

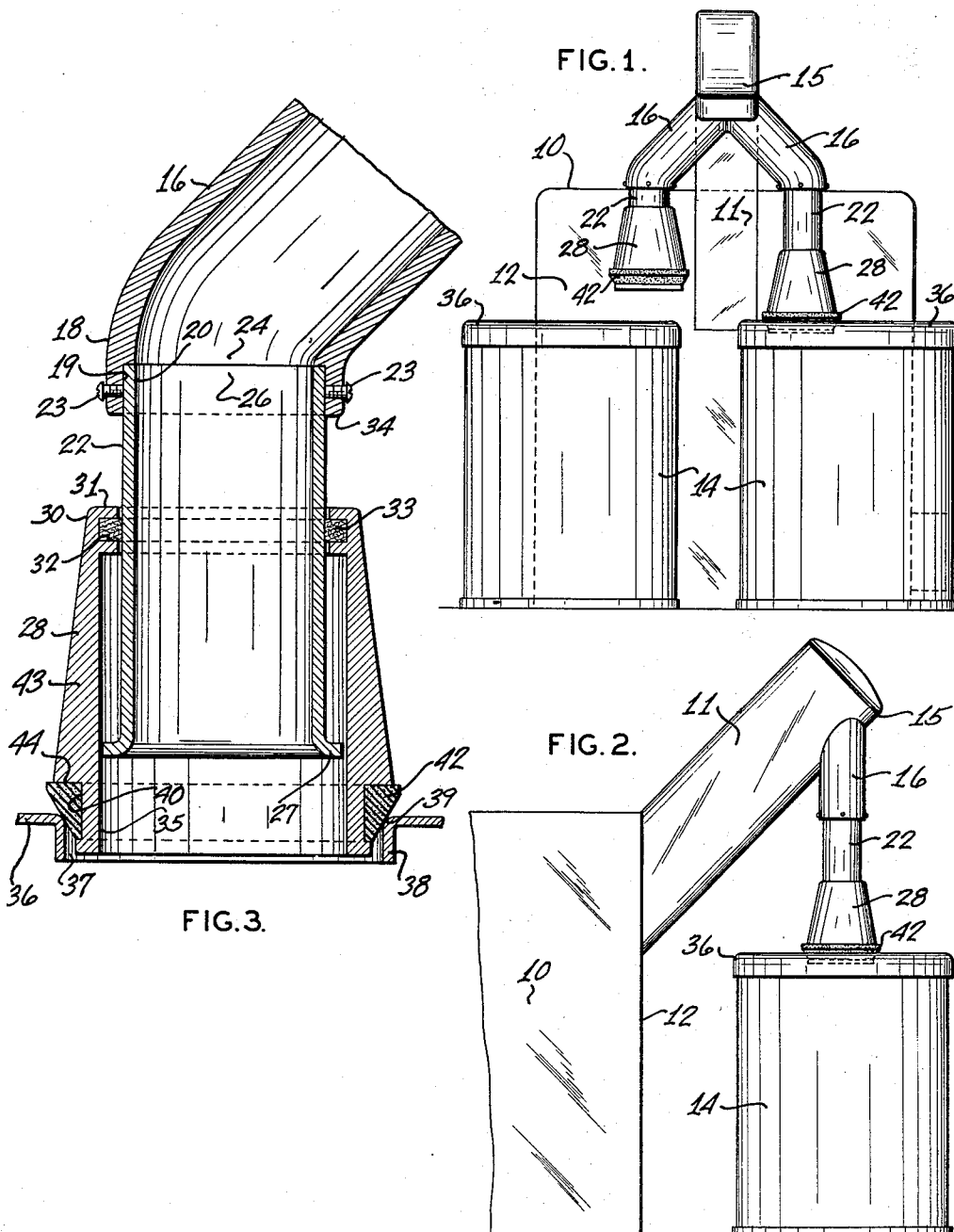
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CONNECTOR DEVICE

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CONNECTOR DEVICE

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This invention relates to improvements in material handling apparatus, and has particular reference to improved means adapted for connecting the discharge end of a material conduit to a material receiver or container, in a manner providing for ready removal of the receiver from the connecting means, as when the receiver becomes filled and it is desired or becomes necessary to replace it with an empty container.

