June 27, 1939. H. LINDE 2,163,844

DEVICE FOR COLLECTING REFUSE

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Fig. 1.

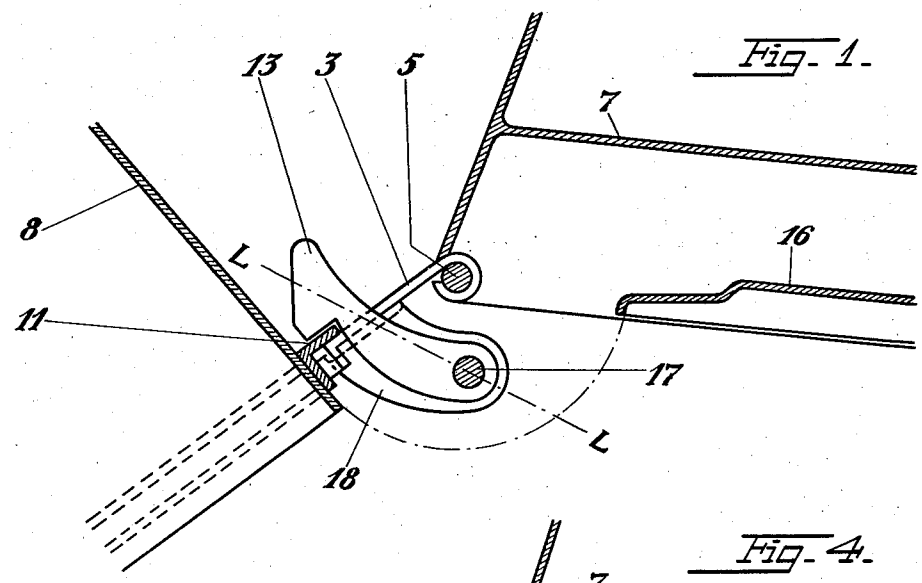


Fig. 4.

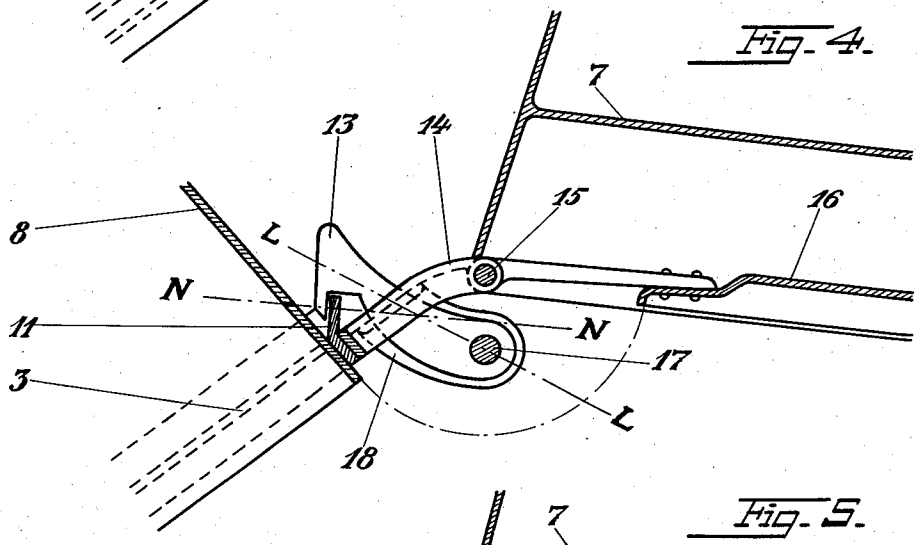
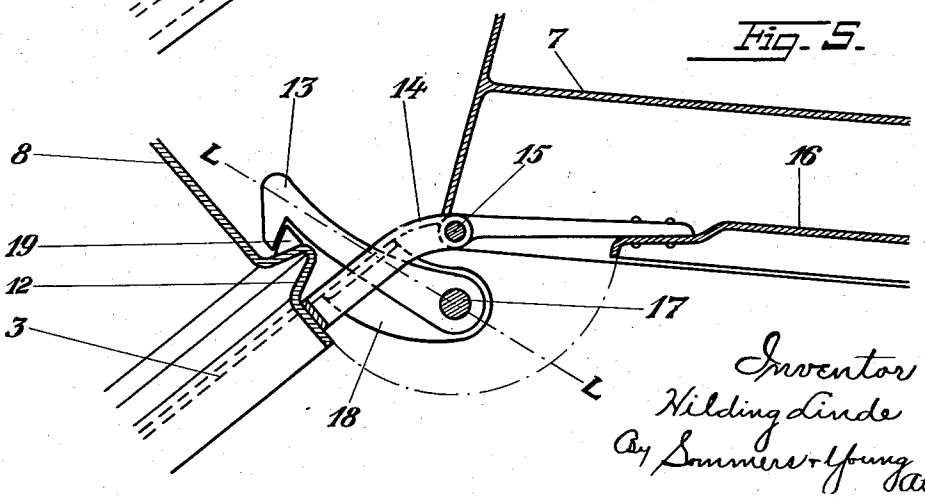


