Candidate's answer Paper B (Electricity/Mechanics)

1. A mixer comprising a drum (1) having a wall (13), an open end (3), a closed end (2), and at least one mixing rib (8) formed by a recess in the exterior of the wall (13), there being further provided a lid (4) for closing the open end (3) of the drum (1) characterized in the recess having dimensions to provide a hand hold for the drum (1).

2. *A mixer according to claim 1* operable *to be rolled manually on the ground.*

3. *A mixer according to claim 1 or 2, wherein said lid (4) and drum (1) have co-operating threads.*

4. *A mixer according to any preceding claim, wherein the lid (4) has a concavity (12) in its central portion, and a seal is provided between said lid (4) and said drum (1).*

5. *A mixer according to claim 4, wherein the seal is an O-ring.*

6. A mixer as claimed in any previous claim wherein the drums (1) interior has a smooth continuous surface.

7. A mixer as claimed in any previous claim wherein the drum (1) and at least one mixing rib (8) is integrally formed.

8. A mixer as claimed in claim 7 wherein the mixing rib (8) and drum (1) are formed from polypropylene or high density polyethylene.

9. A mixer as claimed in any previous claim wherein the drum (1) comprise a rebate (10) for engaging with the lid (4).

10. A mixer as claimed in any of the previous claims wherein the ribs are generally evenly distributed about the circumference and extend along a substantial length of the drum.

11. A mixer as claimed in any previous claim wherein the mixing rib is of helical configuration.

12. A mixer according to claim 11 wherein the pitch of the helical mixing rib (8) is equal to the height of the drum (1) multiplied by the number of mixing ribs (8).

European Patent Office
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Dear Sirs,

European Patent Application No:
Applicant: Maestromix
Title

In response to the Examining Division's communication pursuant to A 96(2) EPC, R 51(2) EPC, we hereby file in triplicate a new set of claims 1 to 12 to replace the ones currently held on file.

The applicant will be happy to bring the description into conformity once a new set of claims has been agreed upon.

Amendments and Article 123(2) EPC

The precharacterising portion of claim 1 is based on claim 1 as filed.

The precharacterising part of claim 1 has been amended to show that the mixing rib is formed by a recess in the exterior wall. Support for this amendment can for example be found on p 2 line 28, page 3 l 21-25 and Fig. 4 of the drawings.

In addition the feature of the recesses being dimensioned to provide hand holds for the drum has been introduced. Support for this can be found on page lines 28 to 31 and lines 25 to 26 with specific suitable dimensions given on page 3 lines 4 to 5.

The skilled person would from this references clearly and unambiguously consider that any dimension that would provide hand holds is included and not just the specific values on p 3 l 4-5 or for the very specific purpose of rotating the drum or for emptying.

He would also realise that the comment on p 2 l 30-31 clearly defines the recesses being hand holds and preferably accommodating four adult fingers up to the middle finger.

In addition the reference to a cylindrical wall in claim 1 as filed has been modified to a reference to a wall.

Upon reading the specification the skilled person would understand that the mixer has a form allowing it to roll and that a cylindrical wall as specifically disclosed is an example of such. He would also understand that other shapes which permit rolling is equally intended.

Therefore he would directly and unambiguously realise that the cylindrical form is not essential, nor indispensable to the operation of the mixer and further that a different shape would not require any modification to other features.

In accordance with TI 94/84 (Guidelines C-VI, 5. 4) this amendment thus does not contravene Article 123(2) EPC.

Likewise the reference in claim 1 as filed to the mixing rib being helical has been remo

The specification on page 3 line 21 clearly show that the ribs can be any configuration as long as the recesses are suitable as hand holds. Specifically, p 3 lines 26-28 describes ribs being axially aligned.

Hence, on reading this the skilled person will directly and unambiguously understand that the helical shape is not essential, necessary for the function and that no modification is required to other features for a different configuration. Hence, this amendment does not contravene A 123(2).

It is thus submitted that the amendments to claim 1 do not contravene A 123(2) EPC.

Amended claim 2 corresponds to previous claim 2 but has been amended to the drum being operable to be rolled on the ground rather than adapted to it.

The skilled man would from the description understand that the drum must be suitable for rolling on the ground but not necessarily modified or adapted to do so.

Claim 3 to 5 correspond to original claims 3 to 5.

A new claim 6 has been introduced directed to the smooth interior surface of the drum. Support can be found on page 4, l 15-16 which implicitly discloses a smooth continuous surface by saying that the smooth surface has few recesses.

New claim 7 has been introduced directed to the drum and mixing rib being integrally formed. Support can be found on page 2, l 27-28 with the words integrally formed being substantially the same as in one piece.

New claim 8 is directed to the use of polypropylene or polyethylene. Support can be found on page 2, l 22.

A new claim 9 has been inserted directed to the rebate. Support can be found on page 3 lines 15-17.

New claim 10 has been inserted directed to the distribution and extent of the ribs. Support can be found on page 3 lines 11-14 bearing in mind that the ribs are formed by the recesses.

New claim 11 is directed to the helical configuration of the mixing rib. Support is e.g. in claim 1 as filed.

New claim 12 is directed to the pitch of the helical ribs. Support can be found on page 3, l 22-24. The skilled person will readily understand the extension to the case of more or less than 4 ribs.

It is thus submitted that the amendments do not extend the disclosure beyond the application as originally filed and thus do not contravene A 123(2) EPC.

