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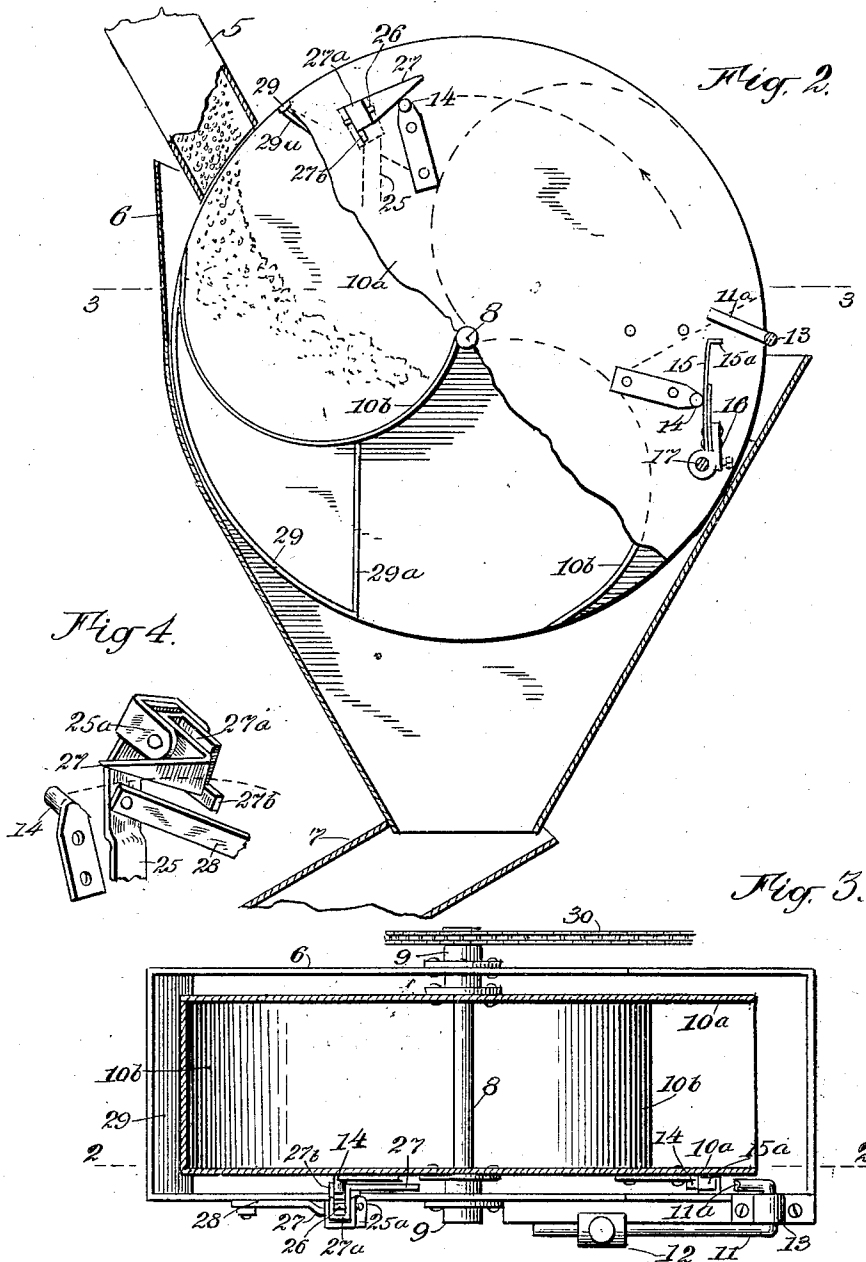
S. W. SMITH ET AL

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AUTOMATIC WEIGHER

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2 Sheets-Sheet 2



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ELECTRIC SERVICE CONNECTION

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My invention relates to electrical contacts and more particularly to an electric service connection for portable electrical appliances.

