(No Model.) 2 Sheets—Sheet 1.

J. W. GAMBLE & L. M. RUTT.

SICKLE GRINDER.

No. 385,176. Patented June 26, 1888.

Fig. 1.

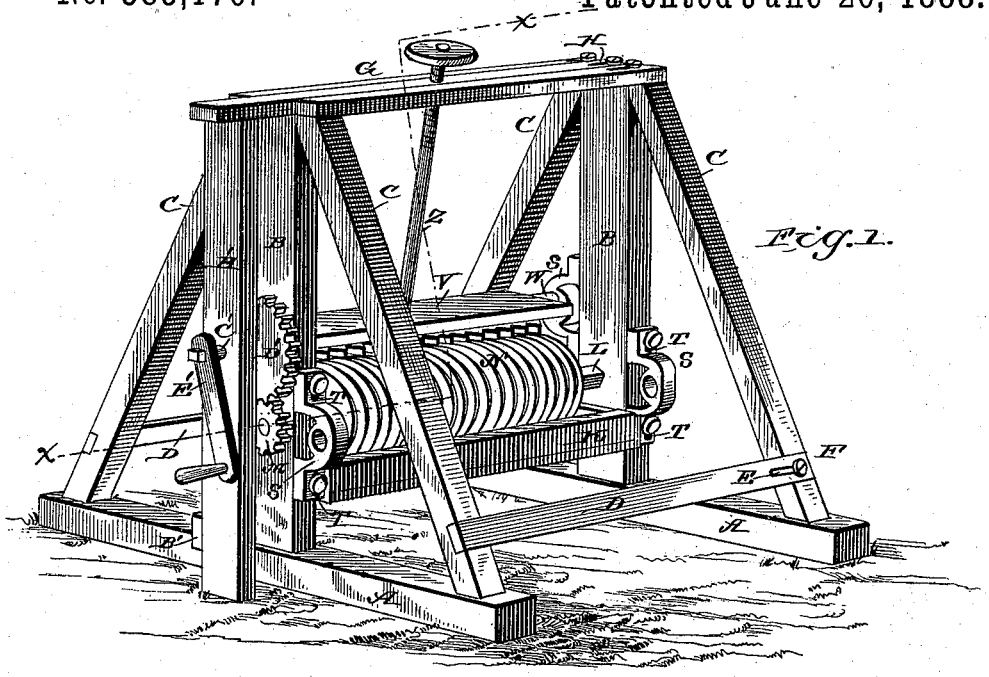
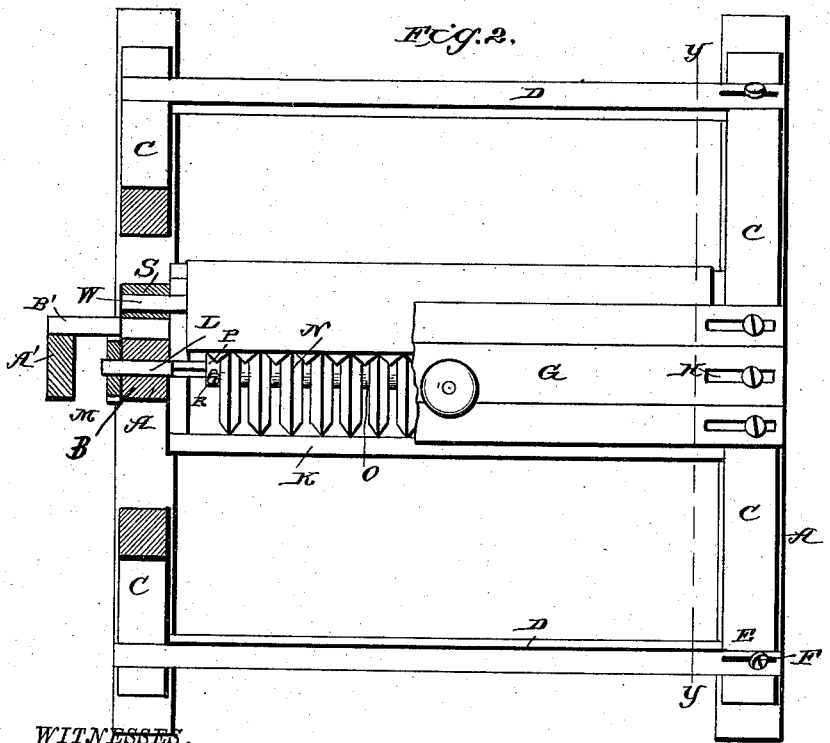


Fig. 2.



WITNESSES.

Jos. A. Ryan,

J. W. Garner

INVENTOR.

