

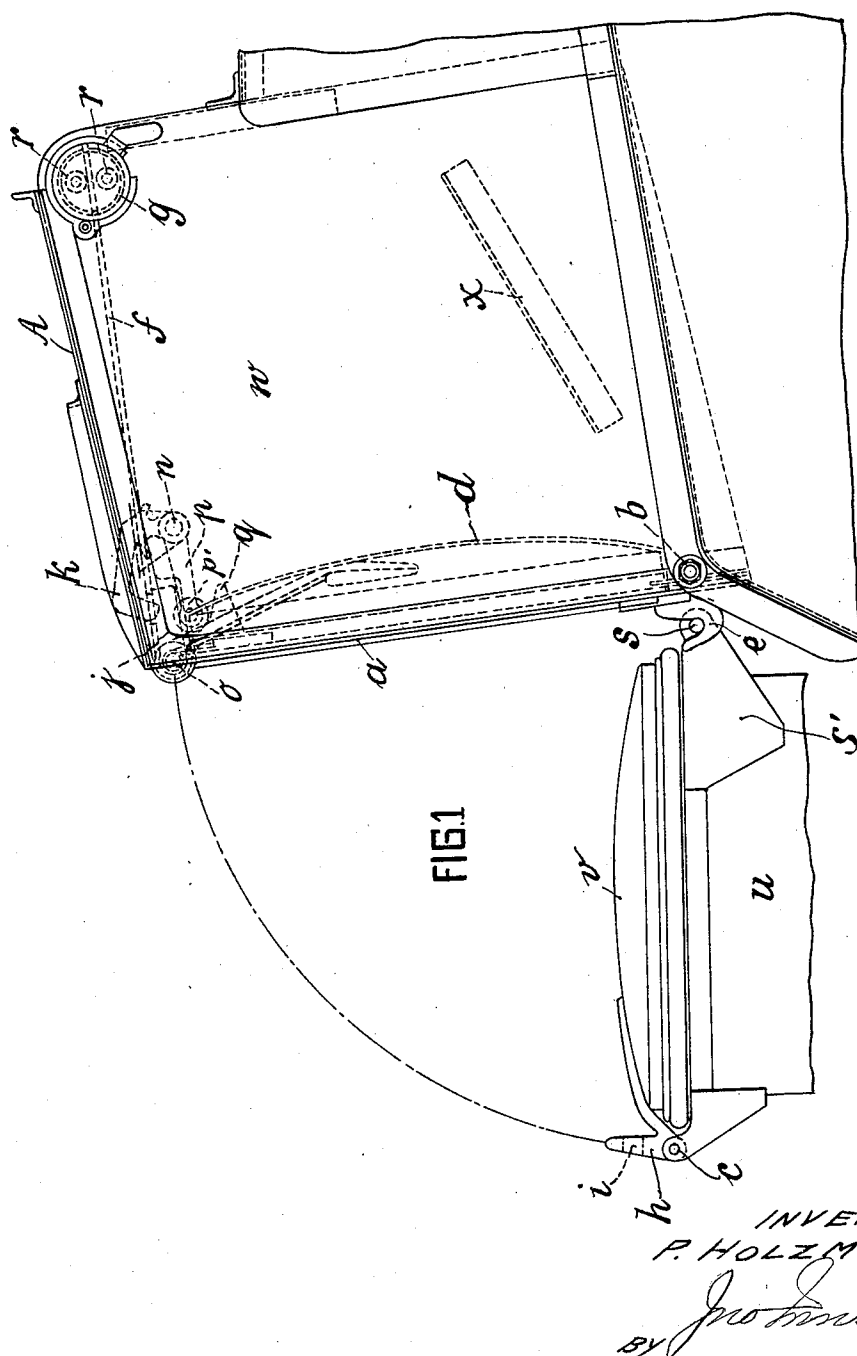
Nov. 1, 1927.

