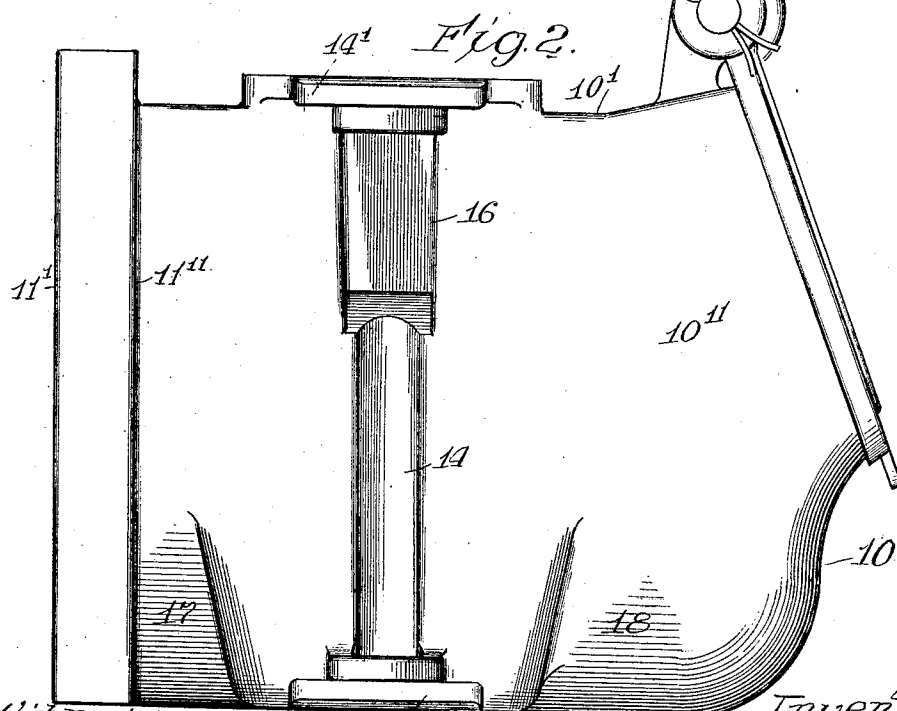


APPLICATION FILED JUNE 25, 1908.

Patented May 27, 1913.