Joseph W. Gamble.

Levi M. Rutt.

by C. A. Snow & Co.

Attorneys.

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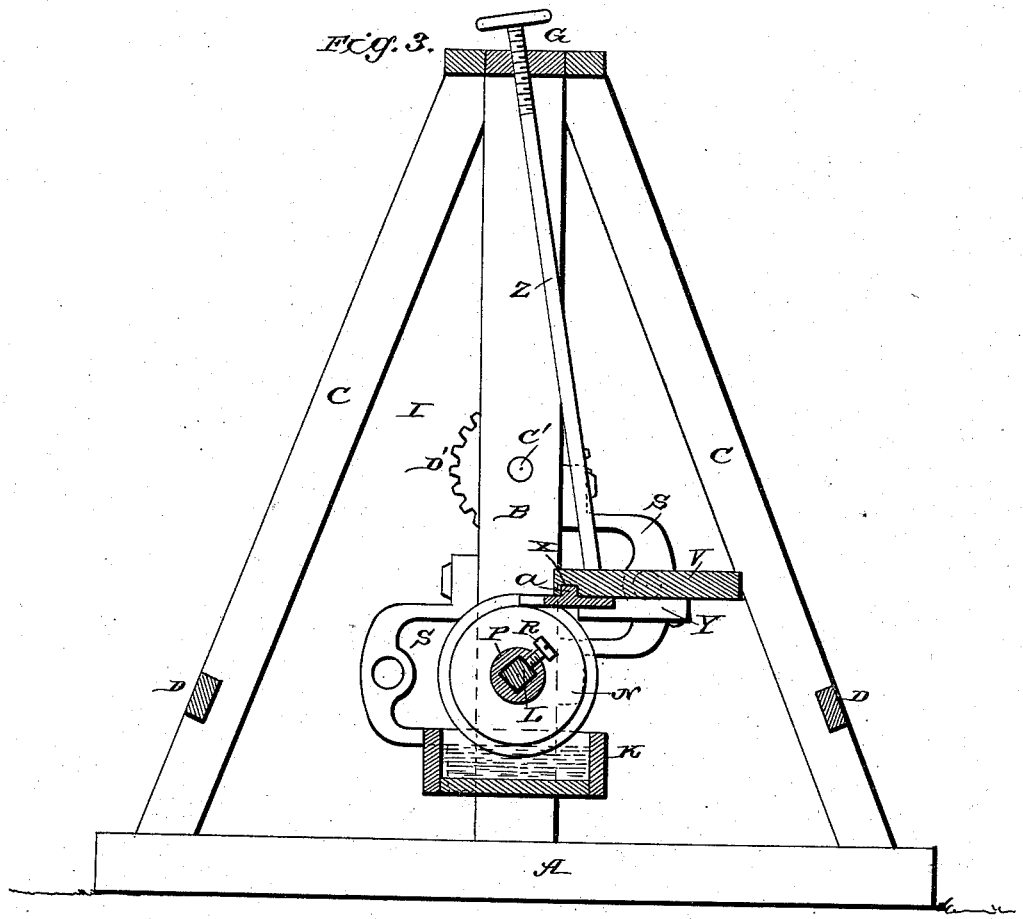
Fig. 3.



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(N. PETERS, Photo-Lithographer, Washington, D. C.)

UNITED STATES PATENT OFFICE.

JOSEPH WILBERT GAMBLE AND LEVI MARTIN RUTT, OF CASEY, IOWA.

SICKLE-GRINDER.

SPECIFICATION forming part of Letters Patent No. 385,176, dated June 26, 1888.

Application filed August 9, 1887. Serial No. 246,523. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH WILBERT GAMBLE and LEVI MARTIN RUTT, citizens of the United States, residing at Casey, in the county of Guthrie and State of Iowa, have invented a new and useful Improvement in Sickle-Grinders, of which the following is a specification.

Our invention relates to an improvement in machines for grinding the sickles of reapers and harvesters; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a grinding apparatus embodying our improvements. Fig. 2 is partly a top plan view of the same and partly a horizontal sectional view taken on the line *x x* of Fig. 1. Fig. 3 is a vertical transverse sectional view taken on the line *y y* of Fig. 2.

A represents a pair of ground-sills, which are provided at their centers with vertical standards B, that project from their upper sides.

C represents inclined braces, which connect the outer ends of the sills A to the upper ends of the standards.