1,647,829

P. HOLZMANN
 DEVICE FOR EMPTYING GARBAGE BINS INTO GARBAGE COLLECTING RECEPTACLES
 OR CARRYING-OFF CARS IN DUSTPROOF MANNER

Filed Aug. 2, 1927

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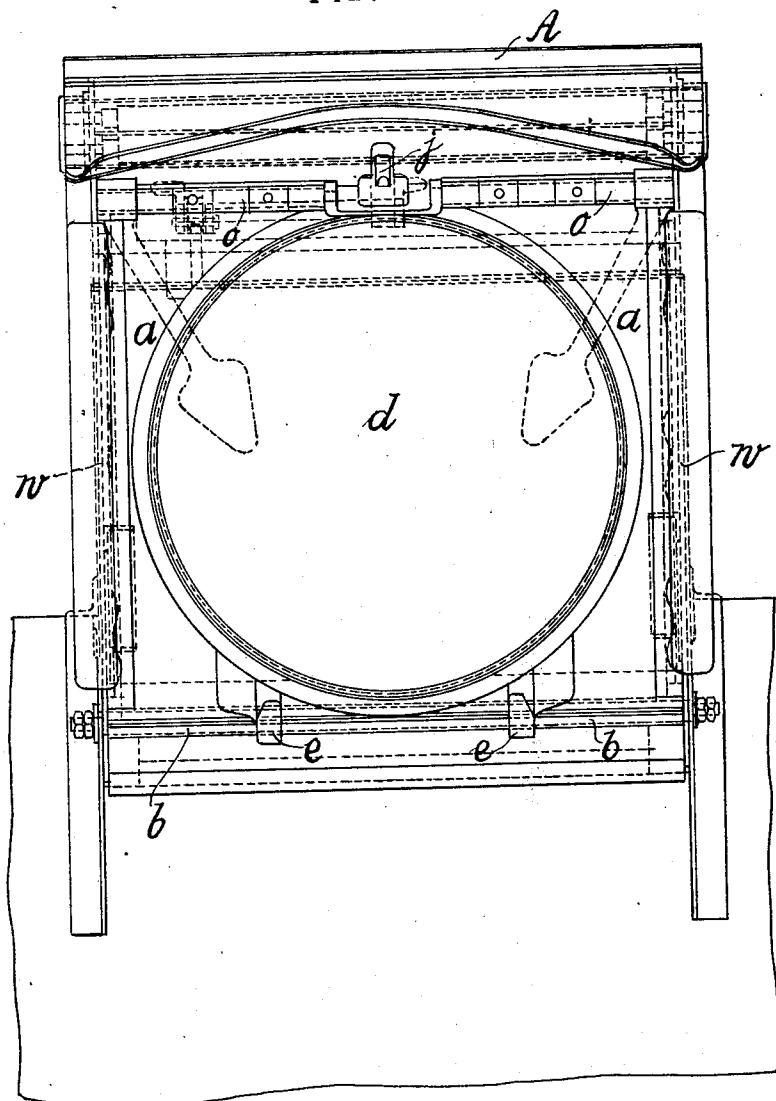
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FIG. 2