Portable commercial electrical appliances are in common use in factories, stores, and the like. These appliances are used for cleaning, grinding, boring, and various other uses and they are usually equipped with a motor or other electrical apparatus which requires a higher voltage than that with which the ordinary lighting circuit is charged. Wall service outlets, fitted with sockets into which a plug on the end of the electric appliance feed cord will fit, are provided at convenient places where it is desired to use the appliances. These socket and plug service connections are subject to considerable disorder which it is the general object of my invention to overcome. For instance, the holes in the service outlets now in use are formed in a rigid piece of metal so that if the contact prongs of the attaching plug are bent slightly out of their proper alignment, the surface on one side of these prongs will be removed from contact with their respective holes.

It is therefore an object of my invention to provide an electric service connection having male and female connection members which are self-aligning.

In the service connections in common use at present, the feed cord leaves the plug horizontally and then hangs downward, forming a right angle bend in the cord. This tends to crystallize the wires of the cord, causing them eventually to part where the bend occurs.

A further object of my invention is to provide an electric service connection, the attachment plug member of which connects to the appliance feed cord so that the latter hangs vertically from the plug member.

A still further object of my invention is to provide an electric service connection, the attaching plug of which has an apron disposed about contact prongs so that the prongs are protected from being injured while the plug is detached.

In the present service connections the feed cord is attached to the plug so that the plug may be pulled from the outlet by jerking the cord. This practice soon ruptures the wires

in the cord and requires the cord to be repaired or replaced.

Yet another object of my invention is to provide an electric service connection in which the feed cord is attached to the attachment plug so that it may not be withdrawn from the service outlet by means of the feed cord, thus defeating the practice of so doing and saving the expense occasioned thereby.

Further objects and advantages will be made apparent in the following description and the accompanying drawing in which,

Fig. 1 is a perspective view showing a preferred embodiment of the service connection of my invention.

Fig. 2 is a view similar to Fig. 1 showing the attachment plug removed from the service outlet member of my electric service connection.

Fig. 3 is a vertical sectional view of the service outlet member of this invention.

Fig. 4 is a vertical sectional view of the attachment plug of my invention.

Fig. 5 is a view taken in the direction of the arrow 5 of Fig. 3.

Fig. 6 is a fragmentary elevational view taken in the direction of the arrow 6 of Fig. 3 and broken away to show successively the insulating discs which form the head of the box of the service outlet of my invention.

Fig. 7 is a view of an insulating disc with the head ends of contact receptacles disposed in expanded position in holes in said disc.

Referring specifically to the drawing, the service connection 10 of my invention, illustrated in perspective in Figs. 1 and 2, comprises a service outlet member 11 and an attachment plug 12. The service outlet member 11 has a casting 13 which forms a base plate 14 and a box 15 which protrudes outward from the face of the base plate 14, as clearly shown in Fig. 3. The box 15 tapers slightly from the base outward and is circular in cross-section. It is obvious, however, that the shape of this box might be varied without vitally affecting the nature of this box. The box 15 has an interior chamber 16 which is open at the forward and rearward ends of the box. An annular shoulder 17 formed near the forward end of the cham-

reaches its final position of rest. Details of this stop are best shown in Fig. 4. A standard 25 attached to the side of the hopper is provided with bearing-lugs 25^a, and to these is pivoted at 26 a tilting cam 27. The body of the cam is stirrup-shaped at 27^a, and one of the wings has an abutment 27^b, which when the cam is lifted by the passing under it of the stud serves as a positive, but momentary stop for the same. As soon as the stop acts, the cam drops to its normal position by gravity, when the stud may move gently forward the slight distance to its final position, passing over the abutment. This permits the other stud to reach its final position of rest under the trip-lever with certainty, but with no disturbance of the scale-beam. Both the standard and its brace 28 are slotted at 28^a for nice adjustment of the auxiliary stop with respect to the trip-lever.

