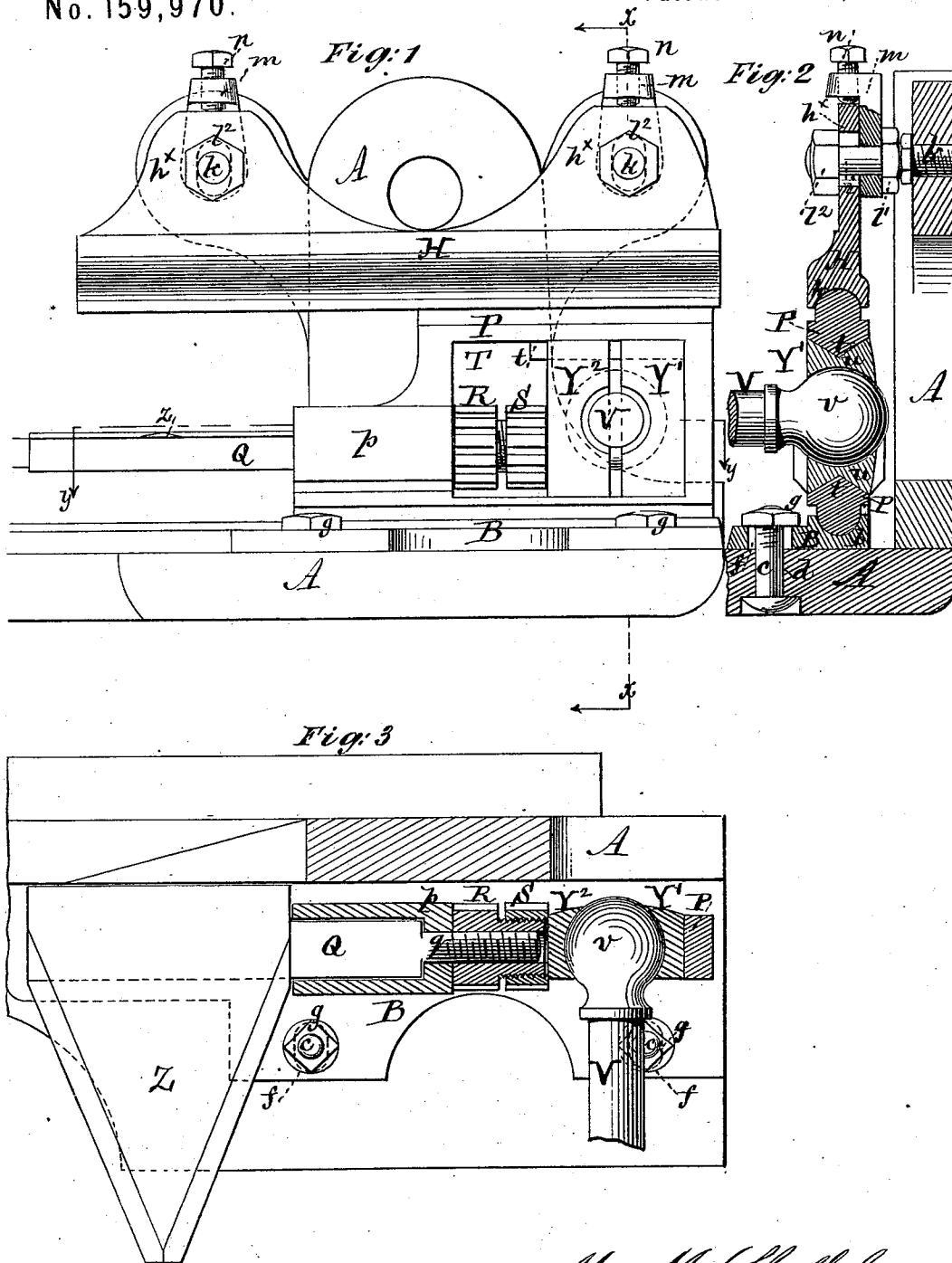


M. M. SHELLABERGER.
Sickle-Head for Harvesters.

No. 159,970.

Patented Feb. 16, 1875.



Witnesses:
Michael Ryan
Jed. Maynard

M. M. Shellabarger
by his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

MICHAEL M. SHELLABERGER, OF HAMILTON, MISSOURI.

IMPROVEMENT IN SICKLE-HEADS FOR HARVESTERS.

Specification forming part of Letters Patent No. **159,970**, dated February 16, 1875; application filed November 19, 1874.

To all whom it may concern:

Be it known that I, MICHAEL M. SHELLABERGER, of Hamilton, in the county of Caldwell and State of Missouri, have invented certain new and useful Improvements in Sickle-Heads for Reapers and Mowers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification:

My invention consists in a novel construction and arrangement of parts, whereby the coupling-shoe is relieved from wear and friction, the sickle-head may be adjusted laterally, and provision is made for attaching and removing the sickle-bar, and compensating for wear resulting from friction of the parts.

In the accompanying drawing, Figure 1 is a front view of my invention. Fig. 2 is a transverse vertical section taken in the line *x x* of Fig. 1. Fig. 3 is a longitudinal horizontal section taken in the line *y y* of Fig. 1.

A represents a coupling-shoe, which may be of any suitable construction. On the horizontal portion of the shoe rests the lower race B, which consists of a metallic plate secured to the shoe by bolts *c* passing through round holes *d* in the shoe, and slots *f* in the plate running transversely thereof, so that the plate may be adjusted laterally by moving it to the proper position, and tightening the nuts *g* on the bolts *c*. On the upper side of the plate B, near the rear edge, is a groove, *b*, which runs the entire length of the plate, and its cross-section describes an arc of a circle. The upper race consists of a plate, H, in the lower edge of which is a groove, *h*, of similar form to the groove *b* in the lower race. Near the ends and upper edge of the plate H are two ears, *h*^x, in which are slots *i* running transversely of the plate.