D represents cross-bars, which have one end rigidly bolted to one pair of braces C, and the other end of which are provided with longitudinal slots E, adapted to receive the bolts or screw F, in order to connect them to the other pair of braces. A cross-bar, G, connects the upper ends of the standards B. One end of the said cross-bar projects beyond the outer side of one of the standards for a suitable distance, and the other end of the cross-bar is provided with longitudinal slots H. Bolts or screws extend downward through these slots and enter the upper end of the standard below the same, thereby securing the cross-bar thereto. By providing the bars D and G with the slots, and by providing the bolts or set-screws, which extend through the said slots, as described, one of the standards, its sill and braces, may be moved toward or from the other standard, thereby rendering the frame I, composed of the said sill, standards, braces, and cross-bars, longitudinally adjustable, to adapt the same to the lengths of the sickles to be ground.

K represents a water-trough, which extends longitudinally from one standard B to the other, and is located near the lower ends of the said standards.

L represents a shaft, which is rectangular in cross-section and has its ends reduced to form spindles, which are journaled in transverse openings made in the standards B at a suitable distance above the water-trough. These spindles are of sufficient length to permit the longitudinal adjustment of the frame before described. One end of one of the spindles projects beyond the outer side of one of the standards, and is provided with a gear-pinion, M.

N represents a series of grindstones, each of which has a square central opening adapted to receive the square shaft L, and the said grindstones are secured on the said shaft and are separated from each other by means of washers O. The grindstones have their peripheries beveled on opposite sides, and thereby adapted to the shape of the sickle-knives. Collars P are arranged on the shaft L, on the outer sides of the grindstones, which constitute the ends of the series, and the said collars P are provided with set-screws R, by means of which they may be clamped to the shaft L at any longitudinal adjustment thereon. Any number of the grindstones N may be attached to the shaft, according to the number of teeth on the sickle to be ground.

On opposite sides of the standards B are arranged two pairs of bearing-blocks, S, which are provided at their upper and lower ends with vertical slots T. Set screws or bolts U pass through the said slots and enter the sides of the standards, and serve to secure the bearing-blocks to the standards, to permit the same to be vertically adjusted thereon.

V represents a sickle-holder, provided at its ends with trunnions or spindles W, adapted to engage the transverse aligned openings in either pair of the boxes or blocks S. The said trunnions or spindles are of sufficient length to permit the longitudinal adjustment of the frame without cramping or binding the sickle-holder. The under side of the latter is provided with a longitudinal groove, X, adapted to receive the guiding-tongue *a*, with which the sickle is ordinarily provided. The sickle-holder is further provided on its under side with a series of clamping arms or brackets,

Y, which are pivoted to the sickle-holder, and are adapted to be turned so as to permit the sickle to be attached to the sickle-holder and clamped thereto, as indicated in Fig. 3.

Z represents a vertical screw, the upper portion of which extends through the cross-bar G and engages a threaded opening therein. The lower end of the screw bears upon the upper side of the sickle-holder, and thereby prevents the latter from rising, and consequently keeps the knives of the sickle presented to the upper edges of the grindstones.

From the projecting end of the cross-bar G depends a vertical standard, A′, which is arranged at a suitable distance from the outer side of its companion standard, B, and the lower end of the standard A′ is supported by a horizontal arm, B′, which projects from the foot of the said companion standard, B.

C′ represents a transverse shaft, which is journaled in aligned openings in the standards A′ and B, and to the said shaft is attached a spur-wheel, D′, which meshes with the pinion M. The outer end of the shaft C′ is provided with a crank, E′, by means of which the wheel D′ may be rotated, and thereby caused to impart rotary motion to the shaft L and to the grindstones N. The water-trough is arranged under the grindstones, so as to supply the latter with water when the machine is in operation.

The sickle-holder may be shifted to either pair of the bearing-blocks S, so as to enable the sickle to be ground from either side of shaft L; or two sickle-holders may be provided, one of which is journaled in each pair of blocks S, thereby adapting two sickles to be ground at the same time, as will be very readily understood. These blocks S have diverging supporting-legs, which serve to hold them at a slight distance from the standards B, and thereby form openings between the blocks and the standards through which sickle-knives that are longer than the frame may be passed, and thereby enabled to be ground.

Having thus described our invention, we claim—

1. The combination of the frame, the rotating shaft having the series of detachable grindstones N, the vertically-adjustable bearing-blocks, the sickle-holder journaled therein, and the screw to bear upon the upper side of the sickle-holder, substantially as described.

2. The combination of the longitudinally-adjustable frame, the rotating shaft L, journaled therein, the series of detachable grindstones secured to the said shaft, and the sickle-holder, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

JOSEPH WILBERT GAMBLE.
LEVI MARTIN RUTT.

Witnesses:
BENJAMIN M. RUTT,
GEORGE W. FARNSWORTH.