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(54) WASTE COMPACTOR

(57) The invention relates to a waste compactor, which includes a frame (10), to which compaction equipment (11) and a sliding plane (12) are arranged for a waste bin (13). The frame (10) is essentially free of protruding parts and it is dimensioned to be smaller than the cabinet for installing the waste compactor in the cabinet.

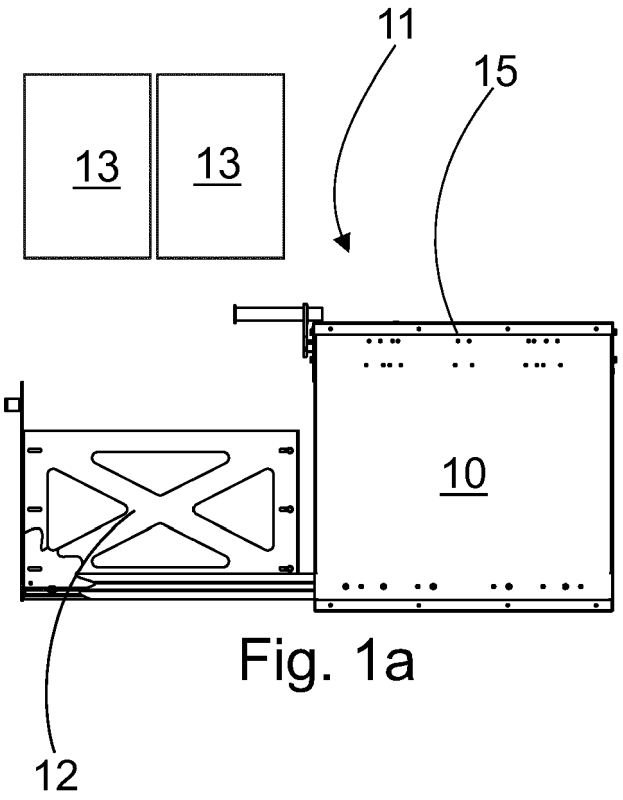

Fig. 1a

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Description

[0001] The invention is related to a waste compactor that includes a frame, to which compaction equipment and a sliding plane are arranged for a waste bin.

[0002] US3827352 discloses a waste compactor, wherein an electric compactor is fixedly fitted to the frame. The frame has a sliding plane, wherein a space for a waste bin has been arranged. The plane is pulled out from the frame and the waste is dropped to the waste bin. After this, the plane together with the waste bin is pushed back in and waste is compacted using the compactor. Compaction allows an efficient filling of the waste bin.

[0003] The waste compactor is large and therefore requires a lot of space. In addition, the sliding plane is inefficiently utilised.

[0004] An object of the invention is to provide a novel waste compactor, which is simpler and more versatile than before, yet easier to locate in a kitchen, for example. The characteristic features of the waste compactor according to this invention become apparent from the appended claims. The waste compactor according to the invention together with its compaction equipment is arranged as a compact unity that is easy to locate in a suitable place. Compaction equipment requires little space, yet its compaction length is extensive. The compaction equipment and the sliding plane are arranged inside the frame so that the use of the compactor does not stress other surrounding structures.

[0005] The invention is described below in detail by referring to the appended drawings, which illustrate the embodiment of the invention, in which

Figure 1a is a right lateral view of a waste compactor according to the invention,
Figure 1b is a left lateral view of the waste compactor of Figure 1a,
Figure 1c is a rear view of the waste compactor of Figure 1a,
Figure 1d is a front view of the waste compactor of Figure 1a,
Figure 1e is a top view of the waste compactor of Figure 1a,
Figure If is a diagonal front view of the waste compactor of Figure 1a, partly unassembled,
Figure 2 illustrates the fitting of the waste compactor according to the invention in the cabinetry,
Figure 3a is a right lateral view of the cover of the waste compactor according to the invention together with the compactor,
Figure 3b is a diagonal bottom view of the cover of Figure 3a,
Figure 3c is a front view of the cover of Figure 3a,
Figure 3d is a top view of the cover of Figure 3a,
Figure 4a is a diagonal top view of the compactor of the waste compactor according to the invention,
Figure 4b is a front view of the compactor of Figure 4a,
Figure 4c is a top view of the compactor of Figure 4a,
Figure 4d is a right lateral view of the compactor of Figure 4a,
Figure 4e is a diagonal top view of the compactor of Figure 4a, with a slide detached,
Figure 4f is an exploded view of the compactor of Figure 4a.

