

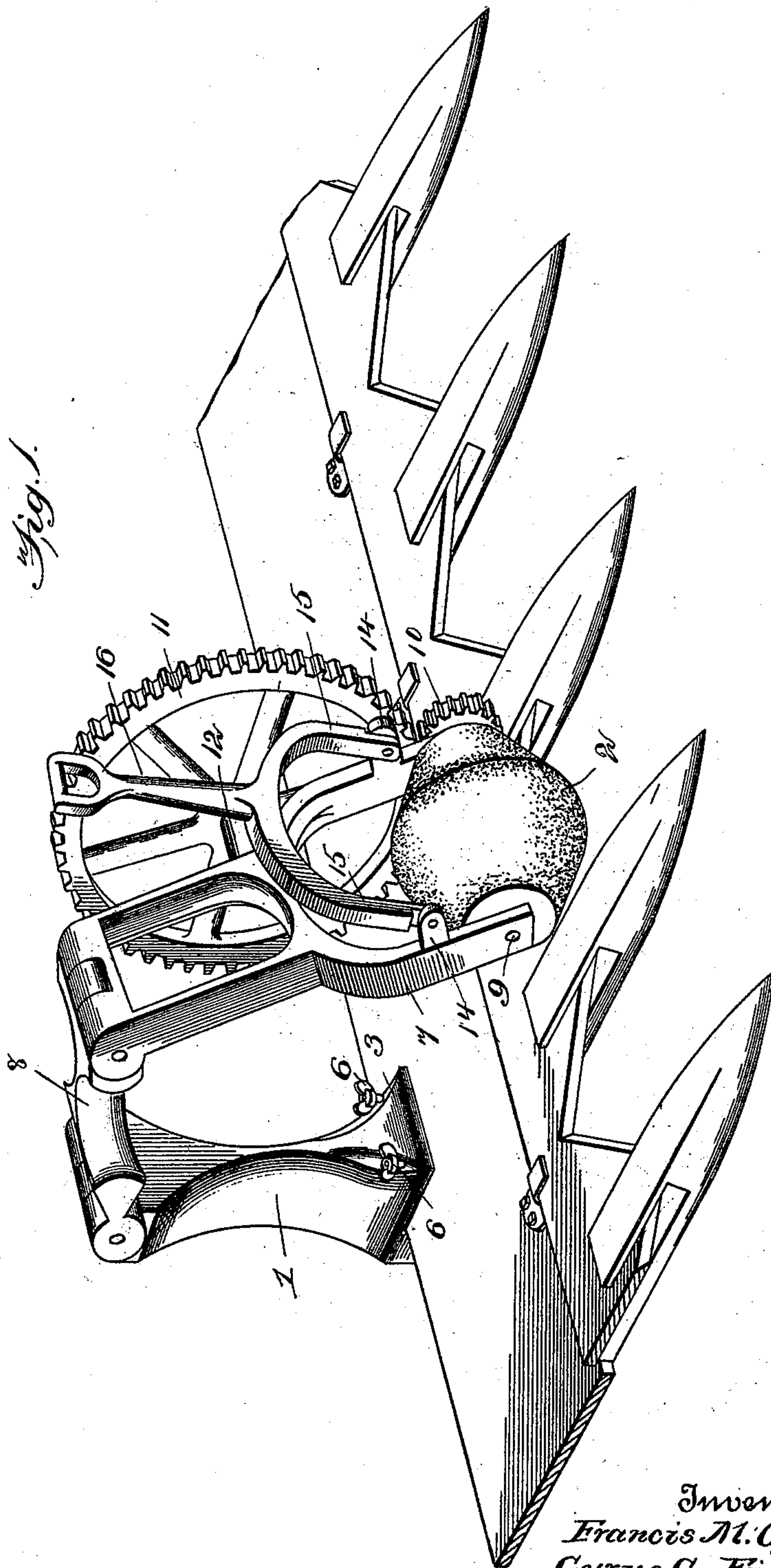
(No Model.)

2 Sheets—Sheet 1.

F. M. OGLE & C. G. FIELDS.
SICKLE GRINDER.

No. 512,740.

Patented Jan. 16, 1894.