3 SHEETS--SHEET 1.



By

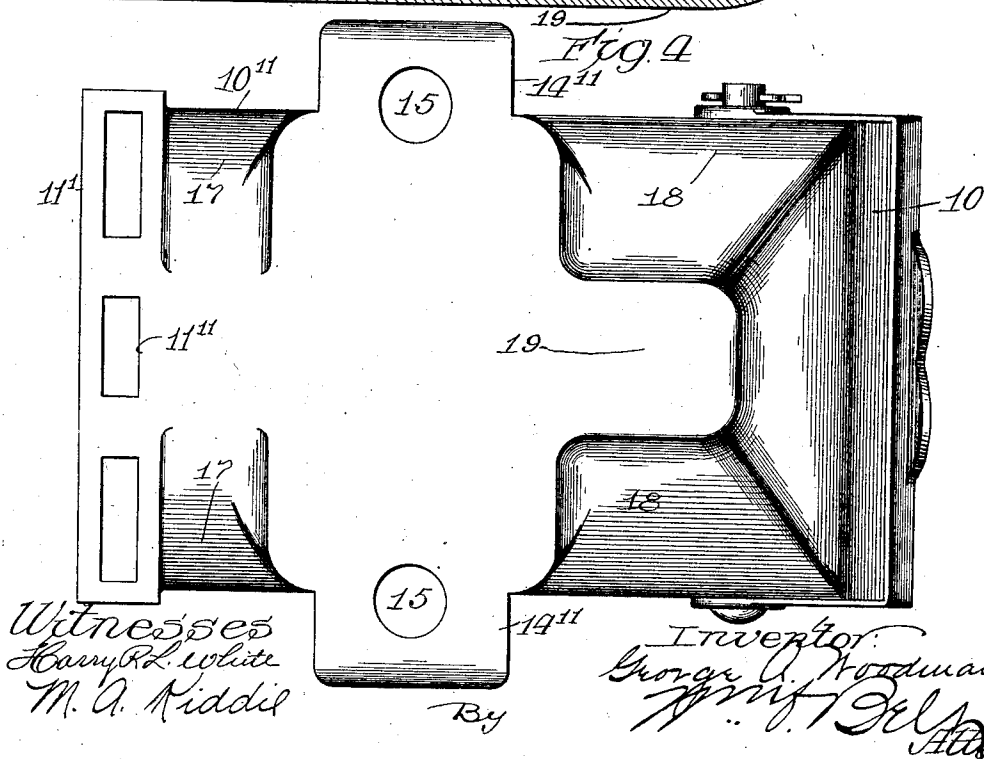
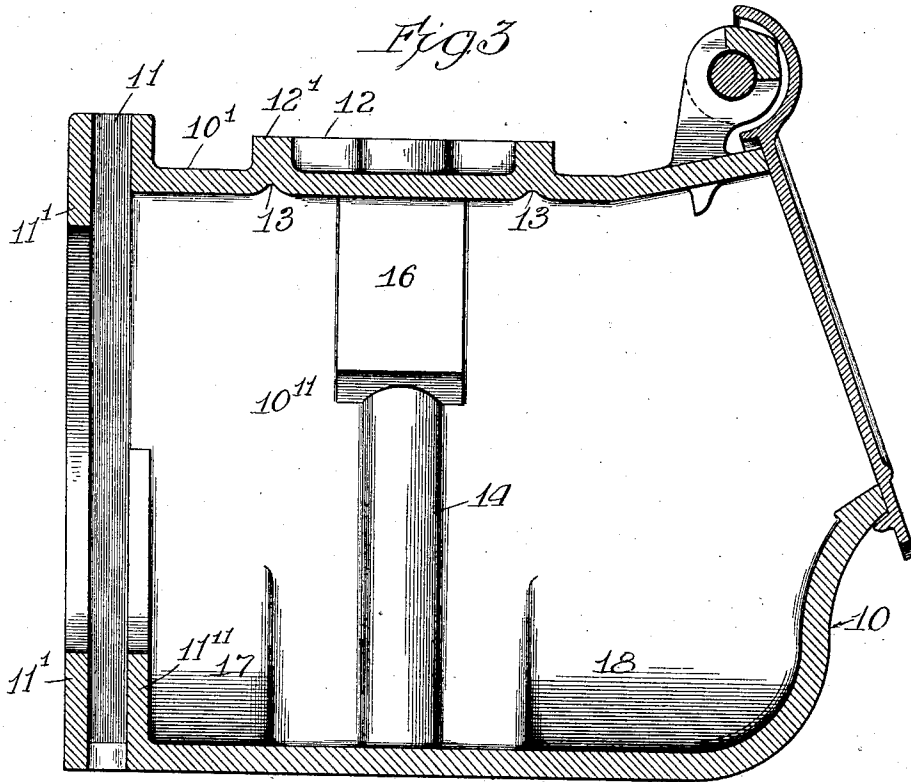
Inventor:
George A. Nordman
Printed
Attest:

G. A. WOODMAN.
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3 SHEETS-SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 5