Furthermore the features of former claim 1 are included in new claim 1 except for inessential features. It is submitted that the scope of the amended claim 1 is within the scope of the search and thus that R 86(4) EPC has not been contravened.

Comments on Novelty – A 54(1) EPC, A 54 EPC

D1 discloses a mixer for manual use having a cylindrical body with internally attached ribs and an entry hole opposite a closed end.

However, D1 does not disclose mixing ribs being formed by a recess in the external wall but rather describes ribs being screwed onto the internal wall of the drum. Consequently D1 does not disclose the recesses being dimensioned as hold alls either.

D2 discloses a mixer for mixing paint. The mixer is driven by a motor.

D2 however does not disclose any recesses in the external wall having dimensions to provide hand holds for the drum. Rather the groves described are of very narrow dimension of 5 mm clearly preventing any fingers entering the groove and thus preventing their use as hand holds.

Claim 1 as amended is thus submitted to be novel over each of D1 and D2 individually.

Comments on Article 84 EPC

In response to the examiner's comments in section 5 regarding original claim 2, claim 2 as amended describes a drum operable to be rolled on the ground.

It is submitted that this is a clear functional definition on the limitations in the design of the drum which must be suitable for rolling on the ground for the preferred use. This limits the design choices for the drum as there for example cannot be any major protrusions, it should not be flat etc.

The applicant thus respectfully disagrees with the examiner and submits that claim 2 does not claim a result to be achieved but is rather a short functional definition of design limitations.

Comments on Article 52(1) EPC and Article 56 EPC – Inventive step

D2 is considered as the closest prior art because it is structurally is the closest to the invention and has the most features in common with claim 1.

As mentioned under novelty D2 discloses the features of the preamble of claim 1.

D2 differs from claim 1 in that it does not have recesses forming the mixing ribs being dimensioned to provide hand holds for the drum.

A technical effect of this is that manual mixing is practical with a drum according to claim 1. A problem posed to the skilled person in view of D2 and the differentiating feature is hence how to provide a mixer suitable for manual mixing.

If the skilled person considering this problem would consider D1 he would see that manual mixing is possible by rolling the mixer drum on the ground.

He would however see no hint or suggestion that the mixer drum should be anything but smooth and in order to improve the ability of the ball to roll he is more likely to remove the groves of the drum as they are no longer required (they are used for mounting the drum in the frame) but may get caught on ground irregularities.

Neither would he see any suggestion to provide any form of hand holds and he would not consider providing any further hand holds as the mixer of D2 already is provided with handles.

He would thus be led away from increasing the dimension of the grooves towards removing them completely. The ribs of D1 are clearly only on the inside of the drum resulting in a smooth outer surface.

It should be noted that the groves have dimensions of 5 mm suitable for mounting in the frame but clearly unsuitable for providing a hand hold.

It is thus submitted that amended claim 1 is clearly inventive over D2 and the combination of D2 and D1 starting from D2.

If the examiner in view of the amendments disagree with D2 as being the closest prior art because D1 is functionally closer to the invention of claim 1 as well as having the same general use, the following is submitted.

D1 does not discloses the ribs being formed by recesses in the exterior wall, the recesses being dimensioned to provide hand holds for the drum

An advantage provided by the differentiating feature is that the drum can be manually handled much easier.

A problem facing the skilled person is thus how to improve the suitability of the drum for being manually handled.

It is submitted that the skilled person in view of this problem could but would not consider D2. D2 is published in a magazine called "Eradicate Poverty Organisation" which would not be a publication a person skilled in concrete mixers would consider.

Even if he did consider the publication D2 discloses a mixer for mixing very small quantities of paint and further he would see a mixer specifically developed for motor driven operation.

Nevertheless, if the skilled person did consider a combination the only feature of D2 addressing the problem are the handles (the grooves are far to narrow to be used).

The skilled person would not include these features in the mixer of D1 because the handles would stick out thus impairing the ability of the drum to roll, and even if he did, he would end with a result different from that of claim 1 as amended.

It is thus submitted that claim 1 is clearly inventive over the combination of D1 and D2 starting from D1.

Hence, it is submitted that claim 1 is inventive over the cited prior art, individually or in combination.

Claims 2 to 12 are all dependent on claim 1 and it is submitted that these claims are novel and inventive over the cited prior art, at least by their dependency on claim 1.

It is submitted that the claims as amended meets the requirements of the EPC. Merely as a precaution, oral proceedings under Article 116 EPC are requested should the examiner consider refusing the application.

Yours sincerely
Signature of A. Turney

Notes to Client/ Examiner

The application contains many advantageous features towards which the amendment could be directed.

However in order to cover the further developments I have directed my amendment to the hand hold feature, as this is included in all embodiments and in my opinion clearly novel and inventive.

Further features could be individually be protected in divisionals which is however rather costly.

Nevertheless the feature of the ribs being smooth may validate individual protection as it is included in all embodiments and has the substantial advantage of making cleaning of the drum easy.

I have extended the scope of claim 1 in order to protect the further developments. The examiner may well object to the deletion of the wall being cylindrical. However this amendment is necessary to cover the frusto-conical shape of the further developments.

Also it objected to the deleted feature can be reinserted – even after grant as this will limit the scope of the claim and hence not contravene A 123(3) EPC. Thus the amendment is not risky although it may not be accepted.

I have included in claim 1 that the recesses and ribs are part of the same feature as I do not believe there is any direct or implicit disclosure of recesses used as hold alls and not forming mixing ribs. This would also require a thick wall which seems disadvantageous.