A further improvement is best shown in Fig. 2, the purpose of which is to prevent leakage of grain through the hopper and outside the rotor buckets while the rotor is turning to discharge a load. This is effected by providing the rotor with segmental rims 29, preferably connecting with the backs of the buckets by partitions 29^a and extending the feed-spout 5 closely to the periphery of the rotor, so that the rims as they pass under the spout arrest the flow of grain until the succeeding bucket is in position for filling. This prevents any possible escape of grain through the hopper past the buckets, and insures accurate filling of the buckets according to a predetermined weight.

A registering device is supported to cooperate with the weigher, driven by a sprocket chain 30, as indicated in the patent above referred to.

We claim:

1. An automatic weigher for grain and the like, comprising a hopper, means for delivering material to and from the same, a rotor provided with a series of equal buckets, and turning by the weight of its load in the hopper, a series of equally spaced lateral stop-studs, a scale-beam having a trip-lever disposed in the path of said studs, a frictional spring retarder in the path of the stud's movement toward the trip-lever, means adapted for the rocking of said spring, and screw-threaded adjusting means connecting with said rocking means.

2. In an automatic weigher having a gravity actuated rotor turnably mounted in a hopper, and provided with lateral stop-studs, an intercepting weighted trip-lever, a frictional retarder in the path of the studs as they approach the trip-lever, and an auxiliary positive stop for the rotor, the same being a hook with a cam face disposed normally in the path of said studs, whereby the hook is moved to stopping position by the passage of

a stud, but moves to normal position as soon as the rotor stops.

3. In an automatic weigher having a gravity-turning rotor mounted in a hopper, and provided with lateral stop-studs, an intercepting, weight-controlled trip-lever, an auxiliary positive rotor-stop, the same being a tiltable member provided with an abutment to intercept the stud when said rotor-stop is tilted thereby, but normally out of the path thereof, and an adjustable support for said motor-stop.

In testimony whereof we affix our signatures.

SHELDON W. SMITH.
EDMUND S. SMITH.

feed cord 83 is flexible in nature and leads to a portable electric appliance to which it is desired to supply electricity. The chamber 61 has a recess 84 formed in the rear mouth thereof, an insulation disc 85 being disposed in the recess 84 and secured therein to cover the rear end of the chamber 61 by screws 86 which are received in suitable threaded apertures provided in the head 60. A flat strip 87 of insulating material is bent into the shape of a split ring and disposed within the chamber 61 so as to effectively insulate the walls thereof from the electric conductors disposed therein. The ends of the strip 87 are spaced apart, opposite the neck 62, to permit the cord 83 to pass out through the neck.

The operation of my invention is as follows:

Service outlet members 11 are placed in convenient service locations where it is desired to use a portable electric appliance and the feed cord 83 of each electric appliance is provided with an attachment plug 12. When the portable appliance is moved within reach of a given service outlet 11, the attachment plug 12 of this appliance is forced over the box 15 of the service outlet member 11 as shown in Fig. 1. As previously described, the position in which the attachment plug 12 is shown upon the box 15 in Fig. 1 is the only position in which the plug can be placed upon the box. Also, it will be noted that when the attachment plug is in this position the cord 83 hangs downward therefrom, there being no tendency to bend the feed cord 83 and thus rupture the wires therein.

Inasmuch as the holes 75 in the insulation disc 69 of the attachment plug 12 are co-axially aligned with the holes receiving the receptacles 34 in the service outlet member 11, the prongs 76 which are secured in the holes 75 will be received through the holes 28 into the receptacles 34 when the attachment plug 12 is forced over the box 15. Moreover, it will be noted that due to the freedom of the receptacles 34 to be translated a limited distance in the holes 29, they will adapt themselves to the alignment of the prongs 76 so that the resilient members 79 will bear with equal pressure against the faces of the chambers 35 of the receptacle 34. This will give a maximum of conductivity in the contact between the receptacles 34 and the prongs 76. This freedom of the receptacles 34 entirely prevents the possibility of a prong 76 entering a receptacle 34, and due to a slight misalignment therewith bearing against the receptacle 34 with only two of the four yieldable elements 79 of the prong 76.

