CLAIMS

We Claim:

1. A mixer for mixing a powder with a liquid, the mixer comprising:

a mix housing to accommodate a mixture of the powder and the liquid;

a liquid delivery housing coupled to the mix housing to provide the liquid ~~thereto~~to the mix housing via a jet; and

a powder delivery housing coupled to the mix housing and intersecting the liquid delivery housing, wherein the powder delivery housing is substantially perpendicular to the liquid delivery housing and configured for ~~gravity feeding~~dropping the powder directly from the powder delivery housing ~~to~~ into the liquid of the jet in the mix housing, the mix housing comprising only the jet and a powder delivery inlet to enable the mixture of the powder and the liquid; and ~~wherein the mixer is configured to induce a vibration therein for substantially avoiding an occluding cake build-up of the mixture thereat~~

a vibration mechanism coupled directly to the powder delivery housing.

2. The mixer of claim 1 wherein the powder is cement.

3. The mixer of claim 1 wherein the liquid is water.

~~4. The mixer of claim 1 wherein the liquid traverses the liquid delivery housing in jet form.~~

~~5. The mixer of claim 4 being of a venturi configuration.~~

~~6. The mixer of claim 1 further comprising a vibration mechanism coupled to the mixer for substantially avoid an occluding cake build-up of the mixture thereat.~~

4. The mixer of claim 1 wherein the liquid delivery housing is located below the powder delivery housing.

~~7~~5. The mixer of claim ~~6~~ 1 wherein the vibration mechanism is one of an impact vibrator, a piston vibrator, a rotating vibrator, a reed-type vibrator, and an ultrasonic vibrator.

~~8~~6. A mixer for mixing a powder with a liquid, the mixer comprising:

a mix location to accommodate a mixture of the powder and the liquid;

a liquid delivery inlet coupled to the mix location to provide the liquid ~~thereto~~to the mix location via a jet;

a powder delivery inlet coupled to the mix location and intersecting the liquid delivery inlet, wherein the powder delivery inlet is substantially perpendicular to the liquid delivery inlet and configured for ~~gravity feeding~~dropping the powder directly from a powder delivery housing into the liquid of the jet in the mix location, wherein the only inlets to the mix location are the liquid delivery inlet and powder delivery inlet; and

a vibration mechanism coupled directly to ~~one of the mix location, the liquid delivery inlet, and~~ the powder delivery inlet.

~~9~~7. The mixer of claim ~~8~~ 6 wherein the vibration mechanism is configured to impart vibrations for avoiding a substantially occluding cake build-up of the mixture in the mixer.

~~10~~8. The mixer of claim ~~9~~ 7 wherein the vibrations imparted by the vibration mechanism avoid a substantially occluding cake build-up of the mixture in the mixer~~ing is achieved~~ by liquefying of the cake build-up.

~~11~~9. The mixer of claim ~~10~~ 8 wherein the liquefying of the cake build-up from the vibrations imparted by the vibration mechanism significantly increases a size of an opening of the powder delivery inlet to the mix ~~inlet~~location.

~~12~~10. The mixer of claim ~~10~~ 9 wherein at least one wall of one of the mix ~~inlet~~ location, the liquid delivery inlet and the powder delivery inlet is constructed from one of metal, plastic, and a composite material.

~~13~~11. The mixer of claim ~~8~~ 6 wherein the vibration mechanism is configured to impart vibrations to promote mixing of the powder and liquid.

~~14~~12. A vibration mechanism coupled to a powder delivery housing, the powder delivery housing coupled to a mix~~er~~ housing for mixing a powder with a liquid ~~in a mix housing~~, the mix housing coupled to a liquid delivery housing ~~and a powder delivery housing~~ substantially perpendicular to the powder delivery housing for delivery of the liquid to the mix housing via a jet, the ~~liquid~~ powder delivery housing ~~of the mix housing of the mixer and~~ configured for ~~gravity feeding~~dropping the powder ~~thereto~~directly from the powder delivery housing into the liquid of the jet in the mix housing, the vibration mechanism configured to impart vibrations for substantially eliminating an occluding cake build-up of the mixture outside of the mix housing, wherein gravity and the liquid jet provide the only force for mixing the powder with the liquid inside of the mix housing.

~~15~~13. The vibration mechanism of claim ~~14~~ 12 being one of an impact vibrator, a piston vibrator, a rotating vibrator, a reed-type vibrator, and an ultrasonic vibrator.

~~16~~14. The vibration mechanism of claim ~~14~~ 12 wherein the ~~eliminating occurs~~vibrations imparted by the vibration mechanism substantially eliminate an occluding cake build-up of the mixture outside of the mix housing by liquefying of the cake build-up.