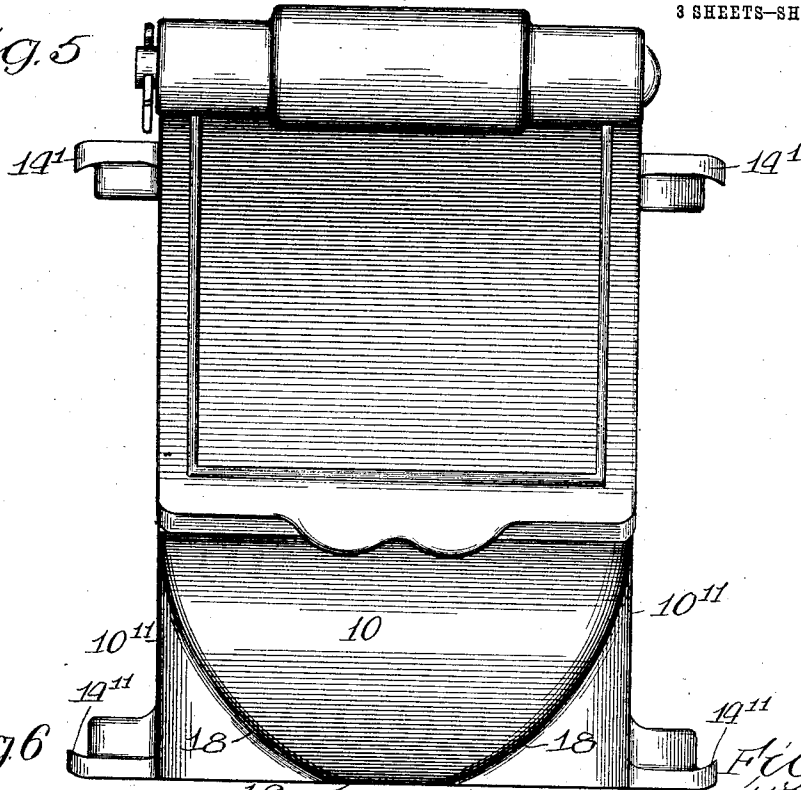


Fig. 6

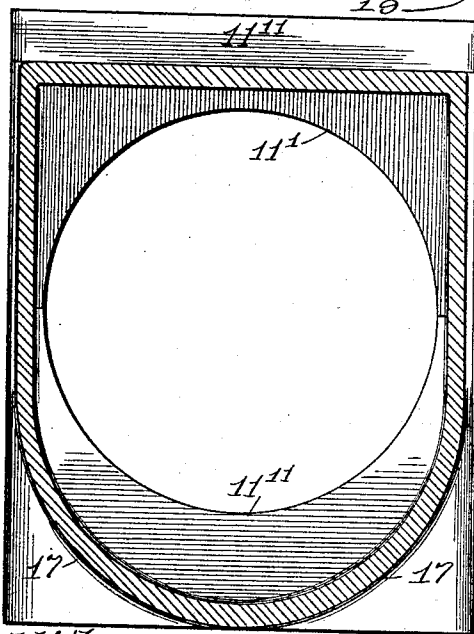
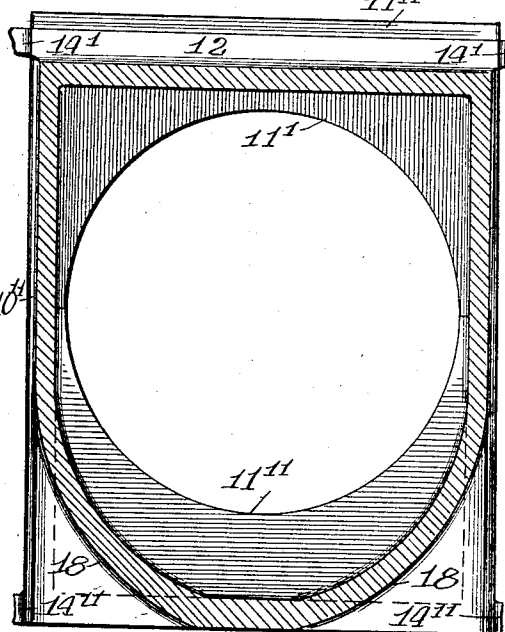


Fig. 7



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE ALVERADO WOODMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO KIRBY EQUIPMENT COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

JOURNAL-BOX.

1,062,680.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed June 25, 1908. Serial No. 440,205.

To all whom it may concern:

Be it known that I, GEORGE A. WOODMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Journal-Boxes, of which the following is a specification.

Heretofore journal boxes have been made principally of ordinary cast iron and lately, to some extent, of malleable cast iron but the latter have constituted only a small proportion of all the journal boxes made and used. The ordinary cast iron journal boxes can be manufactured at low cost but are objectionable because they fracture easily and in this respect are expensive to maintain and unsafe in service. The malleable cast iron journal boxes are more expensive than the ordinary cast iron boxes and are somewhat stronger, but they are also objectionable for lack of strength and cost of maintenance.

Attempts have been made to make journal boxes of cast steel because of the strength of this material, but such attempts have not proven commercially successful on account of the great loss of castings in manufacture and the consequent expense involved. These losses are due largely to shrinkage cracks in the castings and I have found that such cracks are occasioned to a very large extent by the thickness and lack of uniformity and evenness of the section.

It is my object to provide a journal box which can be successfully made commercially of cast steel and with this end in view the invention consists in making a box of novel form and construction having an even thickness of metal to reduce shrinkage in casting.