[0006] Figures 1a - If illustrate a waste compactor according to the invention, seen from different directions. The waste compactor includes a frame 10, to which compaction equipment 11 and a sliding plane 12 are fitted for a waste bin 13. According to the invention, the frame 10 is essentially free of protruding parts and it is dimensioned to be smaller than the cabinet for installing the waste compactor in the cabinet. This is shown in Figure 2, wherein the waste compactor is fitted in a lower cabinet. Advantageously, the waste compactor is so low that it also fits in a sink cabinet.

[0007] In Figure 1a, the sliding plane 12 is shown pulled out. Here, the sliding plane 12 is arranged as a boxlike structure for the waste bin 13. The waste bin is then kept securely in place. At the same time, the sliding plane becomes stiff. The sliding plane is supported by its bottom corners with telescopic slides 14, which are also sturdy and require little space. In Figure If, the sliding plane 12 is still unconnected to the slides 14.

[0008] Figures 3a - 3d illustrate the cover 15 included in the waste compactor according to the invention, shown separated from the rest of the frame in Figure If. Advantageously, the cover 15 has a capsular structure, which contributes to the stiffness of both the cover and the entire waste compactor. Stiffness is beneficial, since the compaction equipment 11 includes two or three compactors 16. In other words, the compaction zone covers the entire frame area. At the same time, it is possible to collect more than one fraction of waste. In practice, the waste compactor is preferably fitted with a waste bin per each compactor. On the other hand, in an embodiment of three compactors, for example, it is possible to use one waste bin at two compactors and a half smaller waste bin at the third compactor.

[0009] In the embodiment shown, the compactor 16 is a manual scissors mechanism 17. The scissors mechanism fits in a small space, yet a long compaction movement is achieved with it. Manual operation can be implemented in a simple way and excessive forces are avoided. At the same time, anyone can take a waste compactor in use without any electrical work.

[0010] The compactor 16 includes a drive shaft 18 that extends in the longitudinal direction of the frame 10. The drive shaft is thus easily accessible. Advantageously, the drive shaft 18 is shared by each compactor 16. In this way, by operating one drive shaft, all compactors are operated simultaneously. The compaction length is determined by the fullest waste bin. On the other hand, the characteristics of the compactor can be arranged differ-

ent, in which case it is possible to even out the differences of different waste fractions. For example, fitting different parts of the scissors mechanism enables stroke adjustment. The parts can also be adjustable, which allows the user to adjust the operation of compactors, if desired.

[0011] According to Figure 3b, the scissors mechanism 17 is supported to the slides 19 fitted in the cover 15 included in the frame 10. A slide contributes to the stiffness of the cover and simultaneously functions as a guide for the scissors mechanism. In addition, compactors can be easily located in the cover via slides. The embodiment proposed has two compactors, but Figure 3d also includes connection points for a third compactor.

[0012] Figures 4a - 4f illustrate a compactor according to the invention, seen from different directions. Here, the scissors mechanism 17 includes two parallel arms 20, which are fitted on both sides of the slide 19. In this way, the construction is simple, yet sturdy. Oval holes 21 in the slide form guides, to which the upper arms of the scissors mechanism are set movably. In the lower part of the scissors mechanism, there is a curved pressure plate 22.

[0013] Arranged as an extension to the drive shaft 18, there is a crank 23, which is fitted on the face of the cover 15. This makes it easy to use the compactor. In Figures 1a and If, the pin 24 of the crank 23 is in the operating position. The pin is arranged to be movable relative to the crank arm. This makes it possible to push the pin to a storage position between uses, allowing closing of the lower cabinet door. Figure 3b illustrates a locking pin 25 fitted in the crank 23, which can be used to lock the scissors mechanism in a desired place. This avoids re-expansion of compacted waste. The support plate has several openings 26 for the locking pin. The maximum length of the crank 23 is half of the width of the cover 15. Therefore, the crank can be used although the waste compactor would be fitted against the wall or even in a cabinet having the same width as the waste compactor.

[0014] If desired, the door panel can be connected to the sliding plane so that the waste compactor is integrated to the cabinet. The cabinet can also be a worktop equipped with wheels, for example, in which case the waste compactor can be moved to a desired place.

