CLAIMS

1. Apparatus for processing materials, said apparatus comprising a passage having a series of communicating sections each of which has an inlet end and an outlet end and each of which is at an angle with respect to the section which precedes it, an impact wall at the outlet end of each section, and a reciprocating piston for pressurising said material so that, in use, it flows into the inlet end of the first section of said passage, emerges from the outlet end of the first section, impacts on the impact wall at the outlet end of the first section, changes direction and then flows into the second section; said apparatus comprising a first part that defines surfaces and a second part that defines surfaces corresponding to the surfaces of the first part, said passage being formed between said corresponding surfaces of the first and second parts, and said apparatus further comprising a bias mechanism that urges the second part towards the first part.

2. Apparatus according to claim 1, wherein said sections are at right angles to one another.

3. Apparatus according to claim 1 and wherein the first part comprises a sleeve with an internally stepped bore to provide alternating axially facing surfaces and inwardly facing surfaces the dimensions of which increase from one end of the bore to the other, and wherein the second part comprises a bobbin which matches the shape of the bore and has axially facing surfaces alternating with outwardly facing surfaces, the dimensions of the outwardly facing surfaces increasing from one end of the bobbin to the other, there being gap between each outwardly facing surface of the bobbin and the inwardly facing surface of the sleeve which lies outwardly of it.

4. Apparatus according to claim 1 and wherein the first part comprises a sleeve with an internally stepped bore to provide alternating axially facing surfaces and radially inwardly facing cylindrical surfaces the diameters of which increase from

one end of the bore to the other, and wherein the second part comprises a bobbin which matches the shape of the bore and has axially facing surfaces alternating with cylindrical surfaces, the diameters of the cylindrical surfaces increasing from one end of the bobbin to the other, there being an annular gap between each cylindrical surface of the bobbin and the cylindrical surface of the sleeve which lies radially outwardly of it.

5. Apparatus according to claim 4, wherein the widths of the annular gaps decrease in the direction from the smaller end of the sleeve and bobbin towards their larger ends.

6. Apparatus according to claim 4, wherein the bias mechanism comprises means selected from a spring or a hydraulic cylinder for forcing the axially facing surfaces of the bobbin against the axially facing surfaces of the sleeve.

7. Apparatus according to claim 4, wherein the bobbin has a sealing element at its smaller diameter end which fits into the outlet end of a passageway that leads from the means which pressurises the material, said element, in one of its positions, sealing said outlet.

8. Apparatus according to claim 7, wherein said passageway comprises two or more sections, each section being of a smaller cross-sectional area than the section upstream of it.

9. Apparatus according to claim 4, wherein said bobbin has skew grooves in its largest diameter cylindrical surface whereby, in use, the material flowing in these grooves causes the bobbin to turn.

10. Apparatus according to claim 1, wherein the reciprocating piston is disposed in a barrel having an end wall and a side wall, said apparatus including means for reciprocating the piston in alternating forward pressurising strokes and retraction

strokes during the latter of which material is forced from the barrel through an outlet into said flow passage.

11. Apparatus according to claim 10, wherein the barrel has an inlet which is located in the side wall of the barrel and wherein said outlet is in an end wall of the barrel, the inlet being between the outlet and the piston when the piston is at the end of its pressurizing stroke.

12. Apparatus according to claim 11 and including an inlet valve having an open position in which organic product or other material is permitted to enter the barrel and a closed position in which flow of organic product or other material to the barrel is prevented, and a control system which maintains said inlet valve closed until after the piston has commenced a retraction stroke.

13. Apparatus according to claim 10, wherein the means for reciprocating the piston comprises a hydraulic or pneumatic cylinder in which there is a drive piston, a piston rod attached to the drive piston the piston, rod extending through an end wall of the pneumatic or hydraulic cylinder, across a gap and being attached to the piston in the barrel.