Witnesses

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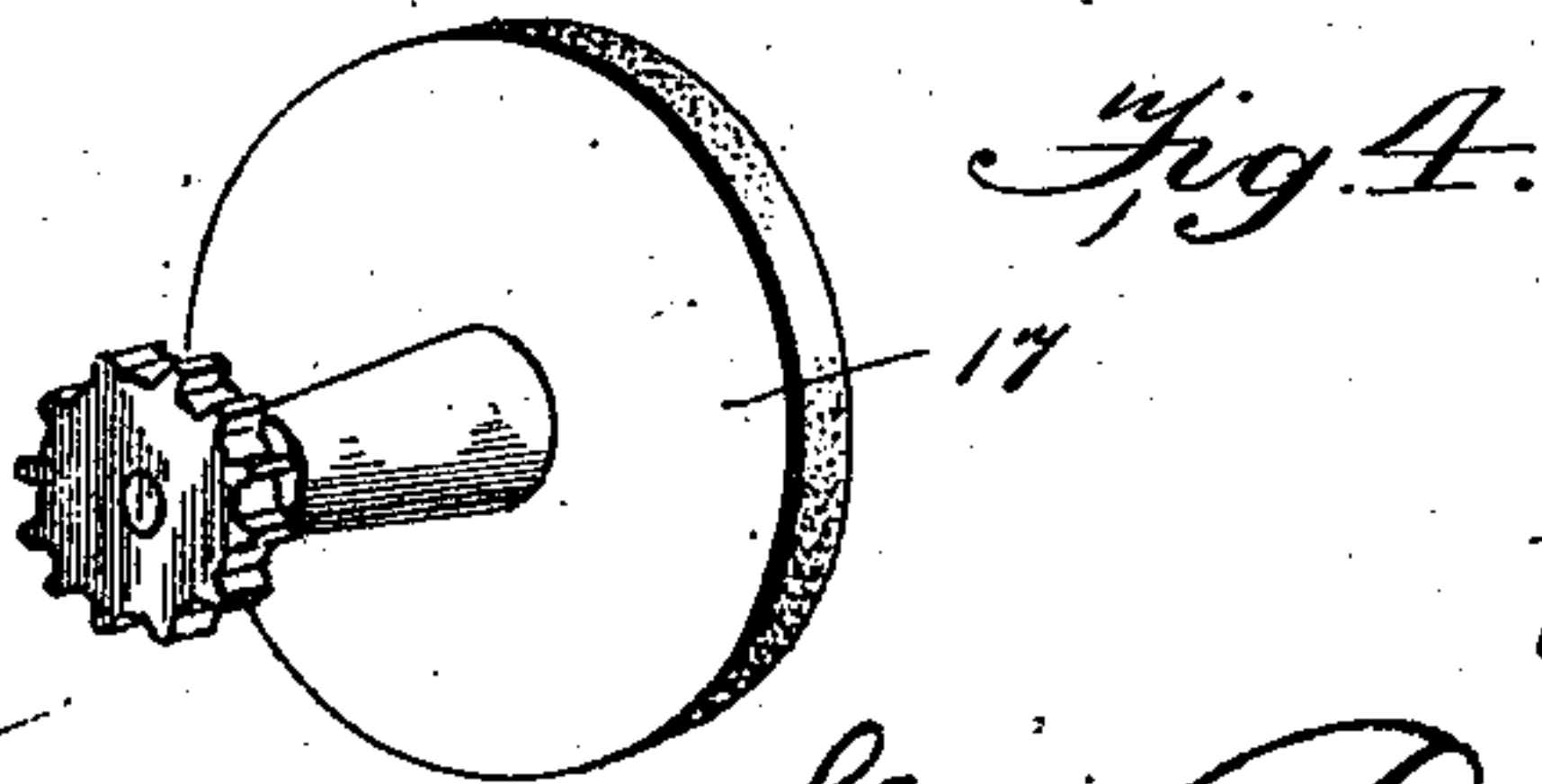
