Device for collecting and compacting waste

The present invention relates to a device for collecting and compacting waste, in particular a waste container. The present invention relates in particular to a device with the characteristics of the generic term of claim 1. The present invention furthermore relates to a process for collecting and compacting waste.

Background and prior art

Devices for collecting and compacting waste are known in the prior art. EP 209 639 A1 thus discloses a device for compacting kitchen waste. In the device, the waste brought in is exposed to the atmospheric pressure by aspirating the air with a pump, whereby the waste is compacted.

EP 1 498 364 A1 discloses a device for collecting and disposing of dry rubbish, moist waste and the like. The device comprises a container with a cover, which is fastened by means of hermetic sealing elements, with a piston inside, which can slide and which forms a hermetic chamber. Waste compaction and liquid discharge elements, and also air and liquid intake elements are furthermore present, which are connected to the chamber and to the interior of a flexible container. However, the piston is only retracted by a spring, there is no active compression of the waste.

WO 2007/076964 A1 discloses a waste container, inside which there is a bag and a vacuum pump for aspirating gas, in particular air, from the bag, wherein a press unit is provided, with which a material inside the bag can be pressed before aspirating the gas and can be compressed by this means. However, details of the press unit are not disclosed, only a “downwards” driven press plate is mentioned. The publication furthermore discloses a sealing unit for gastight sealing of the bag.

In the waste containers known in the prior art, only atmospheric pressure is therefore substantially used for compacting the waste bag, or an unspecified press plate is driven “downwards”. With a typically high spatial requirement for waste comprising rubbish, refuse, containers or the like and low compression, however, both unnecessary space and unnecessary equipment are needed to collect, store and dispose of the rubbish, typically waste bags.

Disclosure of the invention

Embodiments of the present invention provide a waste container in which waste can be collected and stored, compacted as much as possible, and then cleanly disposed of, and which at the same time is easy to operate.

According to a first aspect of the present invention, there is provided a device for collecting and compacting waste including a container for accommodating a waste bag, the container including side walls, a base plate and a first seal at the opening, a cover with a second seal, wherein the cover is configured and arranged such that it

can be brought to an open position with respect to the opening of the container, so that the opening of the container is accessible for placing a waste bag inside, and can be brought to a closed position with respect to the opening of the container, so that the cover interacts positively with the opening of the container such that a waste bag placed inside the container between the first seal and the second seal can be sealed airtight against the cover, means for producing compressed air, means for producing negative pressure, and means for heat sealing a waste bag placed inside the container when the cover is in the closed position, wherein the means are situated at the opening of the container and/or on the cover, wherein in the device, the cover has an aspiration opening, which is arranged on the cover such that in the closed position, the gaseous atmosphere can be aspirated from the interior of a waste bag placed inside the container by means of the means for producing negative pressure, when the opening is closed, the container is airtight, the base plate of the container can be moved with respect to the side walls and, in the closed position, in the direction of the cover, means are provided for moving the base plate with respect to the side walls, and the container has an inlet port for compressed air, which, controlled by means of an inlet valve, can be loaded with compressed air supplied by the means for producing compressed air.

According to a second aspect of the present invention, there is provided a process for collecting and compacting waste including the step of aspirating part of the gaseous atmosphere from a waste bag that contains waste, with simultaneous mechanical compression of the waste bag and simultaneous external air pressure loading of the waste bag.

The above process can be implemented particularly advantageously by the above device.

Advantageous embodiments of the device and of the process are described below.

Embodiments of the invention are based on the knowledge that it is particularly advantageous to collect and compact waste when the compaction not only takes place by aspirating the air from the waste bag but in particular by additional simultaneous mechanical compression of the waste bag and air pressure loading of same. This results by simple means in waste with a particularly low spatial requirement and therefore the best possible utilisation of resources.

Embodiments of the invention are now described in further detail by means of preferred embodiments.

The device for collecting and compacting waste according to the invention comprises a container for accommodating a waste bag. Typical containers are known in the prior art and are typically substantially cuboid or cylindrical in shape. The container comprises an opening, typically the preferably complete top side, and side walls, typically the 4 side walls of the cuboid or the cylinder surface of the cylinder and a container bottom.