[0015] Almost all components of the waste compactor are sheet metal components, which are easy to manufacture. A stiff construction is achieved by bending sheet metal components and combining different parts. Still the total weight is kept moderate. The frame is preferably assembled using pop rivets.

Claims

1. Waste compactor including a frame (10), to which compaction equipment (11) and a sliding plane (12) are fitted for a waste bin (13), **characterised in that** the frame (10) is essentially free of protruding parts and it is dimensioned to be smaller than the cabinet for installing the waste compactor in the cabinet.

2. Waste compactor according to Claim 1, **characterised in that** the sliding plane (12) is arranged as a boxlike structure for the waste bin (13).

3. Waste compactor according to Claim 1 or 2, **characterised in that** compaction equipment (11) includes two or three compactors (16).

4. Waste compactor according to Claim 3, **characterised in that** the compactor (16) is a manual scissors mechanism (17).

5. Waste compactor according to Claim 3 or 4, **characterised in that** the compactor (16) includes a drive shaft (18) that extends in the longitudinal direction of the frame (10).

6. Waste compactor according to Claim 5, **characterised in that** the drive shaft (18) is shared by each compactor (16).

7. Waste compactor according to any of Claims 4 to 6, **characterised in that** the scissors mechanism (17) is supported to the slides (19) fitted in the cover (15) included in the frame (10).

8. Waste compactor according to Claim 7, **characterised in that** the scissors mechanism (17) includes two parallel arms (20), which are fitted on both sides of the slide (19.

9. Waste compactor according to any of Claims 5 to 8, **characterised in that**, arranged as an extension to the drive shaft (18), there is a crank (23), which is fitted on the face of the cover (15).

10. Waste compactor according to Claim 9, **characterised in that** the crank (23) includes a pin (24) for operating the crank.

11. Waste compactor according to Claim 10, **characterised in that** the pin (24) is arranged to be movable relative to the crank (23).

12. Waste compactor according to any of Claims 9 to 11, **characterised in that** the crank (23) includes a locking pin (25) for locking the compactor (16) in the middle of the work movement.

13. Waste compactor according to any of Claims 9 to 12, **characterised in that** the maximum length of the crank (23) is half of the width of the cover (15).

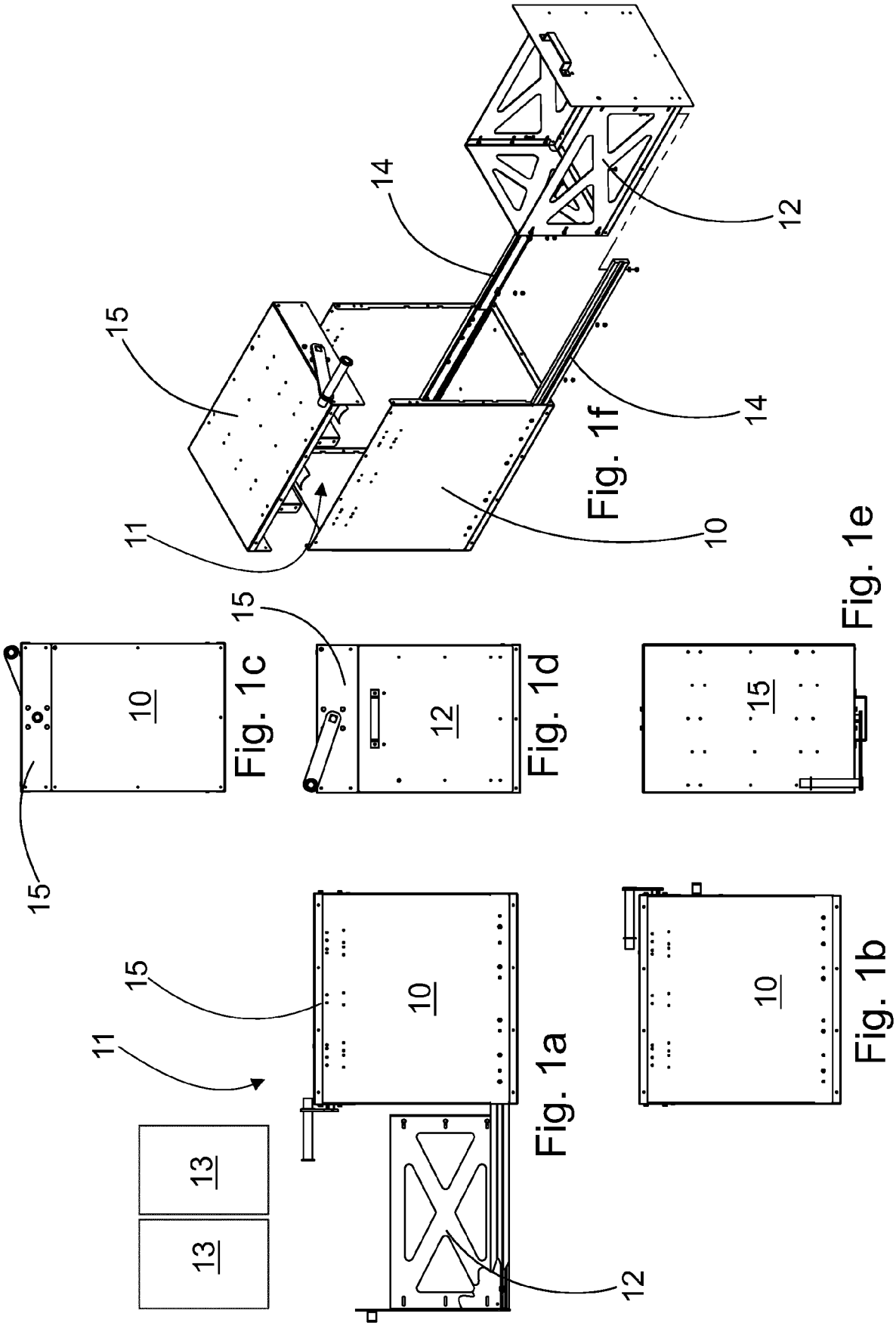
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Fig. 1a
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Fig. 1b
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Fig. 1f