Fig. 5.



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Fig. 2.

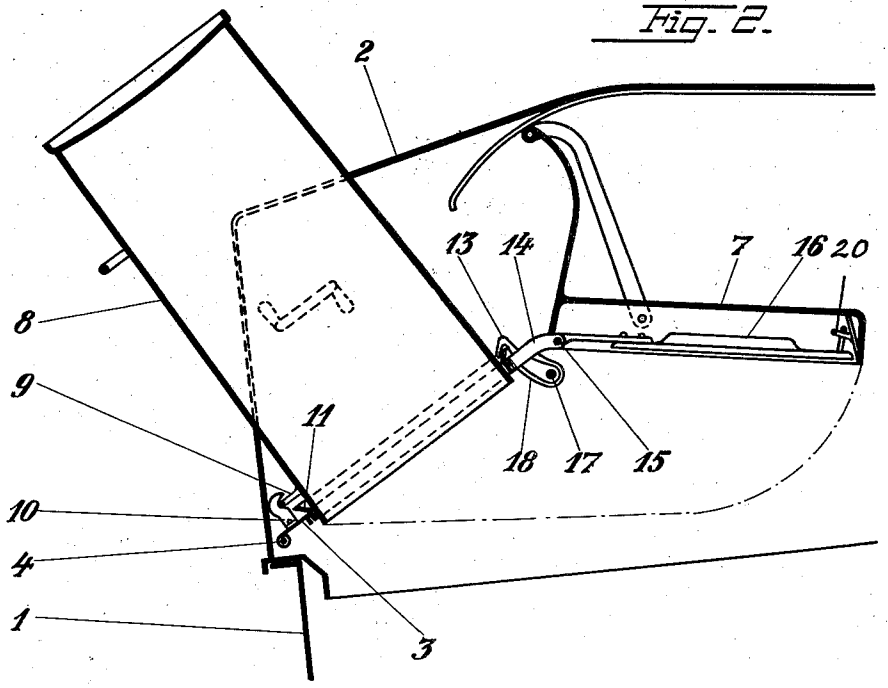
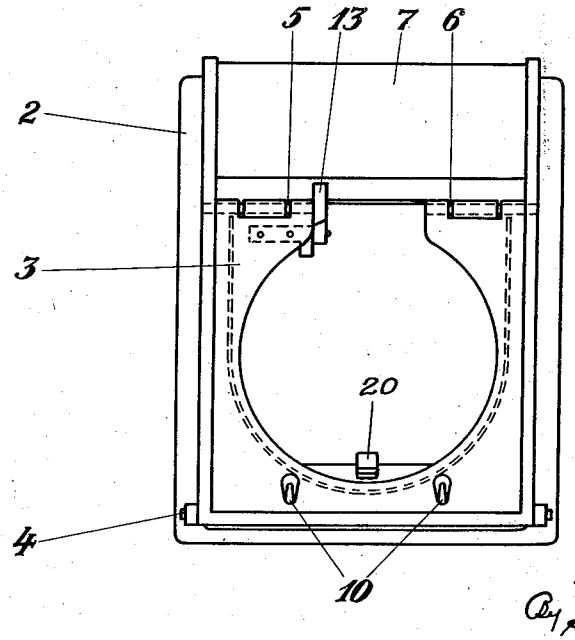


Fig. 3.