In the accompanying drawings I have illustrated one embodiment of the invention in which—

Figure 1 is a top plan view. Fig. 2 is a side elevation. Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 1. Fig. 4 is a bottom plan view. Fig. 5 is a front elevation. Figs. 6 and 7 are sectional views on the lines 6—6 and 7—7 of Fig. 1.

My present invention does not relate to the lid and as the box may be adapted for lids of a variety of different kinds I will not refer to the construction of the lid in this specification.

The body 10 of the box is provided at its rear end with a dust guard opening 11 formed by the outer wall 11' and the inner

wall 11". On the top of the box I provide an arch-bar seat 12 which, as shown in Fig. 1, comprises a rectangular rib 12' projecting upward from the top 10' of the box. To reduce the section where the rib joins the top of the box transversely thereof I provide a recess 13 in the top of the box beneath the rib (Fig. 3). The sides 10" of the box are provided exteriorly with recesses 14 and top and bottom lugs 14', 14'', respectively, to receive the fastening bolts which are seated in said recesses and pass through openings 15 in said lugs. The sides of the box are indented or pressed inwardly to form stop lugs 16 interiorly for the journal bearing (not shown). The shape of the box is, generally speaking, rectangular but the bottom of the box is preferably rounded, (Figs. 6, 7) except at the transverse section through the arch-bar seat. That is to say, the bottom of the box is rectangular in section transversely both interiorly and exteriorly beneath the arch bar seat 12 but is preferably rounded transversely both interiorly and exteriorly at 17 between the arch-bar seat section and the inside dust guard wall, and also rounded transversely both interiorly and exteriorly at 18 between the arch-bar seat section and the lifting jack seat 19. Heretofore the lower lugs for the fastening bolts have been formed as projections of considerable weight and structure on the sides of the body of the box and in making the box in this way a bottom core is necessary and considerable loss has been occasioned by reason of bad castings. I avoid this by shaping the body of the box itself with straight sides to accommodate the fastening bolts which are seated in the recesses 14.

In the construction of the box the walls thereof are made comparatively thin and of substantially even and uniform thickness throughout. The bottom of the box is preferably made somewhat thicker than the side walls, and tapers gradually at the rounded parts to the side walls (Figs. 6-7). This facilitates the flow of metal in casting which enters the mold at the rear end thereof. On the bottom of the box I provide the seat 19 to receive a jack for lifting the box to replace the journal.

The body of the box is made of substantially uniform thickness throughout and T-joints, which are especially objectionable because they produce excessive shrinkage

and cracks, are wholly eliminated. This uniform thickness enables the metal to run freely in the casting operation and avoids choking which frequently happens where the section varies. By eliminating the guides which have been heretofore provided on the sides of the box to receive the fastening bolts, and which have been a great source of trouble in casting and occasion the loss of many castings, I not only simplify the construction of the box but also materially reduce the cost of manufacture both as regards weight and losses in casting.

The cast steel boxes which have been made heretofore, but to a very limited extent, have not only differed from my invention in form and construction but they have also been constructed with very thick sections and consequently the weight of the box has been greatly increased. My invention provides for making a box of cast steel with comparatively thin sections, thus materially reducing the weight which, of course, correspondingly lessens the cost of manufacture, and without affecting the strength of the box. In fact I have found by practical demonstration that a cast steel box made in accordance with my invention is fully twice as strong as a malleable cast iron box and three times as strong as an ordinary cast iron box and at the same time is much less in weight than the malleable cast iron box and considerably less in weight than the ordinary cast iron box.

By making the box in the form and construction herein disclosed only one core is required and I avoid the necessity of using a bottom core and chill blocks which latter have been frequently and of necessity used heretofore in an endeavor to prevent shrinkage and resulting cracks in the casting. And in the construction of the box I prefer to provide fillets at all joints and to round all corners for this is found desirable in the manufacture of a cast steel journal box.

What I claim and desire to secure by Letters Patent is:

1. As a new article of manufacture, a cast steel journal box having an integral arch-bar seat and outside and inside dust guard walls, said box being substantially rectangular in section through the arch-bar seat and having its bottom rounded transversely both interiorly and exteriorly between the arch-bar seat and the inside dust guard wall.

2. As a new article of manufacture, a cast steel journal box substantially rectangular in section through the arch-bar seat and having its bottom rounded transversely both interiorly and exteriorly adjacent to said rectangular section and on both sides thereof.

GEORGE ALVERADO WOODMAN.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."