Aug. 29, 1939. A. L. MADILL 2,170,929

TAMPING PLUG

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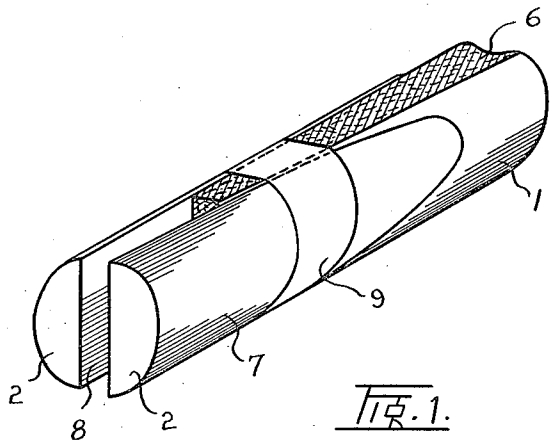


FIG. 1.

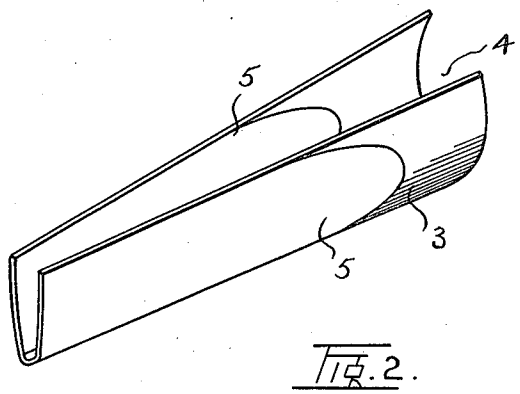


FIG. 2.

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TAMPING PLUG

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4 Claims. (Cl. 102—11)

My invention relates to improvements in tamping plugs which are particularly adapted for use in blasting rock and the like. The objects of the invention are to provide a plug which will not blow out of the hole; to provide a plug of short length which will reduce the length of hole to be drilled and one which will eliminate the need for clay tamping. Further objects are to provide means within the plug for damping the flame incidental to the firing of the powder and also to provide a plug of such efficiency that a smaller charge may be used to break down a given amount of rock than that normally used.

The invention consists of a plug formed of two or more coacting wedge pieces, one of which is of a compressible fibrous nature, as will be more fully described in the following specification and shown in the accompanying drawing, in which:

Fig. 1 is a general view of the invention.

Fig. 2 is a general view of the centre wedge sleeve prior to filling with fibrous material.

In the drawing like characters of reference indicate corresponding parts in each figure.

The plug is preferably made up in three sections, the first or entering section indicated by the numeral 1 and the outer sections indicated by the numeral 2. The entering section 1 is preferably formed as a relatively stiff cardboard sheath 3, see Figure 2, which is substantially cylindrical at its leading end as at 4 and is flattened on opposite sides as at 5 to form a tapered wedge. This substantially cylindrical sheath 3 is tightly packed with a fibrous material 6, such as paper pulp, which is preferably impregnated with lime or any other material capable of quenching flame.

The outer sections 2 are wedge shaped as shown with their outer sides radial to the longitudinal axis of the plug as at 7 and their inner sides 8 plane and parallel to the flattened surfaces of the sheath 3. These sections may be of wood, compressed pulp or other suitable material.

The parts of the plug are preferably held in their relative positions by a light band of adhesive paper 9, so that they may be easily inserted into the drill hole and brought into contact with the charge. When the plug is in position and the fuse wire is properly placed the outer sections are driven by tamping until the adhesive paper band 9 is broken and the several wedge sections 1 and 2 are firmly held in position. On the shot being fired, the tapered end of the entering section 1 is driven by the force of explosion between the outer members 2 to such a distance as to preclude further endwise movement, when the radial thrust of the components locks the plug in nonslipping position against the wall of the hole, the flame from the blast in striking the adjacent end of the packing is to a great extent quenched, so that as the rock surrounding the hole is fractured and falls, little or no flame passes beyond the working face of the rock.

By virtue of the three wedge member construction sufficient frictional surface is obtained in about one third the plug length of a two member plug and since the sheath is packed with a fibrous material no other packing is required between the plug and the charge, therefore a saving of several inches is made in the length of hole required to be drilled. Furthermore, the positive lock of the wedge structure so seals the hole that normally eleven sticks of powder are as effective as thirteen sticks tamped in the regularly accepted way, thus again effecting considerable saving in drilling and tamping.

What I claim as my invention is:

1. A tamping plug comprising three wedge shaped sections coacting to form a substantially cylindrical body when assembled and consisting of one centre and two outer sections, the centre section being formed with a sheath of relatively stiff material filled with paper pulp.

2. A tamping plug comprising three wedge shaped sections coacting to form a substantially cylindrical body when assembled and consisting of one centre and two outer sections, the centre section being formed with a sheath of relatively stiff material tapered at one end and substantially cylindrical at the other, said sheath being packed with a compressible material.

3. A tamping plug comprising three wedge shaped sections coacting to form a substantially cylindrical body when assembled and consisting of one centre and two outer sections, each of said sections being of fabricated fibrous material, the centre section being wedge shaped at one end and substantially cylindrical at the other and consists of a relatively stiff sheath packed with a fibrous material, the wedge shaped portion of said centre section terminating in the periphery of the cylindrical portion.

4. A tamping plug comprising three wedge shaped sections coacting to form a substantially cylindrical body when assembled and consisting of one centre and two outer sections, the centre section being formed with a sheath U-shaped in cross section and made of relatively stiff material tapered at one end and substantially cylindrical at the other, said sheath being packed with a compressible material.

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