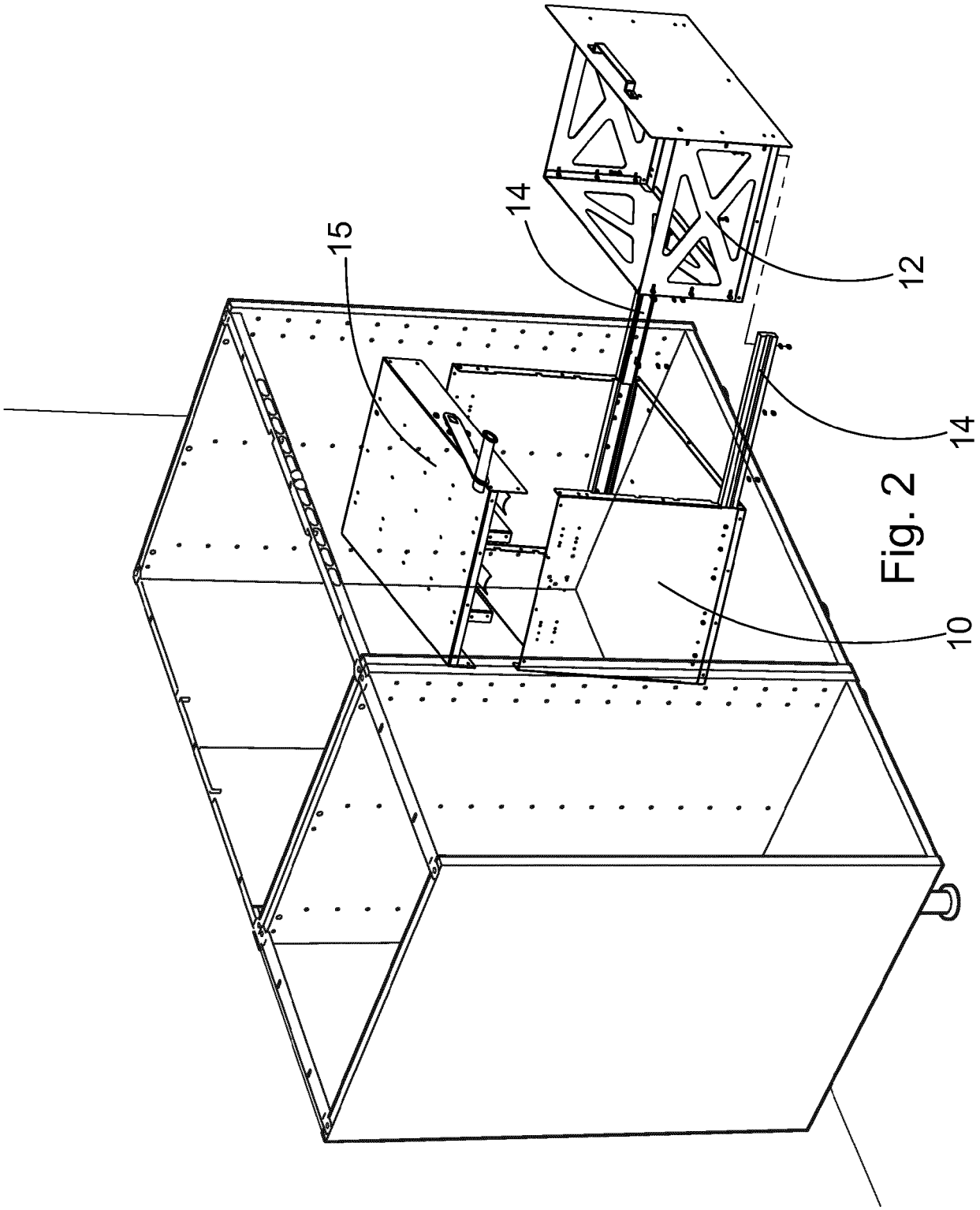

Fig. 2

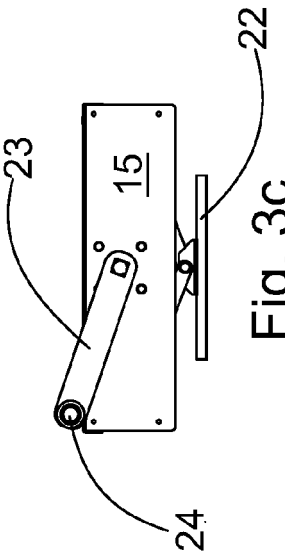

Fig. 3c

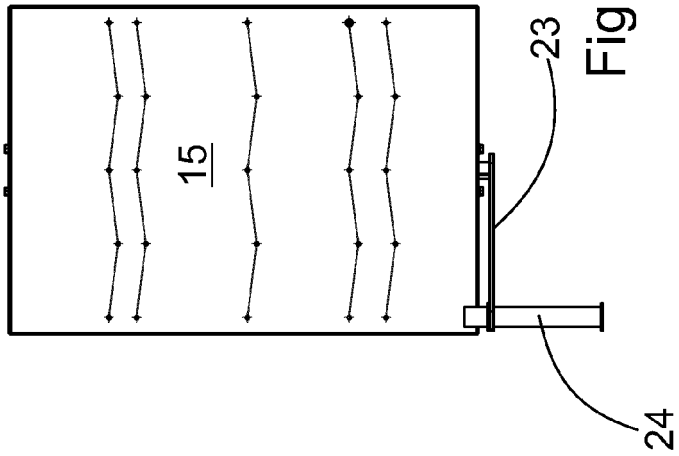

Fig. 3d

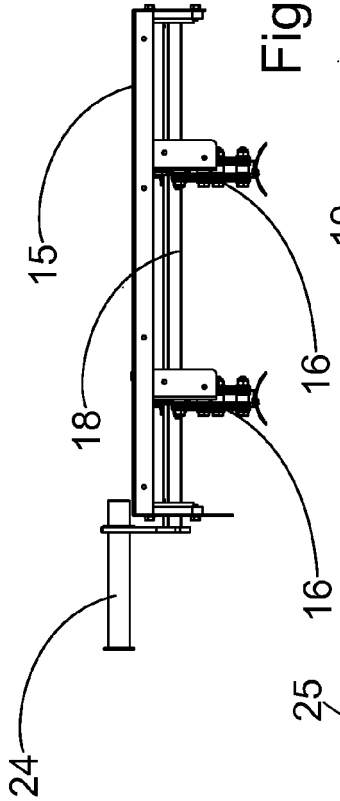

Fig. 3a

