J. PORTEOUS.

REVOLVING HARROW.

APPLICATION FILED FEB. 1, 1910.

982,091.

Patented Jan. 17, 1911.

Fig. 1.

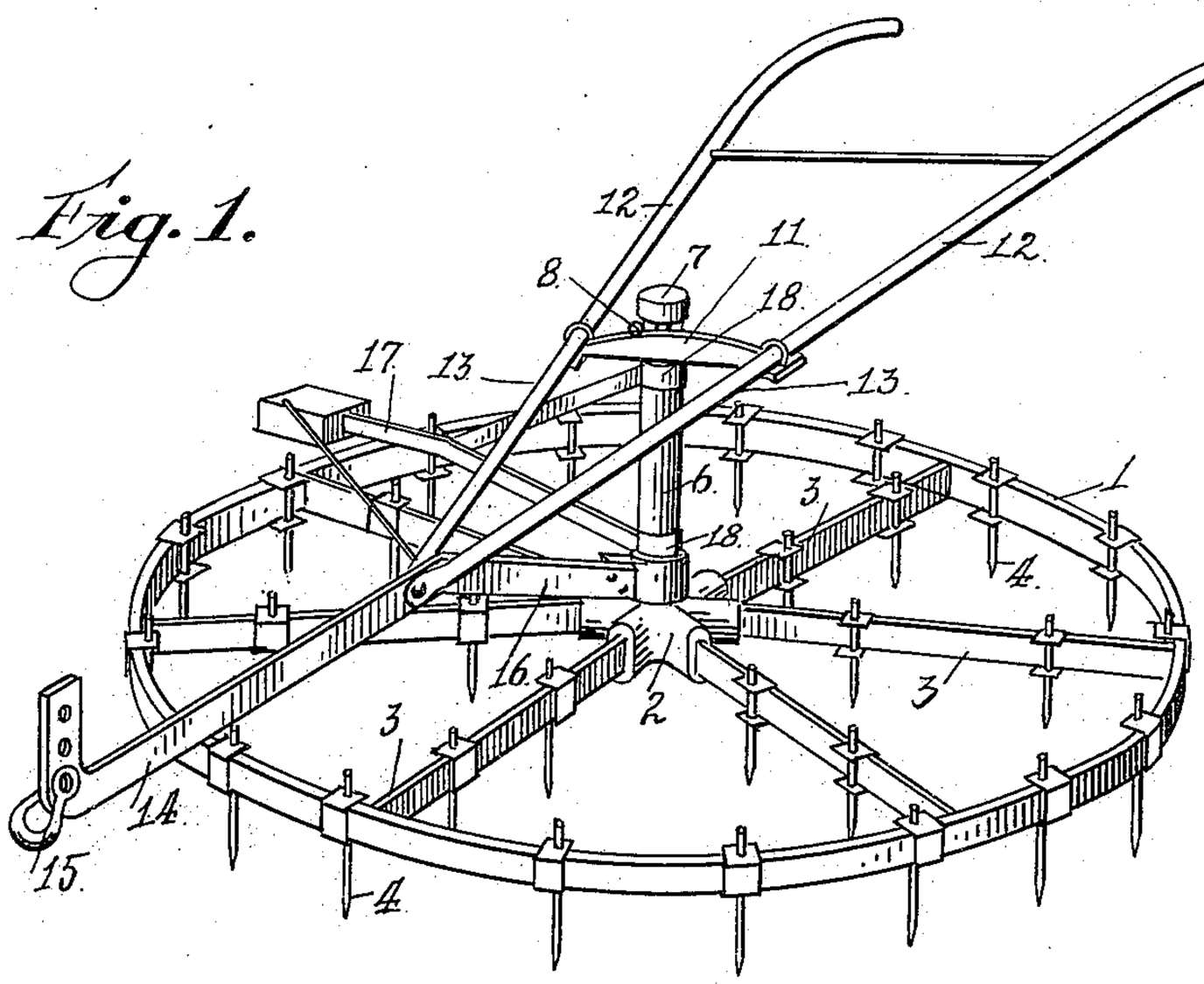