While the connecting means forming the subject of the present invention, is readily applicable to many types of material handling systems, it has particular utility in ash removal systems for domestic type stokers, as for example, in such a system which employs conveyor means arranged to conduct ashes from the burner ash-pit zone, to a point remote from the burner, for discharge into an ash receiver or ash can. It is especially desirable in domestic stoker installations, to provide for ash discharge from the conveyor means into the ash receiver in a manner to prevent or preclude the escape of fine particles of ash or ash dust, past the connection between these elements and into the surrounding atmosphere. Moreover, in order to provide for a relatively uninterrupted removal of ashes via the ash receiver in connection with the discharge end of the ash conveyor, provision must be made, preferably through the conveyor-receiver connecting means, for ready and quick substitution of an empty container or receiver for a filled one, in ash-receiving association with the conveyor.

The foregoing objectives are fully attained by the improved connector device forming the subject of this invention, and since it finds particular utility in connection with a stoker ash removal system of the type indicated, the present disclosure of the connector device is exemplified as applied to such a system.

It is to be noted however, that other objects and advantages of the invention not specifically indicated hereinabove, will become readily apparent from the following detailed description thereof, when read in connection with the accompanying drawing, in which:

Fig. 1 is a front elevation of a stoker ash conveyor-receiver arrangement illustrating the application of the improved connector means thereto; Fig. 2 is a side elevation thereof, and Fig. 3 is a greatly enlarged transverse sectional elevation of the improved connector means, shown in operative association with the discharge end of the ash conveyor and with an ash receiver, the latter elements being shown only in fragmentary section.

Referring to the drawing by suitable characters of reference, there is illustrated in Fig. 1, a housing 10 forming part of a stoker assembly and enclosing certain operating parts of the stoker mechanism, as a driving motor, a blower for supplying combustion air to the burner, fuel hopper, etc., all of which are not here shown, since these elements do not form any part of the present invention. The stoker ash removal facilities, of which only the ash discharge end of the system is shown, may include a suitable type of conveyor leading from the ash pit zone of the burner (not shown) into the housing 10, for association with an ash elevator mechanism (not shown) arranged within an elevator conduit 11 which may project outwardly and upwardly from the upper portion of one side 12 of housing 10, so as to provide for the discharge of ashes therefrom, into ash receivers 14 located below the outer end 15 of the elevator conduit. Operation of the conveyor and elevator mechanism may be effected within the housing 10, as from the stoker motor therein.

Located on the lower side of the elevator conduit discharge end 15 are a pair of short-length conduits 16 forming ash discharge nozzles or spouts, each in communication with the interior of the conduit. Although two such spouts are shown, it is to be understood that one or more than two may be provided, depending upon the type and capacity of the stoker installation. In the present example, the spouts are directed downwardly and oppositely, laterally of the conduit 11, thereby spacing them in a manner to facilitate the connection of each to an ash receiver 14 arranged therebelow.

Turning now to the improved means for connecting each spout to an ash receiver, the lower end or mouth section 18 of each spout is internally bored to provide a shouldered seat 19 for the upper end 20 of a tubular member or short conduit 22 which forms a part of the improved connector device. The member may be removably held in assembly with the spout in any suitable manner, as by set screws 23 threadedly carried by the spout section 18 and engageable with the end 20 of the member (Fig. 3). As appears in the figure referred to, the internal diameter of the tubular member 22 is preferably the same as that of the spout at its mouth, so that the adjoining internal wall surfaces 24 and 26 of the members 16 and 22, respectively, are flush at the juncture, thus providing for a smooth flow of ashes past this connection.

The lower end of the tubular member 22 is

turned outwardly, to provide a circumferential flange 27 which serves as an abutment or stop, as well as a guide, for a tubular element 28 which is sleeved over and telescopically displaceable along the member 22. The upper end 30 of element 28 is formed to provide a relatively thickened, internal flange 31 extending annularly of the element, and in which is provided an annular recess or groove 32. Seated in the groove is a sealing ring 33 which may be formed of any suitable resilient or pliable gasketing material, as rubber or felt, the gasket engaging the surface of the member 22 in the manner shown in Fig. 3. As now appears, the telescopic displacement of the tubular element 28 relative to the member 22, is limited in its downward projection, by abutment of the inturned flange 31 with the flange 27, and in its upward retraction by abutment of the inturned flange 31 with the margin 34 of the spout end 18. The flange 27 serves also, to retain the element 28 in assembly with the conduit member 22, in a manner readily apparent.