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UNITED STATES PATENT OFFICE

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DEVICE FOR COLLECTING REFUSE

Hilding Linde, Kalmar, Sweden

Application May 28, 1935, Serial No. 23,941
In Sweden November 6, 1934

5 Claims. (Cl. 220—98)

This invention relates to equipment for collecting refuse and the like and more particularly to refuse collecting carts and also to dust bins constructed preferably for dustless discharge of the bins into the carts and having means by which they are coupled together during the discharge operation.

In a known construction of refuse carts for emptying of dust bins the carts have been provided with a hook for coupling with a perpendicular flange provided round the top end of the bins, and a main object of the invention is to improve the coupling members on refuse carts and dust bins in order to prevent an unintentional disengaging of the coupling members during the operation.

With this and other objects in view the invention will be hereinafter described and is illustrated by way of example in the accompanying drawings in which:

Figure 1 is a vertical section view of a part of a refuse cart and a dust bin having known coupling members shown in engaging position; Fig. 2 is a vertical section view of a bin and a part of a cart having a dustless discharge device and both having coupling members according to the invention; Fig. 3 is a front elevation of the discharge device in Fig. 2; Fig. 4 represents a part of Fig. 2 in an enlarged scale; and Fig. 5 is a section view showing a modification of the coupling members. Similar parts are indicated by like letters of reference throughout all figures.

The cart 1 is provided with a hood 2 having means for dustless emptying of the bin or can 8 and comprising a movable side-wall section or trap 3 swingably mounted at its lower end on a pivot 4 and hingedly connected at its upper end by means of pins 5 and 6 to one end of a cover-plate 7 for closing a discharge opening in the trap 3. In a known manner by means of guides this cover plate is constructed to swing automatically upwards when the trap 3 is turned inwards from its substantially vertical closing position. The dust bin or can 8 is provided with two handles 9 located at some distance from each other on the same level but only one of them appearing in the drawings. These handles are placed on supports 10 when the bin is to be emptied, and round the orifice of the can is mounted an angle-iron 11 or a fillet 12 adapted to rest against the edge of the opening in the trap 3. The outwardly directed flange of the angle-iron 11 and a member 19 fastened to the fillet 12 cooperate with a coupling hook 13 to connect the bin with the trap during the discharge. The bin is further provided with a lid 16 hinged to the pivot 15 which is mounted in a clamp or support 14, and the lid is adapted to be engaged by a tongue 20 for connection with the cover-plate when this is swung inwards. The hook 13 is pivotally supported by means of a pin 17 on a flange or flanges 18 secured to the trap 3.

In the known arrangement as shown in Fig. 1 one flange of the angle-iron is perpendicular to the other and to the side-wall 8 of the bin and is substantially parallel to the trap 3, and the grasping or engaging surface of the hook 13 is prepared to rest against said flange as they are coupled together. The engaging surface and the longitudinal dimension L through the swinging centre 17 of the hook form an obtuse angle, and it is obvious that the pressure from the flange 11 against the engaging surface represents a turning-moment with respect to the pin 17 and in such a direction that the coupling members will easily disengage. It is further impossible to sufficiently reduce or to eliminate this turning-moment merely by displacing the pin 17 to a lower position as the flange 18 supporting the hook must be located out of the path of travel of the lid 16.