The habit of many employees, operating portable electric appliances, of using the feeding cord 83 to pull the attachment plug 12 from the service outlet member 11 will be completely discouraged by the novel serv-

ice connection of my invention. This will be brought about by the impossibility of pulling the plug 12 from the outlet 11 by means of the cord 83, it being necessary to manually grasp the plug 12 in order to engage and disengage it from the outlet 11.

I claim as my invention:

1. An electric service connection including: a body having a cavity; a head mounted in said cavity and formed of an intermediate disc and two adjacent discs of insulating material, there being an elongated slot in the intermediate disc and openings in the adjacent discs, said openings being in registry with said slot; and a hollow receptacle having a body portion extending through the opening in one of said adjacent discs and provided with a shoulder disposed in said slot, said shoulder being larger than said openings so that the receptacle is retained against axial movement by the adjacent discs, and the body portion of the receptacle being smaller than the opening through which it extends so as to permit a transverse shifting of said receptacle.

2. An electric service connection including: a body having a cavity; a head mounted in said cavity and formed of an intermediate disc and two adjacent discs of insulating material there being an elongated slot in the intermediate disc and openings in the adjacent discs, said openings being in registry with said slot; and a hollow receptacle having a body portion extending through the opening in one of said adjacent discs and provided with a shoulder disposed in said slot, said shoulder being larger than said openings so that the receptacle is retained against axial movement of the adjacent discs and said shoulder being formed to cooperate with the walls of said slot to prevent rotation of the receptacle, and the body portion of the receptacle being smaller than the opening through which it extends so as to permit a transverse shifting of said receptacle.

3. An electric service connection including: a body having a cavity; a disc of insulating material mounted in said cavity and having an elongated slot formed therein; a second disc of insulating material mounted in said cavity adjacent said slotted disc and having formed therein an opening registering with said slot, a hollow receptacle having a body portion extending through said opening and provided with a shoulder disposed in said slot, said shoulder being larger than said opening so that the receptacle is retained against axial movement in one direction by said second disc and the body portion of the receptacle being smaller than said opening so as to permit a transverse shifting of said receptacle; and means engaging the opposite side of said shoulder to prevent axial movement of the receptacle in the opposite direction.

4. An electric service connection includ-

ing: a body having a cavity; a disc of insulating material mounted in said cavity and having an elongated slot formed therein; a second disc of insulating material mounted in said cavity adjacent said slotted disc and having formed therein an opening registering with said slot; a hollow receptacle having a body portion extending through said opening and provided with a shoulder disposed in said slot, said shoulder being larger than said opening so that the receptacle is retained against axial movement in one direction by said second disc and the body portion of the receptacle being smaller than said opening so as to permit a transverse shifting of said receptacle; and a third disc of insulating material disposed adjacent the opposite side of said slotted disc to engage said shoulder and thus prevent axial movement of the receptacle in the opposite direction, said third disc having an opening registering with said slot and smaller than the width thereof.

5. An electric service connection including: a body having a cavity; a disc of insulating material mounted in said cavity and having an elongated slot formed therein; a second disc of insulating material mounted in said cavity adjacent said slotted disc and having formed therein an opening registering with said slot; a hollow receptacle having a body portion extending through said opening and provided with a shoulder disposed in said slot, said shoulder being larger than said opening so that the receptacle is retained against axial movement in one direction by said second disc and said shoulder being formed to cooperate with the walls of said slot to prevent rotation of the receptacle, and the body portion of the receptacle being smaller than said opening so as to permit a transverse shifting of said receptacle; and a third disc of insulating material disposed adjacent the opposite side of said slotted disc to engage said shoulder and thus prevent axial movement of the receptacle in the opposite direction, said third disc having an opening registering with said slot and smaller than the width thereof.

