(No Model.)

J. R. WILLIAMS.

ADJUSTABLE SHOVEL BLOCK FOR PLOWS.

No. 342,058. Patented May 18, 1886.

Fig. 1.

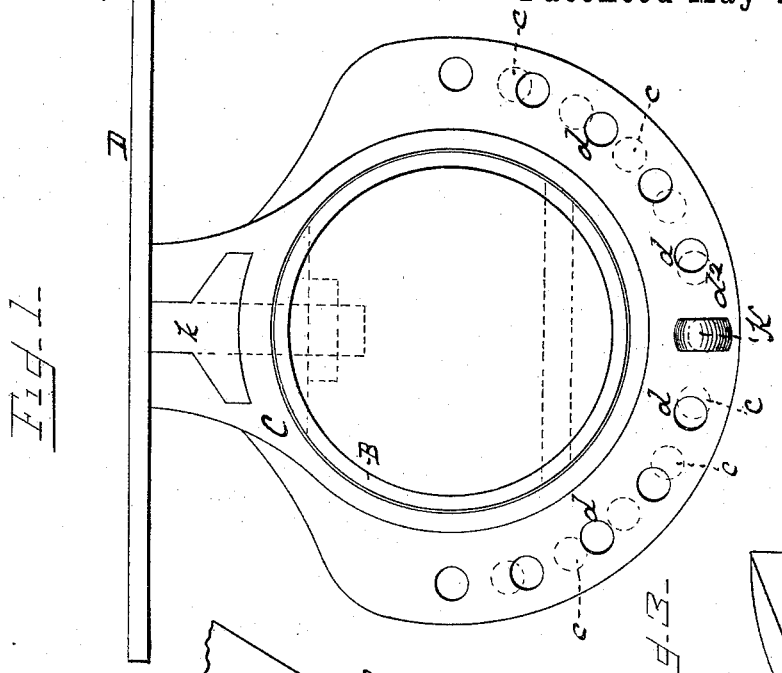


Fig. 3.

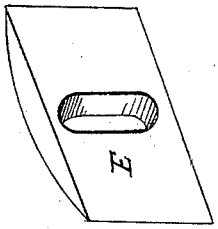
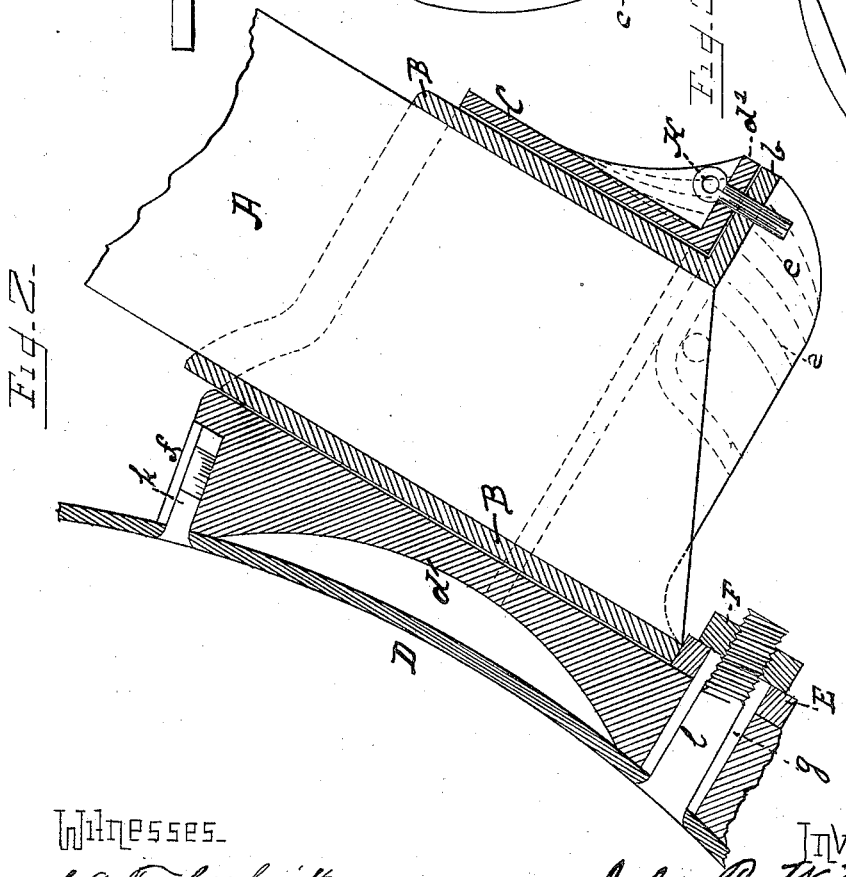


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN R. WILLIAMS, OF ST. LOUIS, MISSOURI.

ADJUSTABLE SHOVEL-BLOCK FOR PLOWS.

SPECIFICATION forming part of Letters Patent No. 342,058, dated May 18, 1886.

Application filed January 5, 1886. Serial No. 187,717. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. WILLIAMS, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Adjustable Shovel-Blocks for Plows; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, wherein—

Figure 1 is a top view of a block embodying my invention, showing the means for detachably securing the plow to the block, and for adjusting the block on the standard so as to set the shovel at any desired angle and adjust it accurately with relation to any other shovel of the gang. Fig. 2 is a vertical central section of the same. Fig. 3 is a detached view of the washer-block used with the bolt which secures the shovel to the shovel-block.

Like letters refer to like parts wherever they occur.

My present invention relates to the construction of shovel-blocks for securing the shovel to the plow-standard.