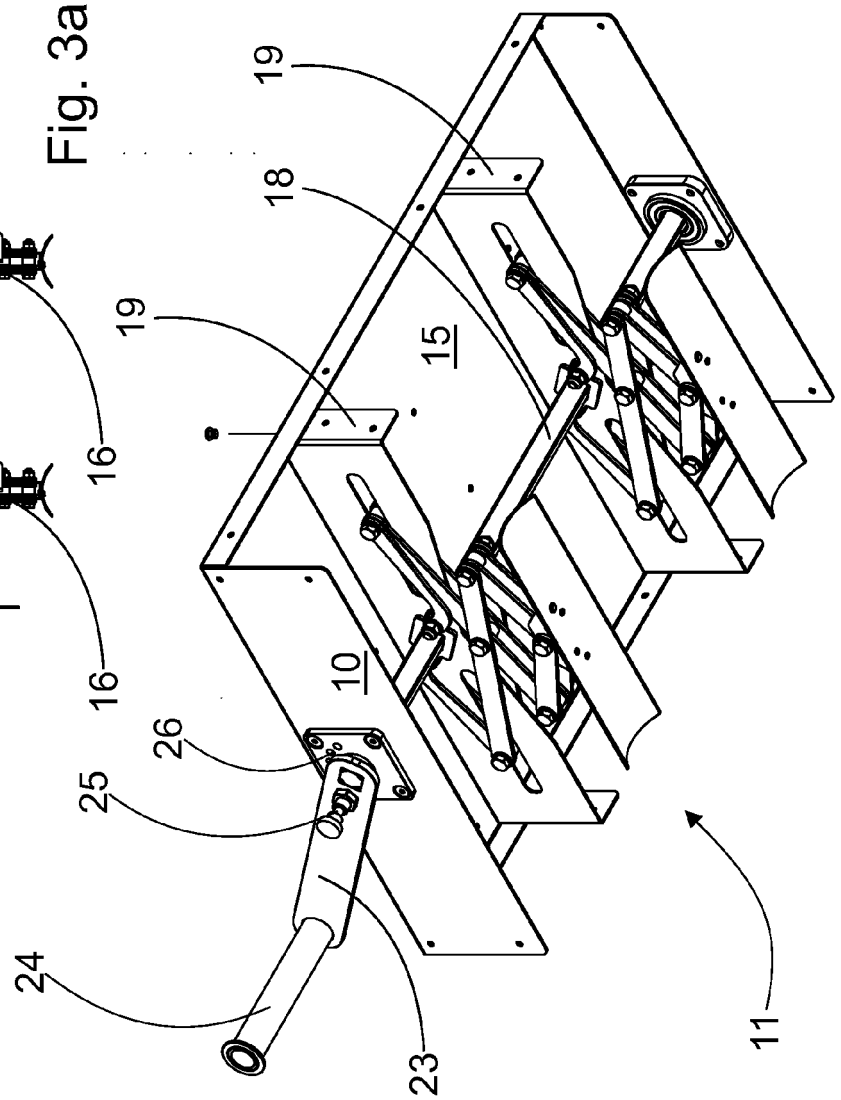

Fig. 3b

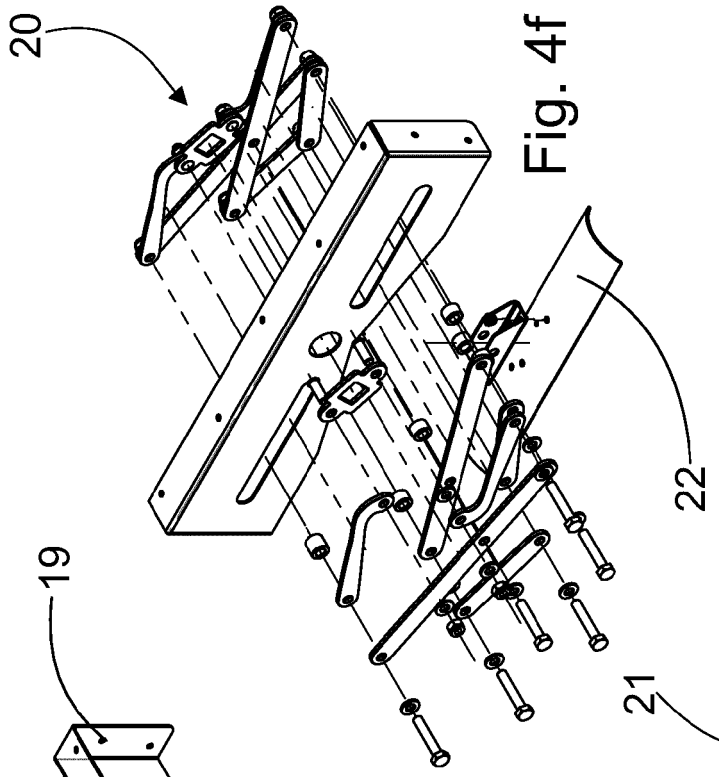

Fig. 4f

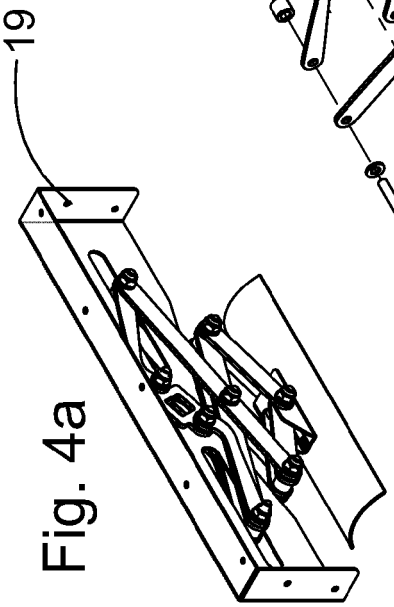

Fig. 4a

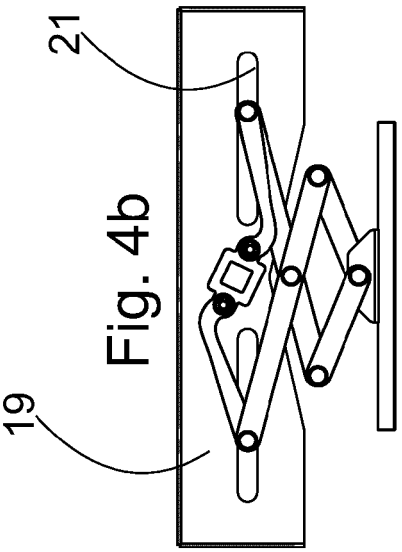

Fig. 4b

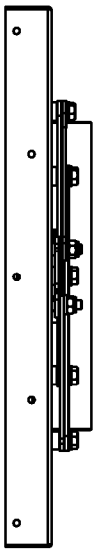

