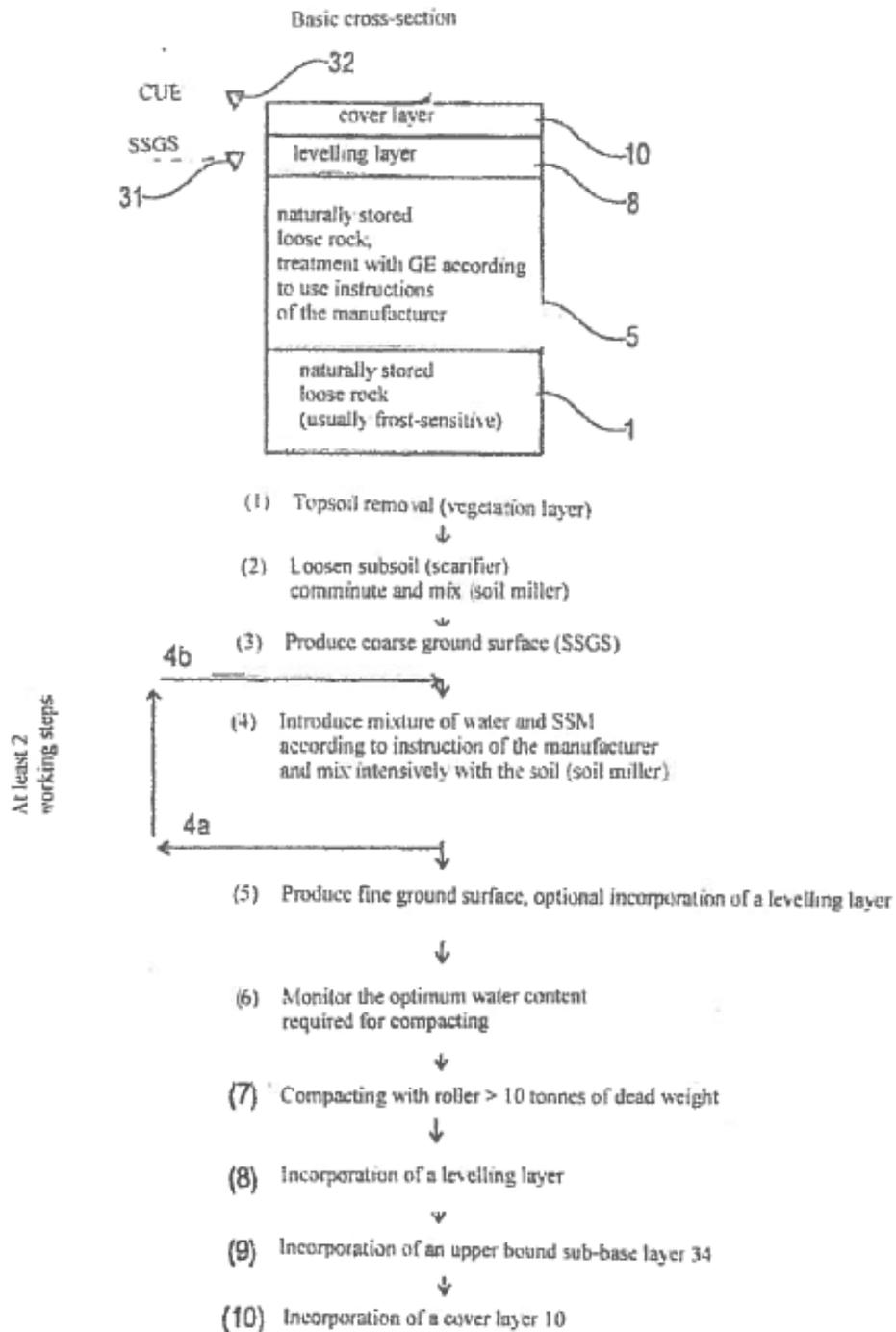
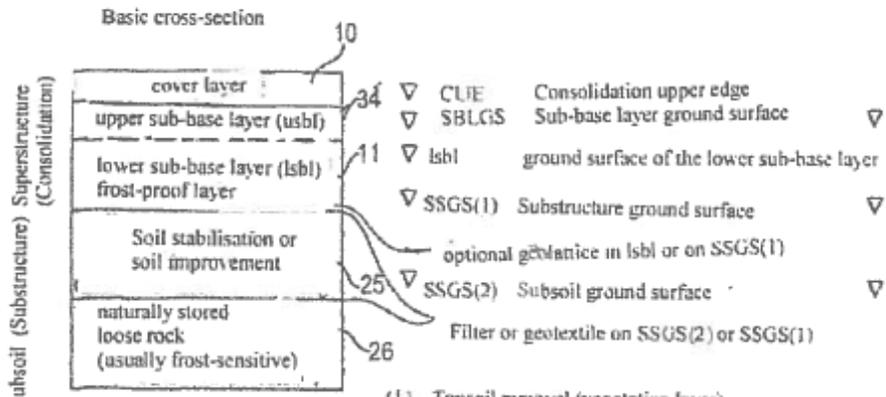


Fig. 8

Example: Road building in excavation, subsoil: cohesive loose rock (usually frost-sensitive)  
 traditional construction and building sequence



Required modulus of deformation

$E_{V2}$  [MN/m<sup>2</sup>]:

$120 \text{ MN/m}^2 \leq E_{V2} \leq 180 \text{ MN/m}^2$

- (1) Topsoil removal (vegetation layer)
- (2) Soil removal up to SSGS(1) or SSGS(2) (release, load, transport, tip)
- (3) Test of the load-bearing capacity of the subsoil
- (4) Soil stabilisation or soil improvement of the subsoil
- (5) Produce ground surface (SSGS(2) or SSGS(1))
- (6) Compacting the subsoil
- (7) Incorporation of filter layer on SSGS(1) or SSGS(2) (alternative geotextile)
- (8) Incorporation of frost-proof layer as lower sub-base layer
- (9) Compacting of the upper sub-base layer
- (10) Incorporation of an upper bound sub-base layer 34 for example asphalt sub-base layer
- (11) Incorporation of the cover layer 10 for example asphalt cover layer

Fig. 9  
 (State of art)