By the invention this difficulty has been overcome by such a construction of the coupling members that the engaging surface of the hook forms with the longitudinal dimension of the hook an acute angle, and that the coupling member of the bin is suitably formed to correspond therewith. According to Fig. 4 the engaging surface of the hook forms such an acute angle with the longitudinal dimension L through the centre 17 that the perpendicular N to the engaging surfaces of the hook and the angle-iron passes above the centre 17 and on the opposite side of the line N, whereby the pressure from the angle-iron upon the hook represents a turning-moment in opposite direction to that as described with reference to Fig. 1 causing the coupling capacity to be automatically maintained. The angle-iron 11 has such a form that its both flanges form an obtuse angle whereby the outstanding flange forms an acute angle with the side-wall of the bin. The angle-iron may be manufactured with such an unusual section from beginning and thereafter bent to a ring-form. Preferably, however, an angle-iron of suitable standard-size is first bent to the shape of a ring and is then mounted in a rotating machine such as a turning-lathe and rotated while one flange thereof is being operated upon by a pressing-tool so as to assume the desired angular position relatively to the second

flange. Instead of rotating the angle-iron the pressing-tool may be rotated. The ring thus formed is finally mounted and fastened upon the dust bin.

In Fig. 5 the engaging surface of the hook is concave and preferably cylindrical, and its axis is in this form coincident with the turning-centre 17. The coupling member 19 is preferably provided with a similar cylindrical engaging surface, and as the perpendicular passes through the centre no turning-moment is at hand in this construction.

A further advantage connected with a dust bin according to the invention and especially a bin as shown in Fig. 4 resides in that rain-water and water from melting snow is prevented from running down the side-walls of the bin from the lid thereof, and the downwardly projecting flange also prevents vermin, such as rats, from climbing up the walls of the bin. Furthermore the bins may be closely stored on a carriage without injuring the surface coating of one another, such as galvanization.

While I have described my invention by reference to the specific forms thereof, it will be understood that many changes and modifications may be made without departing from my invention, and especially the coupling member of the bin may vary in different ways to correspond to the coupling hook.

I claim:

1. Improvements in devices for collecting refuse, comprising a dust bin having a coupling member, and a refuse collecting cart having a pivotally mounted coupling hook for engaging with the coupling member on the dust bin, said coupling hook having an engaging surface forming an acute angle with the longitudinal dimension of the hook, and said coupling member having an engaging surface forming an acute angle with the side-wall of the bin.

2. Improvements in devices for collecting refuse, comprising a dust bin having a coupling member at its top end, and a refuse collecting cart, said cart having means for dustless discharge of the bin and a coupling hook pivotally mounted and adapted to engage with the coupling member of the dust bin, said coupling hook having an engaging surface forming an acute angle with the longitudinal dimension of the hook, and said coupling member having an engaging surface forming an acute angle with the side-wall of the bin.

3. Improvements in devices for collecting refuse, comprising a dust bin having a coupling member, and a refuse collecting cart, said cart having means for dustless discharge of the bin and a coupling hook pivotally mounted and adapted to engage with the coupling member on the dust bin, said coupling hook having an engaging surface forming an acute angle with the longitudinal dimension of the hook, and said coupling member comprising a flange the engaging surface of which forms with the side-wall of the bin an acute angle.

4. Improvements in devices for collecting refuse, comprising a dust bin having an angle iron extending around its top end, and a refuse collecting cart, said cart having a coupling hook pivotally mounted and adapted to engage with the angle-iron of the bin, the engaging surface of said hook forming an acute angle with the longitudinal dimension of said hook, and said angle-iron having two flanges forming with each other an obtuse angle.

5. Improvements in devices for collecting refuse, comprising a refuse collecting cart having means for dustless discharge of a dust bin into the cart, and a coupling hook pivotally mounted on a pin, the engaging surface of said hook forming with the longitudinal dimension of the hook through said pin such an acute angle that a perpendicular to said surface passes at a distance from said pin on the opposite side of said longitudinal dimension.

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