(No Model.)

K. A. SMITH & J. E. WOODARD.

DETACHABLE GUIDE BEARING FOR RECIPROCATING RODS OF WINDMILLS.

No. 338,793. Patented Mar. 30, 1886.

Fig. 1

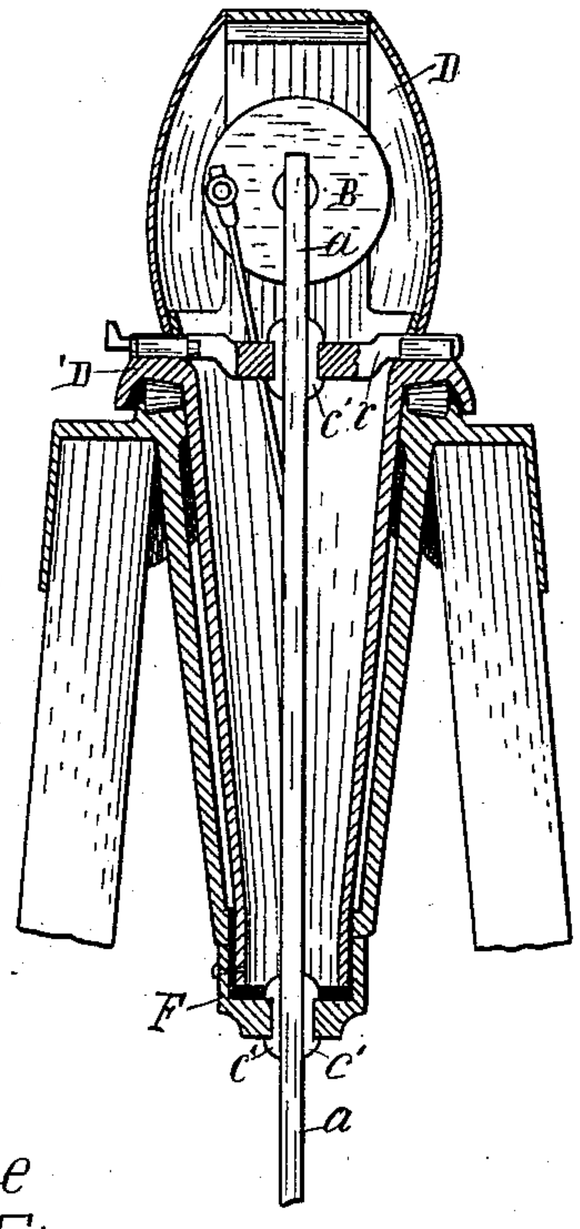


Fig. 3

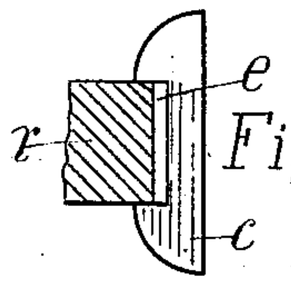
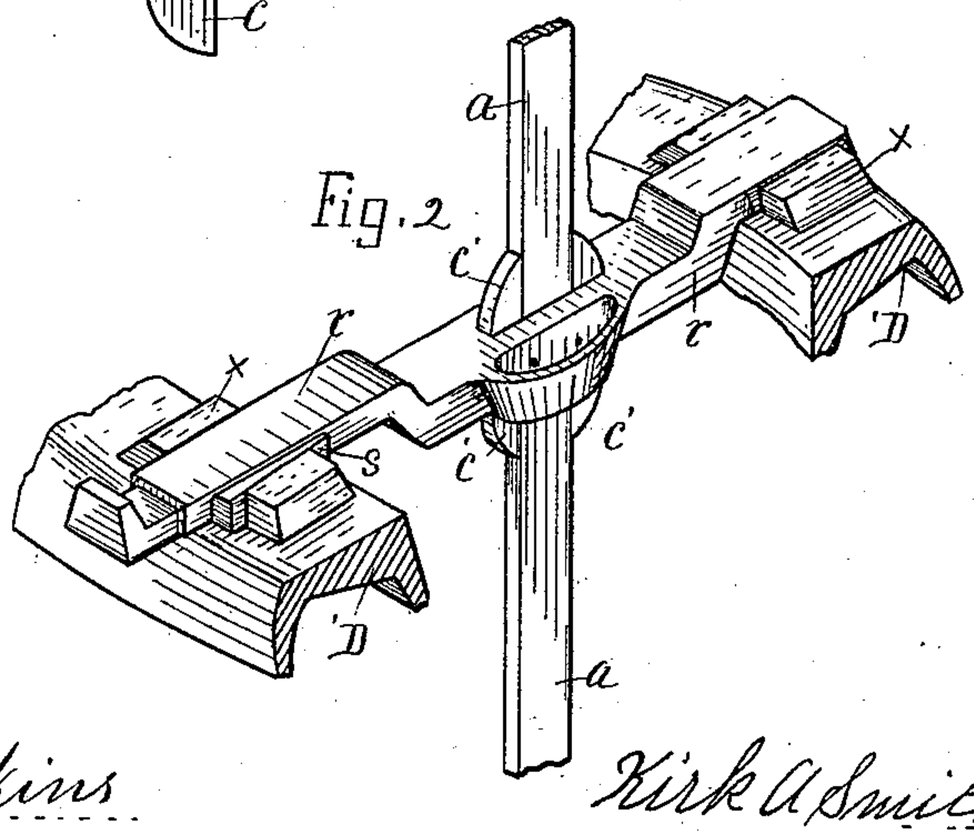