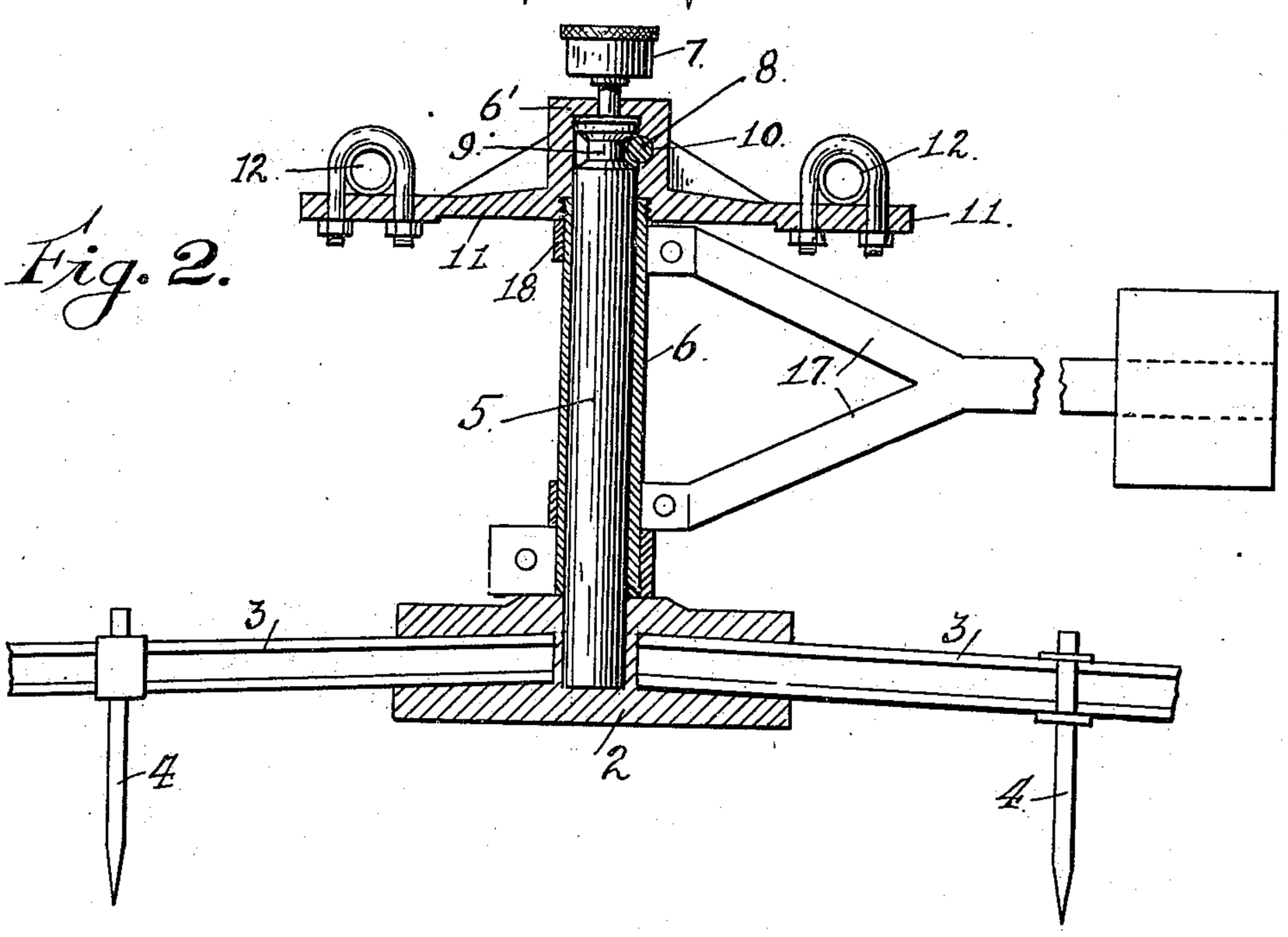


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES PORTEOUS, OF FRESNO, CALIFORNIA.

