Oct. 18, 1927. 1,645,747

J. J. FRY

SWIVEL

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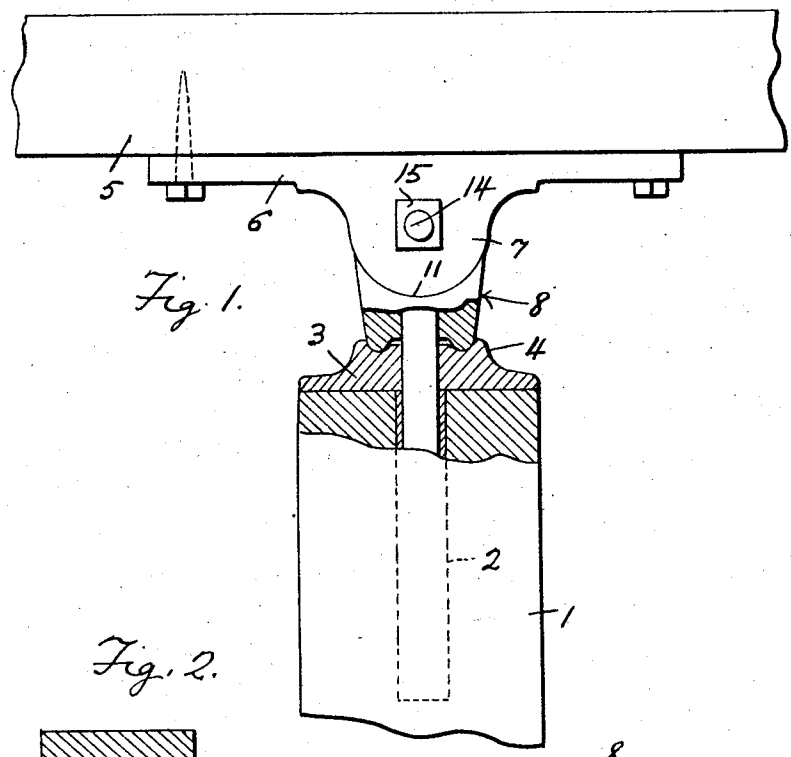
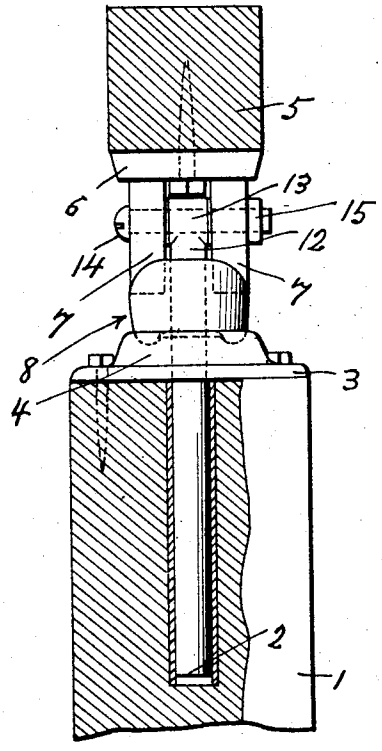


Fig. 1.

Fig. 2.



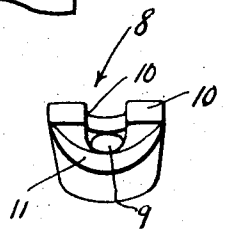


Fig. 3.

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SWIVEL.

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This invention relates to an improved swivel construction which is especially, but not necessarily adapted to be used in the construction of a derrick such as is employed in hay and grain loading and unloading devices.

Briefly, the invention relates to a structure which embodies a special plate for disposition on top of a standard, an attaching plate for a rocking boom or beam, and a special collar interposed between these two plates, the collar being constructed to provide a bearing for supporting ears carried by the attaching plate, and being further constructed to provide a novel rotary joint between itself and the top plate on the standard.