The telescopic element 28 is adapted at its lower end 35, for ash delivery connection to an ash receiver 14, in a manner now to appear. The ash receiver or ash can 14 includes a removable lid or cover 36 which preferably closely engages the open end of the can, thereby effectively closing the can against the escape of ash dust during delivery of ash into the can. Formed in a section of the can cover, preferably near the periphery thereof, is an aperture 37 of circular form and of a diameter sufficient to receive therethrough, the lower end 35 of the connector element 28, as shown in Fig. 3. The marginal portion 38 of the cover, which defines the opening 37, is preferably inturned to provide a smooth and somewhat rounded edge 39 for the opening.

An external, annular recess or groove 40 is formed in the lower portion of the element 28, inwardly of its lower end 35, the recess providing a seat for a sealing ring 42 formed of suitable gasketing material, as sponge rubber or the like. The sealing ring is externally beveled as shown, to adapt it for seating against the rounded portion 39 of the margin 38 defining the ash can cover opening 37, and when so engaged, the ring 42 effectively seals the ash delivery association of the element 28 with the ash can, in a manner to prevent the escape of ash dust past the ring and into the surrounding atmosphere. It is to be noted here, that the felt ring 32 between the tubular elements 22 and 28, serves a similar purpose, as to prevent the escape of ash dust past these parts.

As shown in Fig. 3, the wall section 43 of the element 28, above the recess 40 therein, is preferably tapered outwardly from the upper end of the element to the zone of the recess, and is of greater thickness in such zone, than the corresponding dimension of the wall section at the lower end 35. Such thickening of the wall of element 28, serves to increase its weight to an extent to assure a firm engagement of the sealing ring 42 with the margin of the can opening 37. Moreover, as will be noted in Fig. 3, the thickened wall section at the zone of the recess 40, provides for a laterally extended upper margin 44 of the recess, to assure firm seating of the sealing ring 42 in the recess.

Application of the connector means to an ash receiver in the case of each of the spouts 16, is readily effected in a manner now apparent. An

ash receiver 14 is located beneath each spout 16 such that the cover opening 37 is substantially in vertical register with the lower end 35 of the connector element 28, the latter being retracted upwardly during the positioning of the can. Thereafter, the element 28 may be released, for movement downwardly relative to the member 22, until the end 35 projects through the can opening 37 and the sealing ring 42 seats upon the rim 39 of the opening. Removal of the can, as when filled with ashes, may be effected upon upward retraction of the element 28, after which an empty can may be positioned therebelow and the connector means associated therewith in the same manner as before described.

The improved connector means exemplified by the present disclosure, fully attains the objects stated hereinabove, and provides a means which greatly facilitates the handling and removal of ashes in a stoker assembly, in a manner to prevent the escape of ash dust into the surrounding atmosphere in the furnace room or other place of stoker installation.

It is to be understood, however, that only a preferred embodiment of the invention is herein disclosed and described, and that alterations or modifications in the parts and arrangement thereof, may be made without departing from the spirit and scope of the invention, as defined by the appended claims.

I claim:

1. A connector device of the character and for the purpose described, comprised of a tubular member having an out-turned annular flange at one end, a second tubular member movable longitudinally over the first said member and its flange, and provided with an inturned annular flange at one end thereof, said flanges cooperating in limiting movement of said second member relative to the first in one direction, said inturned flange being formed to provide an annular recess therein, a resilient gasket element seated in said recess for sealing engagement with the first said tubular member, said second tubular member having an external annular recess in its opposite end, and a resilient gasket element of tapered ring form, seated in said recess.

2. A connector device of the character described, for use with ash disposal means of a domestic stoker, to interconnect an ash discharge conduit thereof and an enclosed ash receiver having an ash-receiving opening, said device comprising a tubular member carried by and forming a continuation of the ash conduit, said member having an external, annular flange at the free end thereof, a second tubular member movably sleeved over the first said member and its flange, and provided with an internal annular flange at one end thereof, said flanges cooperating in limiting movement of said second member relative to the first member in one direction, said internal flange having an annular recess therein, a resilient gasket element of ring form, seated in said recess and adapted for sealing engagement with the first said tubular member, said second member having its opposite end portion adapted for projection into said ash receiver opening, and formed to provide a shouldered, external annular recess, and a resilient element of tapered ring form, seated in said shouldered recess, said element being provided for sealing engagement with the ash receiver about said opening therein.

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