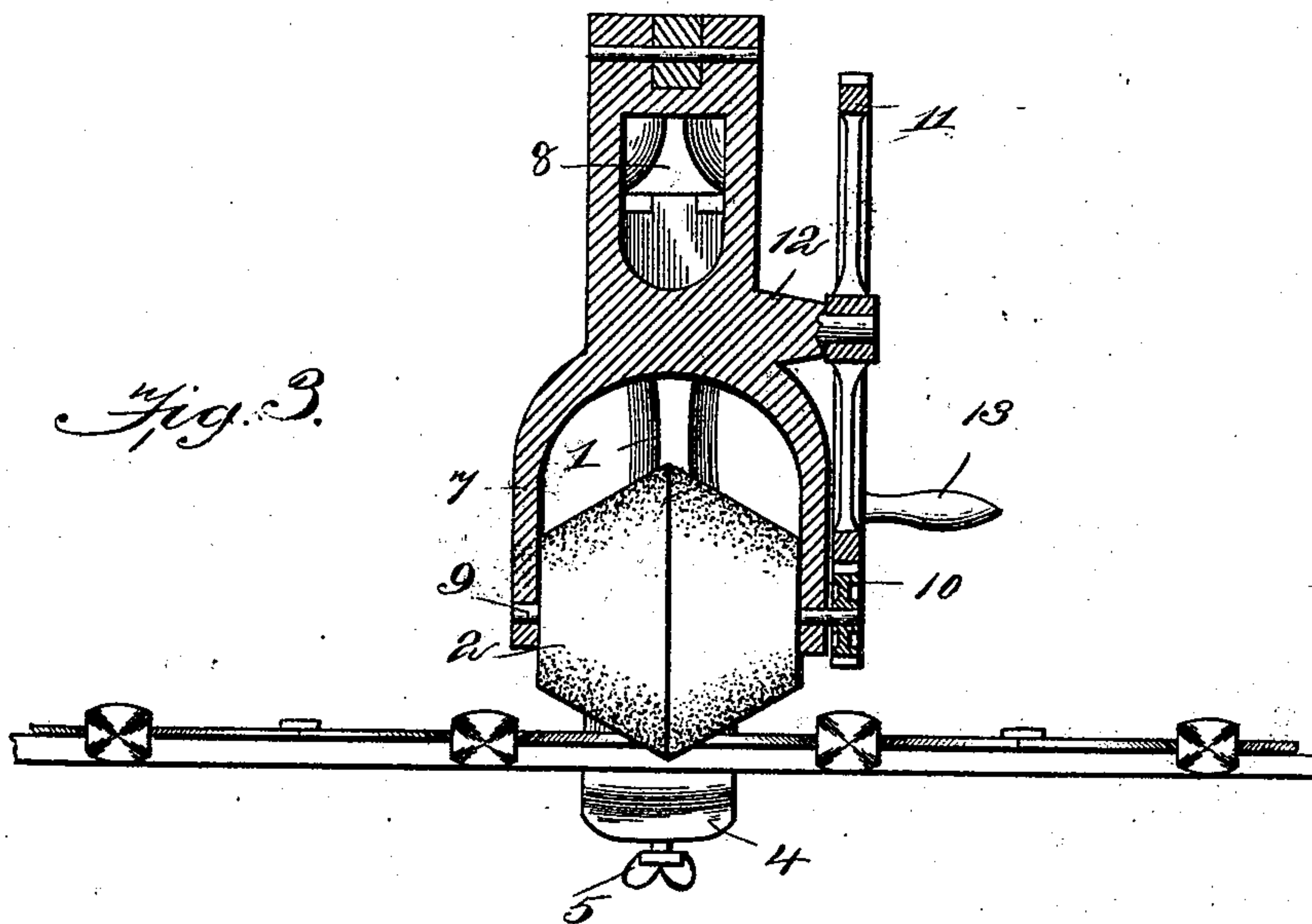
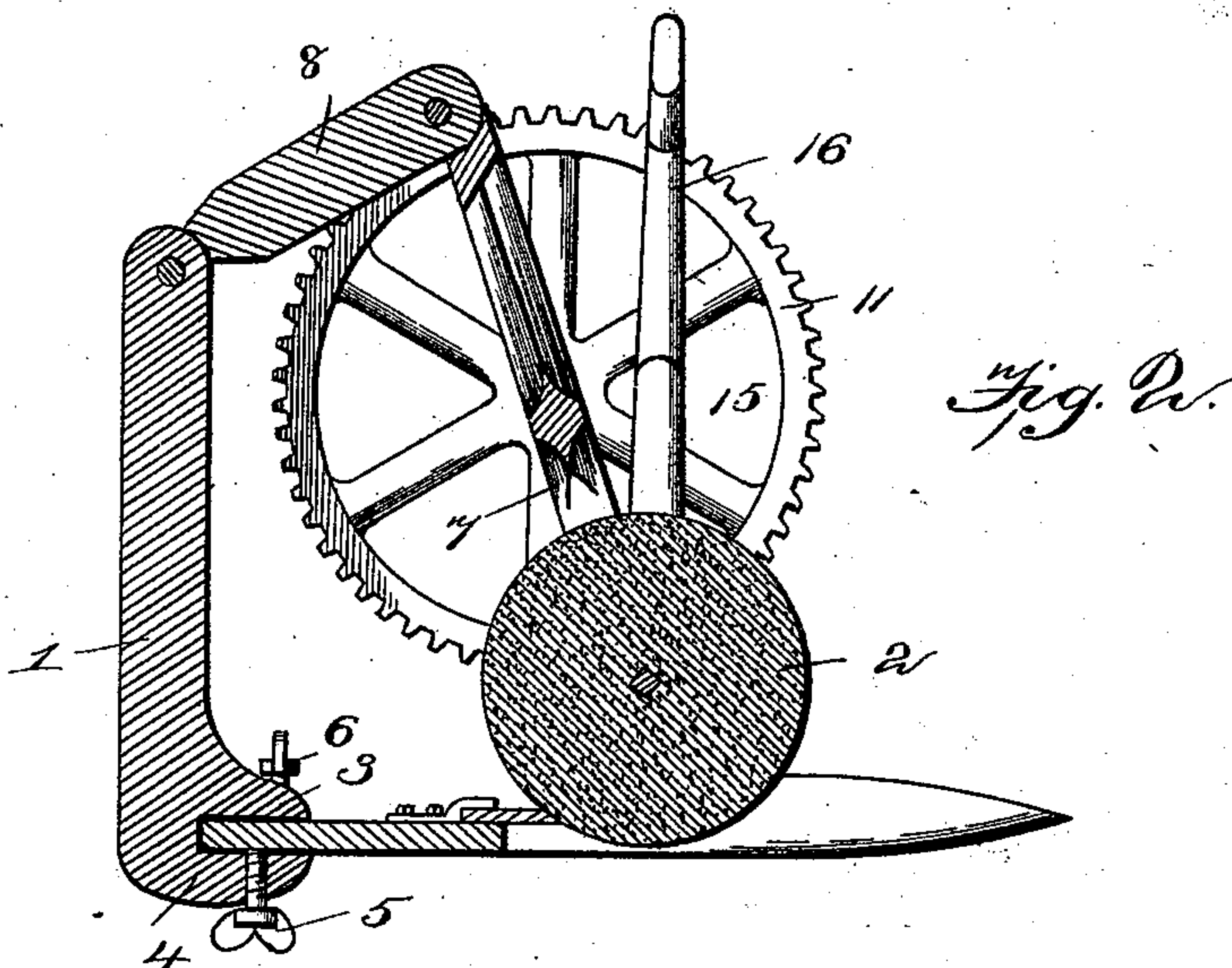
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UNITED STATES PATENT OFFICE.