6. An electric service connection including: a body having a cavity; a head mounted in said cavity and formed of an intermediate disc and two adjacent discs of insulating material, there being an elongated slot in the intermediate disc and openings in the adjacent discs, said openings being in registry with said slot; a hollow receptacle having a body portion extending through the opening in one of said adjacent discs and provided at one end with a flange disposed in said slot, said flange being larger than said openings so that the receptacle is retained against axial movement by the adjacent discs, and the body portion of the receptacle being smaller than the opening through which it extends so as to permit a transverse shifting of said recep-

tacle; and a wall mounted in said cavity and spaced from said head, said wall having an aperture through which the opposite end of the receptacle passes and of such size as to permit transverse shifting of the receptacle, the shifting movement of said opposite end of the receptacle thus being limited by the marginal walls of said aperture.

7. An electric service connection including: a body having a cavity; a head mounted in said cavity and formed of an intermediate disc and two adjacent discs of insulating material, there being a plurality of elongated slots in the intermediate disc circularly spaced about the axis of said disc and a plurality of openings in the adjacent discs in registry with said slots; and a plurality of hollow receptacles each having a body portion extending through an opening of one of said adjacent discs and provided with a shoulder disposed in the companion slot, said shoulder being larger than the openings in the inner and outer disks so that the several receptacles are retained against axial movement by the adjacent discs, and the body portions of the receptacles being smaller than the openings through which they extend so as to permit individual transverse shifting of said receptacles.

8. An electric service connection including: a body having a cavity; a head mounted in said cavity and formed of an intermediate disc and two adjacent discs of insulating material, there being a plurality of elongated slots in the intermediate disc circularly spaced about the axis of said disc and a plurality of openings in the adjacent discs in registry with said slots; and a plurality of hollow receptacles each having a body portion extending through an opening of one of said adjacent discs and provided with a shoulder disposed in the companion slot, said shoulder being larger than the openings in the inner and outer disks so that the several receptacles are retained against axial movement by the adjacent discs, and the body portions of the receptacles being smaller than the openings through which they extend so as to permit individual transverse shifting of said receptacles, the several slots being arranged in pairs with the slots of each pair diametrically disposed in parallel planes on opposite sides of the axis of said head so that the receptacles therein are shiftable only in said parallel planes.

9. An electric service connection including: a body having a cavity; a head mounted in said cavity and formed of an intermediate disc and two adjacent discs of insulating material, there being a plurality of elongated slots in the intermediate disc circularly spaced about the axis of said disc and a plurality of openings in the adjacent discs in registry with said slots; and a plurality of hollow receptacles each having a body portion extend-

ing through an opening of one of said adjacent discs and provided with a shoulder disposed in the companion slot, said shoulder being larger than the openings in the inner and outer disks so that the several receptacles are retained against axial movement by the adjacent discs, and the body portions of the receptacles being smaller than the openings through which they extend so as to permit individual transverse shifting of said receptacles, the size and contour of each of said shoulders and its associated slot being such as to permit only non-radial shifting of the receptacles relative to the axial center of said head so as to change the distance of said receptacles from said center.

10. An electric service connection including: a body having a cavity; a head mounted in said cavity and formed of an intermediate disc and two adjacent discs of insulating material, there being a plurality of elongated slots in the intermediate disc circularly spaced about the axis of said disc and a plurality of openings in the adjacent discs in registry with said slots; a plurality of hollow receptacles each having a body portion extending through an opening of one of said adjacent discs and provided at one end with a shoulder disposed in the companion slot, said shoulder being larger than the openings in the inner and outer disks so that the several receptacles are retained against axial movement by the adjacent discs, and the body portions of the receptacles being smaller than the openings through which they extend so as to permit individual transverse shifting of said receptacles; and a wall mounted in said cavity and spaced from said head, said wall having apertures through which the opposite ends of the receptacles pass and of such size as to permit said transverse shifting of said receptacles, the shifting movements of said opposite ends of the receptacles thus being limited by the marginal walls of said apertures.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 21st day of May, 1926.

JAMES H. CANNON.