Fig. 2



Witnesses.
John C Perkins
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UNITED STATES PATENT OFFICE.

KIRK A. SMITH AND JOHN E. WOODARD, OF KALAMAZOO, MICHIGAN.

DETACHABLE GUIDE-BEARING FOR RECIPROCATING RODS OF WINDMILLS.

SPECIFICATION forming part of Letters Patent No. 338,793, dated March 30, 1886.

Application filed June 23, 1885. Serial No. 169,557. (No model.)

To all whom it may concern:

Be it known that we, KIRK A. SMITH and JOHN E. WOODARD, citizens of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented new and useful Improvements in Detachable Guide-Bearings for Reciprocating Rods of Windmills, of which the following is a specification.

The object of this invention is to provide the bearing of the reciprocating rod in windmills with detachable and adjustable guide-blocks for taking up the frictional wear caused by the reciprocating movement of the rod by removing the guide-blocks when unduly worn and substituting new ones therefor.

In the drawings forming a part of this specification, Figure 1 is a vertical section of the mill-head and its pendent tubular portion on a line with the reciprocating rod *a*. Fig. 2 are enlarged details in perspective pointed out by like letters in Fig. 1; and Fig. 3 is a detail of Fig. 1, showing the adjustability of the guide-blocks.

Referring to the letters marked on the drawings, *r* is a casting having a central hole, through which the reciprocating rod *a* plays in its up-and-down movement.

Heretofore castings have been fixed in the mill-head, having a hole for the rod *a* to play through of a size to form a guide-bearing for said rod; but, owing to the wear, the casting soon had to be replaced by a new one and at much inconvenience and expense. We make the hole wider than the width of the flat rod or bar *a*, and detachably insert a guide-block, *c'*, on each side, to receive the wear of each edge of the rod *a*. These blocks are straight on the front edge, and provided on the opposite edge with lugs catching over the upper and lower side of the casting, as shown in the drawings. We detachably connect the casting *r* with the mill-head, as in Fig. 2; but, so far as the blocks *c' c'* are concerned, this particular construction may or may not be followed, so long as the guide-blocks form a wearing to the bearing-hole on opposite edges of the reciprocating rod *a* in a detachable manner. The ends of the casting *r* are inserted in the dovetail lugs *x x*, and are held by a wedge, *s*. When the guide-blocks become worn unduly, but not entirely worn out, if preferred, a packing, *e*, may be inserted, as in Fig. 3, by which means the blocks may be used a while longer before being replaced by new ones. The blocks *c'* are made of chilled metal, so as to have a hard wearing-surface. We use guide-blocks *c'* at the lower end of the tubular pendent portion D' of the head or urn D, as in Fig. 1, the blocks *c'* being detachably placed in a hole through the cap F in the same manner as in the casting *r*. The cap F is detachably connected with the lower end of the tubular portion, by which means it is slipped off and on the rod *a* to adjust it, and to detach or change or adjust the blocks *c'*. This upper and lower bearing causes the reciprocating rod to run steadier; but, so far as the invention of the guide-blocks is concerned, the mill may have a bearing for the reciprocating rod *a* at one or more points, as desired.

The other parts of the mill here shown, including the crank-disk B and the pitman connecting it with the rod *a*, are well understood without further description here.

Having thus described our invention, what we claim is—

A guide-bearing for a reciprocating rod, said bearing being provided with detachable guide-blocks on the opposite wearing sides of said rod, substantially as set forth.

In testimony of the foregoing we have hereunto subscribed our names in presence of two witnesses.

KIRK A. SMITH.
JOHN E. WOODARD.

Witnesses:
L. B. DEITZ,
E. D. SMITH.