FRANCIS M. OGLE AND CYRUS G. FIELDS, OF MARCELINE, MISSOURI.

SICKLE-GRINDER.

SPECIFICATION forming part of Letters Patent No. 512,740, dated January 16, 1894.

Application filed April 27, 1893. Serial No. 472,113. (No model.)

To all whom it may concern:

Be it known that we, FRANCIS M. OGLE and CYRUS G. FIELDS, citizens of the United States, residing at Marceline, in the county of Linn and State of Missouri, have invented a new and useful Sickle-Grinder, of which the following is a specification.

The invention relates to improvements in sickle grinders.

10 The object of the present invention is to provide a simple and comparatively inexpensive sickle grinder, adapted to be readily mounted on a cutting apparatus of a mower, or the like, at various points along the same
15 for sharpening the sickle or cutter-bar without detaching the latter from the harvesting machine, and for grinding the guard-fingers or plates.

20 The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

25 In the drawings—Figure 1 is a perspective view of a sickle grinder constructed in accordance with this invention, and shown applied in operative position to a cutting apparatus. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a transverse sectional
30 view. Fig. 4 is a detail perspective view of a flat faced grinding wheel.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

35 1 designates a standard provided at its lower end with a clamp, and adapted to be secured to the finger-bar or casing of a cutting apparatus at various points along the same to bring a double-conical grinding roll or wheel in
40 proper position over the knives for sharpening the same without removing the sickle or cutter-bar. The clamp consists of upper and lower stationary jaws 3 and 4, a clamping-screw 5 arranged in the threaded perforation
45 of the lower jaw, and a pair of set screws 6 arranged at the sides of the upper jaw by the combined use of which screws the grinder may be secured firmly in the desired position to prevent any liability of the grinding wheel
50 or roll 2 slipping. The grinding wheel or roll is arranged at the lower end of a swinging

grinding frame 7, which at its upper end is connected by a link piece 8 with the upper end of the standard 1; and the link piece is provided at its ends with knuckle joints, 55 whereby the grinding frame may be lifted vertically or swung outward and inward. The grinding frame has its lower portion forked and the sides thereof are provided with bearings, in which is journaled a shaft 9 carrying the grinding wheel or roll 2. The shaft 9 is extended at one side of the grinding frame, and has secured to it a pinion 10, which meshes with a master-wheel 11 arranged above the pinion. The master-wheel is journaled at the 65 end of a cylindrical extension 12, and is provided with a handle 13 by which the sickle grinder is operated. The sides of the forked portion of the grinding frame are provided with ears 14, and hinged to them are curved
70 arms 15 of a handle 16. The handle is provided at its upper end with a grapple and extends upward directly above the grinding roll or wheel, and the operator is enabled to readily turn the master-wheel, and at the same
75 time have full control of and accurately guide the grinding wheel or roll in sharpening a sickle or cutter-bar.

It will be readily apparent that the sickle-grinder may be readily secured to the casing 80 or finger-bar of a cutting apparatus at right angles to the length thereof, or at any other angle, and that by means of the clamp at the lower end of the standard it may be moved along the cutting apparatus to bring the grind-
85 ing wheel or roll opposite and above all of the blades or knives thereof for sharpening them, and that the sickle or cutter bar does not have to be detached and removed from the cutting apparatus for sharpening.

90 Instead of employing the double conical grinding-wheel or roll, a flat faced wheel 17 may be substituted for grinding the guard plates.

95 Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

By means of the set-screws 6 the standard 100 1 may be set at any desired inclination, either backward or lateral. This is of advantage

in dressing the guard fingers, and when the desired adjustment is attained, the clamping-screw 5 may be tightened to lock the standard in position.

5 It will be observed that the handle 16 is pivoted to the ears 14, which project outward from the plane of the swinging frame, whereby, when not in use, said handle may be folded to lie parallel with the swinging frame;
10 and in connection with this construction it should be noted that the peculiar manner of connecting the three principal members of the grinder permits of the folding of the device into a compact form, whereby it may be
15 carried in the ordinary tool-box with which harvesting machines are provided. The master gear is made of less diameter than the length of the swinging frame, and being carried by the swinging frame is folded there-
20 with to enable the machine to occupy a minimum amount of space. It will be understood, furthermore, that the connecting link 8, between the standard and the swinging frame, permits of the free movement of said frame
25 to cause the grinding roll to approach the surface of the sickle at any desired angle; and by attaching the standard to the rear edge of the cutting-apparatus, as shown clearly in Fig. 1, the weight of the swinging frame, the
30 gearing, and the grinding roll assists in holding the latter to its work, and thereby relieves the operator, partially, from the exertion of holding the roll in contact with the sickle, and enables him to devote his attention more
35 particularly to the guiding of the roll. Also, by arranging the parts so as to utilize gravity in holding the roll to its work, we avoid the use of tension springs and similar devices, and thus simplify the construction of the ap-
40 paratus.

What we claim is—

In a sickle grinding apparatus, the combination of a standard provided at its lower end with a clamping device having upper and lower jaws 3 and 4, twin set-screws 6 arranged 45 in the upper jaw at opposite sides thereof to engage the upper surface of a harvester cutting-apparatus, and a clamping screw 5 arranged in the lower jaw at the center thereof and in rear of the plane of the set-screws 6 to 50 engage the lower surface of the cutting-apparatus, a swinging frame having a bifurcated lower end and connected at its upper end to the upper end of said standard by an intermediate loose link 8, a grinding roll rotatably 55 mounted in the bifurcated end of the swinging frame, gearing carried by the swinging frame for communicating motion to the grinding roll, and an operating handle pivotally connected to the swinging frame by means of 60 ears which project perpendicularly from the plane of said frame, the standard being adapted, by means of the clamp with which it is provided, to be secured to the rear edge of a harvester cutting-apparatus without remov- 65 ing the latter from the harvesting machine, and the swinging frame being adapted to incline forward and downward, whereby the grinding roll is held by gravity in contact with the knives of the sickle, substantially as 70 specified.

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

FRANCIS M. OGLE.
CYRUS G. FIELDS.

Witnesses:

JOHN W. WHITE,
J. H. SMITH.