In the upper portion of the shoe A are two screw-threaded bolts, *k*, which extend outward toward the front of the shoe. Each of these bolts is provided with two nuts, *l*¹ *l*². The upper race H is attached to the shoe by passing the outer ends of the bolts *k* through the slots *i*, with the nuts *l*¹ between the shoe and the race, and the nuts *l*² on the outer ends of the bolts *k* outside or in front of the race. On the bolts *k*, between the nuts *l*¹ and the

race, are brackets *m*, which extend upward to a point somewhat higher than the upper edges of the ears *h*^x, and are bent horizontally outward or forward, so as to hang over said ears.

In the horizontal portion of the brackets are set-screws *n*, the points of which bear upon the upper edges of the ears *h*^x. The race H is adjusted vertically by loosening the nuts *l*², and moving the plate to the proper position on the bolts *k*, which pass through the slots *i*, and then tightening the nuts *l*² so as to hold the plate in the position so placed. The race H is prevented from upward displacement by means of the set-screws *n* bearing on the upper edges of the ears *h*^x, and it may be adjusted nearer to or farther from the shoe by turning the nuts *l*¹ *l*² in one or the other direction.

Between the upper and lower races works a metallic yoke, P, the upper and lower edges of which are rounded to correspond with the concave form of the grooves *h* and *b* in the races. This yoke has a reciprocating motion in a direction transversely of the line of travel of the machine, and the lower race B prevents wear of the shoe from friction. At its inner end, or the end nearest the platform of the harvester, is a tubular elongation, *p*, for the reception of the end of the sickle-bar Q, the shank *q* of which has a screw-thread formed on it for the reception of a nut, R, by means of which the bar Q is attached and secured to the yoke.

The inner edge of the yoke nearest the elongation *p* serves as a seat for the nut R, the portion of which opposite the seat is elongated and of less diameter than the other portion, and has an external screw-thread, *s*, formed on it for the reception of the nut S.

The upper and lower inner edges of the yoke P are tapering, as shown at *t*, or may have tongues or ribs formed on them, said ribs or tapering form extending about two-thirds of the length of said inner edges, leaving a portion, T, in which the upper and lower edges are perfectly straight and perpendicular to the sides of the yoke. The pitman which drives the sickle-bar has its outer end attached to a wrist-pin, V, having a spherical journal or bearing, *v*, which works in a boxing attached to the

yoke P, which boxing is made in two parts, Y¹ Y², each of which parts has a concave hemispherical bearing-surface for the spherical journal *v*, and has grooves *u* in its upper and lower edges corresponding with the tapering edges *t*. The boxing is placed in position in the yoke by inserting the parts Y¹ Y² in the portion T, and then sliding them to the position shown in Figs. 1 and 3, so that the tapering edges or tongues *t* will engage with the corresponding grooves *u*, as shown in Fig. 2, and prevent lateral displacement, the spherical journal *v* being inserted in the concave bearing-surfaces before sliding the part Y² into place. After the boxing Y¹ Y² and spherical journal *v* have been placed in position, as shown, the nut R, carrying the nut S, is placed in the opening T, the end of the cutter-bar Q is inserted in the tubular elongation *p*, and secured by the engagement of the nut R with the shank *q*. The nut S is then turned so as to bear against the part Y² of the boxing, and force it toward the part Y¹ sufficiently to cause the spherical journal *v* to work properly in the concave hemispherical bearings, and the parts are then in working condition.

This invention may be easily applied to any reaper or mower the coupling-shoe of which is of suitable construction; and its advantages will be readily observed, especially in cases where the shoe has been subjected to wear from the friction of the sickle-head, as the lower race B prevents wearing of the shoe. The lateral inclination of the cutter-bar, by which the points of the knives are canted up or down, is regulated by adjusting the upper race H nearer to or farther from the shoe by means of the nuts *l* *l*². The brackets *m* and set-screws *n* enable the upper race to be adjusted to the yoke P with the proper degree of nicety to insure the proper working of the parts, and also to compensate for wear

resulting from friction. By means of the nut S the two parts of the boxing are adjusted with relation to each other and the spherical journal *v*, and when the parts become worn from the result of friction they are adjusted to compensate therefor by turning the nut S, so as to force the parts Y¹ Y² toward each other. Another advantage resulting from this construction and arrangement of parts is, that the cutters Z may be attached to the sickle-bar Q close to the yoke, and the sickle-bar may be removed, when necessary, by drawing it outward through the finger-bar, there being no eye in the end of the bar to prevent its passage through the fingers.

What I claim as new, and desire to secure by Letters Patent, is—

1. The adjustable lower race B, in combination with the coupling-shoe A, as shown and described, for the purpose specified.

2. The combination of the shoe A, the separately-adjustable lower and upper races B and H, and the yoke P, substantially as and for the purpose shown and described.

3. The combination, with the cutter-bar Q, formed with the screw-threaded shank *q*, of the nut R and the yoke P, having the tubular elongation *p*, substantially as and for the purpose shown and described.

4. The combination of the yoke P, the boxing Y¹ Y², and journal *v*, the nut S, the screw-thread *s* on the exterior of the nut R, and screw-threaded shank *q*, substantially as and for the purpose shown and described.

5. The combination of the shoe A, bolts *k*, brackets *m*, set-screws *n*, and upper race H, substantially as and for the purpose shown and described.

MICHAEL M. SHELLABERGER.

Witnesses:

GIDEON PRENTICE,
JOHN N. MORTON.