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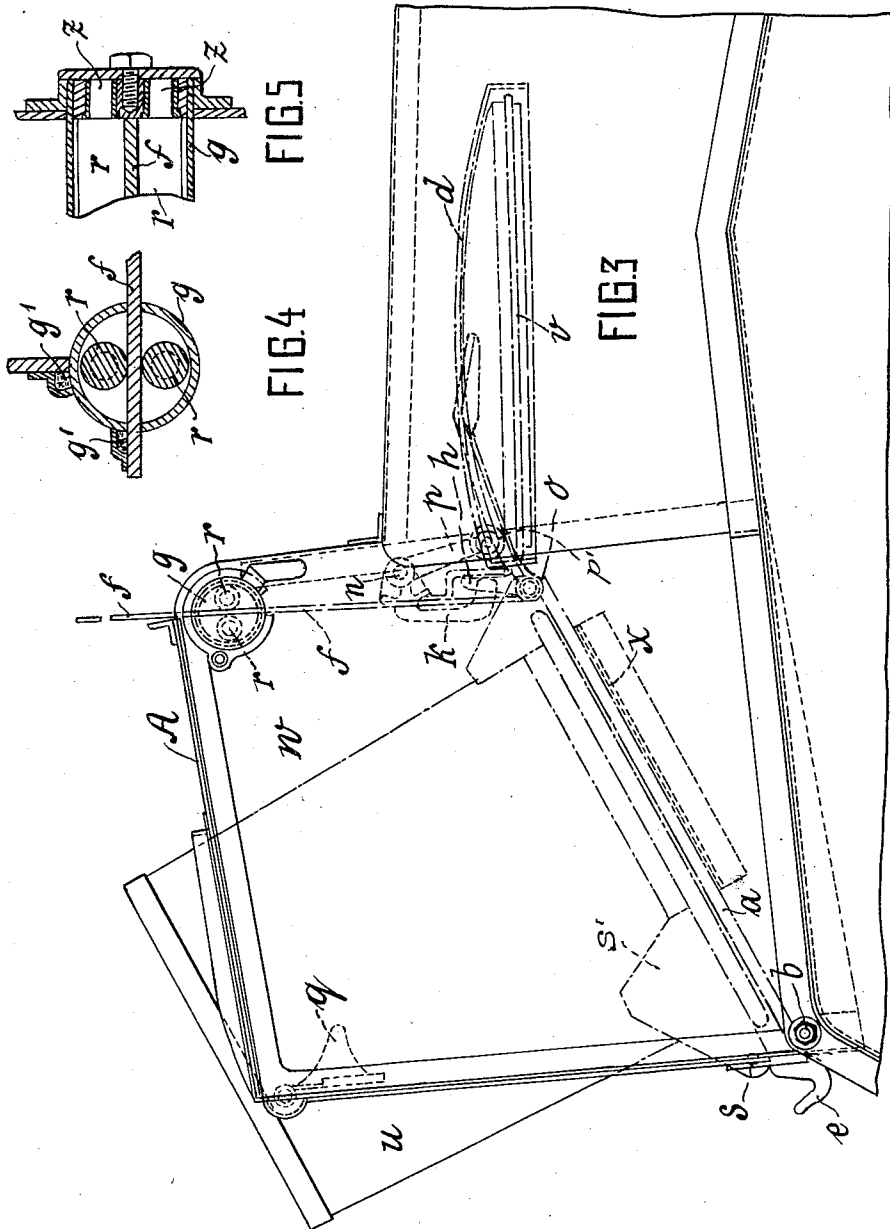
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

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DEVICE FOR EMPTYING GARBAGE BINS INTO GARBAGE-COLLECTING RECEPTACLES OR CARRYING-OFF CARS IN DUSTPROOF MANNER.

Application filed August 2, 1927, Serial No. 210,202, and in Germany September 9, 1925.

This invention relates to a device for emptying garbage bins having flap-covers into a closed garbage collecting receptacle or into a closed garbage carrying-off car in such a manner that no dust can escape. In this invention the receptacle or car is provided with a hood located above the space intended to receive the garbage, and the hood is provided with a front plate having an aperture corresponding to the size of the flap-cover of the garbage bin, and with an inner cover adapted to close said aperture from the interior of said hood. This cover is so shaped that it can receive the cover of the bin, and means are provided by which the two covers can be coupled with one another in such a manner that both are opened when the bin is turned and tipped into the said hood. The two covers assume practically a horizontal position when they are within the hood, and in order to move them into this position and to retain them therein while the emptying proceeds, a plate is provided in the top of the hood and connected turnably with the covers and shiftably with the hood, in such a manner, that no dust can escape during the emptying of the bin. Besides, certain coupling means are provided, all as shown in the drawings and described hereinafter.