My principal aim is to provide a structure of this kind which permits free rocking of the boom for raising and lowering purposes and permits it to be rotated about a vertical axis simultaneously with the rocking movement to facilitate loading and unloading.

Other features and advantages will become apparent from the following description and drawing.

In the drawings:

Figure 1 is a side view with portions in section and elevation showing the complete structure,

Fig. 2 is a view at right angles to Fig. 1,

Fig. 3 is a perspective view of the thrust and bearing collar.

Referring to the drawing in detail, it will be seen that the reference character 1 designates a vertically disposed supporting standard which is provided at its top with a central socket in which a metal lining tube or sleeve 2 is fitted. A circular plate 3 is secured, in any appropriate way, to the top of the standard and is provided at its center with an opening in registry with the metal-lined socket. It will be noted that the portion 4 of this plate is thickened and provided with an annular groove.

The beam or boom is represented by the reference character 5. As before indicated a plate 6 of elongated form is fastened to the underside of this beam and this plate is provided between its ends and on opposite longitudinal sides with depending ears 7, the lower edges of which are rounded to represent a segment of a circle. These ears are provided with alined bolt holes.

Interposed between the ears and the grooved portion of the plate 3 is a special bearing and thrust collar designated generally by the reference character 8. The collar is formed on its bottom with a circular rib of substantially semi-circular cross section, the same being seated in the groove in the part 4. By directing attention to Fig. 3 it will be seen that the collar is provided with a central spindle hole 9 and with central upstanding lugs 10 and on opposite sides of these lugs with substantially semi-circular seats 11 for reception of the correspondingly shaped portions of the aforesaid ears 7. A swivel and retaining pin 12 extends downwardly through the hole 9, through the central hole in the plate 3 and into the tube 2. This constitutes a king bolt and it will be noted that it is provided at its upper end with an eye 13 located between the ears 7 and it merges with the apertures in these ears. A bolt 14 passes through said apertures and is equipped with a retaining nut 15.

From the foregoing, it is obvious that the ears 7 have rocking contact with the semi-circular seats 11 in the special swivel collar 8. The swivel spindle or bolt 12 maintains the parts in assembled relation and allows the simultaneous rocking and swivel action of the beam 5.

It is believed that by considering the description in connection with the drawings a clear understanding of the operation and construction of the invention will be had. Therefore, a more lengthy description is thought unnecessary.

Minor changes coming within the field of invention claimed may be resorted to if desired.

I claim:

1. In a structure of the class described, in combination, a vertical supporting standard having a central socket at its top, a wear plate on top of the standard having a central opening alined with said socket, a beam, a spindle and connecting bolt having pivotal connection with the beam and extending into said socket, and means interposed between said top plate and beam for transmitting the load from the beam to said top plate.

2. In a structure of the class described, a standard top plate having a central opening surrounded by an annular groove, a beam plate provided with spaced parallel depending ears having rounded lower edge portions, a collar interposed between said ears and top plate, said collar having a rib for reception in said groove and being provided with semi-

circular seats for reception of said ears, and means for maintaining said parts in assembled relation.

3. In a structure of the class described, a vertical supporting standard having a central socket in its top, a top plate fitted on the upper end of the standard and connected to the latter, said top plate having a central hole in alinement with said socket, having a central thickened portion surrounding the hole, and said thickened portion being formed in its top with an annular groove, a plate adapted to be attached to a rocking beam, said beam plate having spaced parallel ears provided with a rounded lower edge portion, a circular collar interposed between said ears and said top plate, said collar having an annular rib on its bottom fitted into said groove, being provided with a central hole in alinement with the hole in said top plate, being formed with semi-circular bearing seats, and upstanding lugs, said ears fitting rockably in said seats, and said lugs extending up between said ears, a spindle and connecting bolt extending down through the holes in said collar and top plate and into said sockets, said spindle bolt having the head on its upper end located between said ears, and a connecting bolt passing through said ears and through the head on said spindle bolt.

In testimony whereof I affix my signature.

JOHN J. FRY.