REVOLVING HARROW.

982,091. Specification of Letters Patent. Patented Jan. 17, 1911.

Application filed February 1, 1910. Serial No. 541,213.

To all whom it may concern:

Be it known that I, JAMES PORTEOUS, a citizen of the United States, residing at Fresno, in the county of Fresno and State of California, have invented certain new and useful Improvements in Revolving Harrows, of which the following is a specification.

My invention relates to the class of rotary-harrows, and its object is to provide a practical and efficient dust-proof journal-bearing for its axle-shaft or pivot, which can also be readily kept lubricated, and which is not liable to rust. In this class of harrows, in which the revolving frame, must, necessarily, have its draft-attachments, weight-arm and handles carried by the journal-bearing of its axle-shaft, it is essential that the journal surfaces shall be capable of being easily lubricated, kept free from dust, protected against rust and shall be held against relative endwise movement, in order that the frame in meeting inequalities of surface over which it travels shall not drop away from its bearing and thereby tend to disarrange the proper effect upon it of the weight arm which causes its rotation and influences the direction of said rotation; or to let in dirt with all its disadvantages.

My invention provides for all these essentials in a simple, practical and efficient manner, and to this end my invention consists in the novel construction and arrangement of parts which I shall hereinafter fully describe, by reference to the accompanying drawings in which—

Figure 1 is a perspective view of my harrow. Fig. 2 is a diametrical section of the same.

The harrow frame comprises the usual rim 1, hub 2, radial arms 3, and teeth 4. Rising from and fixed in the hub, usually by casting the hub upon it, is the axle-shaft 5. Over this shaft is fitted to inclose it, the tubular bearing 6 which serves as a journal box for it. The top of this bearing 6 is closed by a cap 6′, which covers the top of the axle shaft, the lower end of the bearing resting on the hub 2 of the frame, and leaving, preferably, a clearance between its cap and the upper end of the axle shaft. This furnishes a complete protection against dust and rust. It also enables me to fit on the closed-top or cap of the tubular bearing 6 an oil cup 7, the duct of which communicates with the journal surfaces within. Now, in order to provide against endwise movement of the axle-shaft in its tubular bearing, I provide a suitable lock between them, which will serve this purpose, and yet permit of the necessary rotary movement of the axle-shaft in its journal. This lock may be of any suitable character, but I deem for this purpose, the device here shown to be practical and efficient. It consists of a cross-key 8, which is removably seated in an annular groove 9 of the axle-shaft and an opposing groove 10 in the bearing cap. This key can be easily inserted and as readily removed for any purpose, as can also the cap 6′ of the bearing.

11 is a bracket carried by or formed with the bearing cap 6′, to which bracket the handles 12 are clipped, the extensions 13 of said handles having attached to them the draft-bar or beam 14, with its clevis 15, and the brace 16, extending back to the lower end of the tubular bearing and secured thereto.

17 is the weight arm of usual character and function, mounted by the sleeves 18, on the tubular bearing 6.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is—

1. In a revolving harrow, the combination with a harrow frame provided with an elongated vertically disposed axle shaft, of a tubular bearing inclosing said axle shaft and extending into close proximity to said harrow frame, a cap rigidly secured to the upper end of said tubular bearing and overlying the top of said axle shaft and means for locking said cap to said axle shaft, said means permitting rotation of said axle shaft but preventing longitudinal movement thereof in its bearing.

2. In a revolving harrow, the combination with a harrow frame provided with an elongated vertically disposed axle shaft, of a tubular bearing inclosing said axle shaft and extending in close proximity to said harrow frame, a closed cap secured to the upper

portion of said tubular bearing, said axle being provided with an annular groove in the upper portion thereof and said cap with a groove adjacent the annular groove in the axle shaft, and a cross key fitting within the grooves within the axle shaft and cap.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES PORTEOUS.

Witnesses:
C. J. CRAWFORD,
IRENE WILSON.