It is a very desirable thing that the user should have an accurate guide for setting any shovel to the desired angle and adjusting the other shovels into proper relation thereto, as on such adjustment depends the draft and effective operation of the plows. It is also desirable to be able to detach and attach the shovels readily without moving the plow to the shop. To accomplish the advantages specified I provide a sleeve-journal bearing with graduated flange for the standard and a sleeve-block with corresponding graduated flange for the shovel, together with means for locking the sleeves after adjustment, and this constitutes the first feature of my invention. The shovel I secure to the shovel-block by means of a key and bolt, so that the two are readily separable, and this constitutes the second feature of my invention. The means which I prefer for graduating and locking the sleeve-journal and sleeve-block are a series of perforations equally distant in either flange, but at different distances or different intervals in the two flanges, which enables at least two perforations—one in each flange—to register with very slight movement of the sleeve-block, whereby very fine adjustments of the shovel can be had, and this constitutes a third feature of my invention.

There are other minor features which will hereinafter more fully appear.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates the standard of a plow, and which may be of any of the several well-known characters or materials commonly employed for the purpose.

B indicates a sleeve-journal adapted to be rigidly secured thereon. The socket of this sleeve journal or bearing will conform to the cross-section of the standard to which it is to be attached. If the standard is of iron, the socket may be polygonal, and if the standard is of wood it may be a sleeve or hollow cylinder, as shown. This journal-sleeve may have a flange, *b*, which will not only support the sleeve shovel-block, but serve as the location of the graduated scale to indicate the extent of movement of the shovel-block in adjusting the same.

In the present instance I make the holes of the locking-cotter the scale, by arranging said hole *c* at regular intervals, say, seven-twelfths ($\frac{7}{12}$) of an inch apart, and arranging similar cotter-holes, *d*, in a flange of the sleeve shovel-block, the latter, say, six-twelfths ($\frac{6}{12}$) of an inch apart, so that at least two cotter-holes must register at every one-twelfth ($\frac{1}{12}$) of an inch movement of the rotary sleeve shovel-block.

The above figures are given for purposes of illustration, and not for limitation, as any other scale may be employed at the will of the user, so long as a definite scale is provided. The flange *b* may be strengthened by ribs, (indicated in dotted lines at *e*, Fig. 2.)

C indicates a rotating or sleeve shovel-block having a curved or otherwise suitably-shaped bearing-face, *d'*, for the shovel, and a key seat or slot, *f*, and elongated bolt-hole *g*, for securing the shovel to the block. This rotating sleeve-block has a flange, d^2, corresponding to that of the sleeve-journal B, upon which it bears or finds a rest when the parts are in use, and said flange is perforated at intervals for a cotter, as hereinbefore described.

D indicates the shovel provided with a suit-

able rearward-projecting T-headed key, *k*, adapted to fit the slotted key-seat *f*, so as to be retained therein and hold the shovel while permitting the use of different shovels having varying distances between the key *k* and retaining-bolt *l*, as will frequently happen. *l* indicates a bolt which passes through the elongated slot or bolt-hole *g*, and through a washer or block, E, which is convex to fit the rear of shovel-block C below the sleeve, and to form a stop for the sleeve-block and a square or flat seat for the nut F, which secures the shovel. It will be noted that this block or washer E locks the rotating sleeve-block C and prevents it from being thrust up on the journal-sleeve, so that the only motion of the sleeve-block C is a rotary one.

When in use, the sleeve-journal B is secured to the end of the plow-standard A, and the shovel D is attached to the rotating sleeve-block C by inserting its key *k* in the key-seat *f* of the block and passing the bolt *l* through the slot or bolt-hole *g* and washer-block E and tightening the parts by means of nut F.

In order to adjust the angle of the shovel to the line of draft, the cotter K is withdrawn and the sleeve-block rotated on the sleeve-journal the desired distance in either direction and the cotter again inserted. The relation of the holes in the two flanges *b* and *d*² will indicate the exact adjustment and enable the user to adjust any or all other shovels of the gang to correspond.

I am aware that a shovel-plow has been rendered adjustable by means of a hollow cone-shaped shovel-block having indentations or teeth on its interior, which was employed in conjunction with a conical casting having teeth which mesh with the indentations on the interior of the hollow cone, and also that a scraper has been adjustably secured to a standard by means of a foot or spread portion of the standard, a projecting pin thereon, and an indented washer interposed between the standard and plow; and I do not herein claim either of the above constructions, first, because therein a bolt and a nut are required to adjustably connect the standard, which nut is liable to loss, thus rendering the parts inoperative; secondly, because the standard does not suspend and retain the shovel-block and shovel, so as to prevent separation of the parts when the locking devices are lost or displaced; and, third, because the construction is mechanically different.

Having thus described the nature, operation, and advantages of my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a shovel-block for plows, the combination, with a journal on the standard, said journal having a perforated flange, of a rotatable shovel-block having a perforated flange, the intervals between the perforations differing from those of the journal-flange, substantially as and for the purposes specified.

2. The combination, with a shovel-block having a T-key seat, and an elongated bolt-slot, of a shovel-plow having a locking or T key, and a bolt for securing the shovel to the block, substantially as and for the purposes specified.

3. The combination, with a standard-journal having a flange, and sleeve shovel-block having a flange, a T-key seat, and a bolt-hole, of a stop-washer and a bolt for both securing the shovel to the block and preventing the block from riding up on the standard, substantially as and for the purposes specified.

4. In a shovel-block for plows, the combination, with a standard-journal having a perforated flange for suspending and retaining the shovel-block, of a sleeve shovel-block adapted to rotate on the journal and having a perforated flange, and a cotter or pin for locking the shovel-block after adjusting the same, substantially as and for the purpose specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 2d day of January, 1886.

JNO. R. WILLIAMS.

Witnesses:
SAMUEL M. HOUSTON,
J. G. HENDON.