Fig. 4c

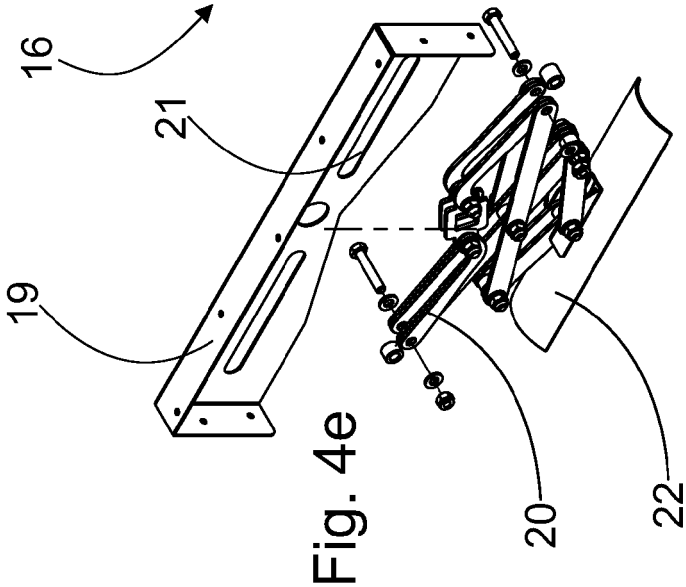

Fig. 4e

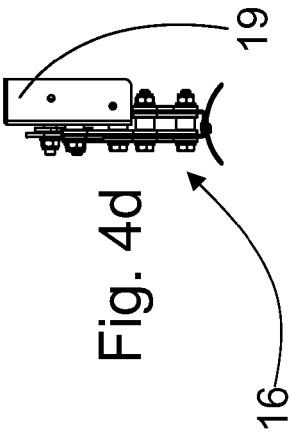

Fig. 4d

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EUROPEAN SEARCH REPORT

Application Number
EP 22 20 0835

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	27 February 2023	Labre, Arnaud

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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