The invention is illustrated diagrammatically and by way of example on the accompanying drawing on which it is shown applied to a garbage carrying-off car, and on which Figure 1 is a side-view of the device in connection with the top of a still closed garbage bin (lefthand side of the figure), Figure 2 is a front-view of the device (without the bin), Figure 3 a view similar to Fig. 1, showing, however, the opened bin tipped into the device, and Figures 4 and 5 are details which are also fully dealt with hereinafter.

On the drawings *u* (Fig. 1) denotes the bin to be emptied into the car; *v* is the cover of the bin, and *c* the hinge by which the cover and the body of the bin are connected with each other. Opposite the hinge *c*, the bin is provided with a horizontal rod *s* affixed to the bin body by brackets *s'* (Fig. 1). The rod *s* serves for attaching the bin to hooks *e* provided at the car just in front of the hood *A*, by the intermediary of which the garbage is guided into the interior of the—otherwise closed—car. Near the hooks

e a horizontal axle *b* is attached to the car body; this axle serves as hinge for a hood-cover *a* having an aperture, the size or diameter of which corresponds to the size or diameter of the cover *v* of the garbage bin. That aperture can be closed from the interior of the hood *A* by a cover *d* hinged to an upper axle *o*, serving also as hinge for a top-plate *f* which is, therefore, connected with the top of the cover *d* by means of said axle (*o*). In the position of the parts as shown in Fig. 1 the plate *f* and the cover *d* lie about at right angles with respect to one another. The lateral edges of the top plate *f* contact with the side-walls of the hood, so that no dust can escape. The free end of the plate *f* extends through oppositely located horizontal slots of a tubular member *g* (Figs. 1, 4 and 5) located in the upper rear corner of the hood and enclosing two rollers *r r*, between which the plate passes through, as in Fig. 4. The rollers *r r* are located in bearings affixed to the upper rear corners of the side-walls *w* of the hood; *z* (Fig. 4) are the trunnions of the rollers *r*. The parts *f* and *g* fit closely so that no dust can escape, but nevertheless packings *q*¹ (one at the hood portion just over the tubular member *g* and the other at the plate *f*) may be provided in order to secure perfect tightness.

The covers *a* and *d* are connected with each other in such a manner that *d* is turned from the position shown in Fig. 1 into the position shown in Fig. 3 when *a* is turned from the position shown in Fig. 1 into that shown in Fig. 3, in which it rests on abutment ledges *x* and simultaneously therewith the plate *f* is also moved from the position shown in Fig. 1 into that shown in Fig. 3, the tubular member *g* with its rollers *r* being also turned.

The size and shape of the cover *d* which pertains to the hood *A* is such that it can receive and enclose the cover *v* of the bin *u*, as shown in dotted lines in Fig. 3. Both covers must be coupled with each other, and for this purpose the cover *v* is provided with an upwardly extending lug *h* for which a cavity *j* is provided in the cover *d*. The lug *h* has a bore *i* which is engaged by a locking pawl *k* arranged in the top of the hood near the axle *o*. The pawl *k* is carried by the top plate *f* where there is provided a bearing for an axle *n* to which said pawl is affixed. The axle *n* extends to one of the

side walls of the hood where it is provided with an arm *p* provided in turn with a roller *p'* bearing normally upon a curved projection *q* attached to the respective side-wall.

5 When the roller *p'* of the arm *p* is bearing on the projection *q*, as in Fig. 1, the pawl *h* is in lifted position so that the lug *h* of the bin cover *v* can enter into the cavity *j* provided for its reception, as stated.

10 When then, in order to empty a filled garbage bin, the respective bin is coupled with the hooks *e* and is turned on the axle *s*, the bin cover *v* will pass through the large aperture of the front plate *a* of the hood into the cover *d*. As the movement of the garbage bin is continued, the cover *a* is moved inwardly on its axis *b*, which by reason of the pivotal mounting of the cover closure *d* and top plate *f* on the upper axle

20 *o* tends to swing the cover *v* of the bin away from the same, as illustrated in Fig. 3. In this initial movement the roll *p'* of the arm *p* rides off of the projection or lug *q*, so that the arm operates by gravity to turn the shaft *n* and thereby move the pawl *h* into the cavity *j* in the cover *d* and through the bore *i* in the lug *h* of the cover *v*. The covers *d* and *v* are thus secured together and move as a unit until the return of the parts causes the lug *h* to be displaced from the locking cooperation described by the roller *p'* riding onto the curved surface of the projection *q*.

30 On the further movement of the bin cover *v* also the cover *d* is moved, i. e. turned on its axle *o*, but owing to the coupling between the lug *h* and the pawl *h*, the covers *v* and *d* are moved simultaneously, viz lifted so as to assume the position shown in dotted lines in Fig. 3, in which the bin is nearly completely turned upside down, at least so much that the entire amount of garbage contained therein falls down into the collecting space of the garbage car.

40 When the bin is moved back into its former position, also the other moved parts reassume their former positions. First these other parts are moved together with the bin, and as soon as the roller of the arm *p* contacts again with the projection *q* the coupling between the pawl *h* and the lug *h* is broken, and now the bin can be moved separately until it arrives again in the position shown in Fig. 1 in which it can be removed from the car.

55 Concerning merely the movements of the plate *f* and the tubular member *g* relatively to one another these two members would suffice for the purpose in view, but the friction between the plate *f* and the edges of the slots of the tube *g* would be very great, as would be, therefore, also the wear and tear. This drawback is completely done away with by the rollers *r* which convert the sliding fric-

tion into rolling friction which is accom- 65 panied by nearly no wear and tear at all. Besides, moving the plate *f* is greatly facilitated, and as the rollers can be covered with leather or the like a very good tightness is obtained. 70

I claim:

1. A device for emptying garbage bins into garbage collecting receptacles or carrying-off cars in dust-proof manner, comprising, in combination with a hood on the top of the space intended to receive the garbage, a horizontal tubular member located in the upper rear corner of the hood and having oppositely located slots; a pair of horizontal rollers arranged in said tubular member and leaving a gap between them; a plate extending with one end through said slots and said gap and extending with its other end to the front of said hood; an inwardly vaulted cover closing the hood front 85 and being movably connected with the last mentioned end of said plate; a hood front wall located in front of said cover and having an aperture adapted to receive the cover of a garbage bin and being adapted to be 90 turned inwardly and downwardly together with the bin when this is being emptied, and means for coupling the bin cover and the hood cover with one another, substantially as set forth. 95

2. A device for emptying garbage bins into garbage collecting receptacles or carrying-off cars in dust-proof manner, comprising, in combination with a hood on the top of the space intended to receive the garbage, 100 a horizontal tubular member located in the upper rear corner of the hood and having oppositely located slots; a pair of horizontal rollers arranged in said tubular member and leaving a gap between them; a plate extend- 105 ing with one end through said slots and said gap and extending with its other end to the front of said hood; an inwardly vaulted cover closing the hood front and being movably connected with the last mentioned 110 end of said plate; a hood front wall located in front of said cover and having an aperture adapted to receive the cover of a garbage bin and being adapted to be turned inwardly and downwardly together with the bin when 115 this is being emptied; an axle attached to the bottom surface of the said plate, a pawl affixed to the middle portion of said axle and another arm affixed to same; a lug provided at the hood cover and being adapted 120 to contact with said arm so as to turn it thereby; and a lug provided at the cover of the bin intended to co-operate with the hood, and adapted to co-operate with said pawl, substantially as set forth. 125

In testimony whereof I affix my signature.

PAUL HOLZMANN,