

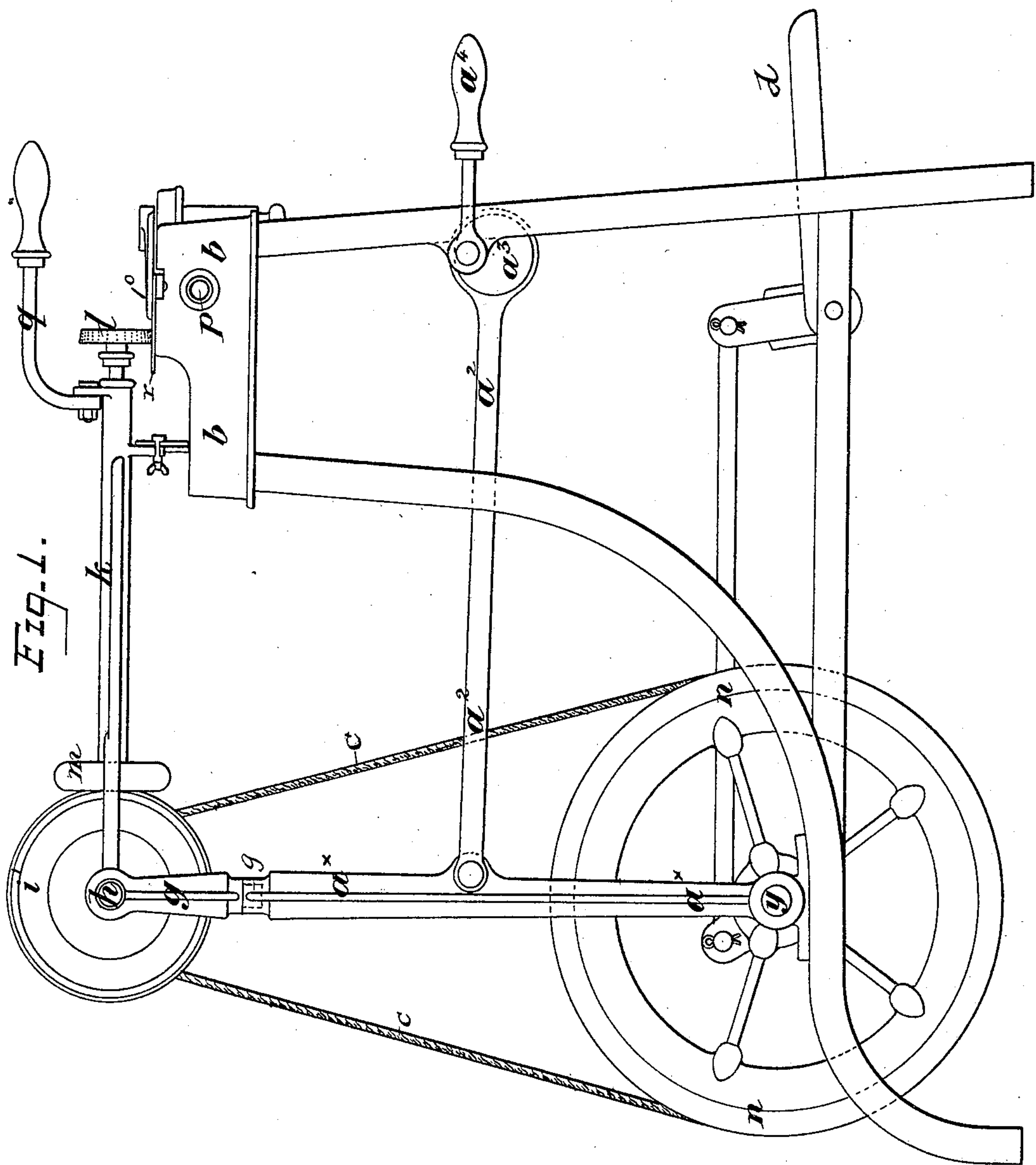
(No Model.)

2 Sheets—Sheet 1.

R. MCGREGOR.  
APPARATUS FOR SHARPENING THE CUTTERS AND FINGERS OF REAPING  
AND MOWING MACHINES.

No. 404,976.

Patented June 11, 1889.



Witnesses.  
David S. Williams.  
William D. Bonner.

Inventor  
Robert McGregor  
by his Attorneys  
Howson & Sons

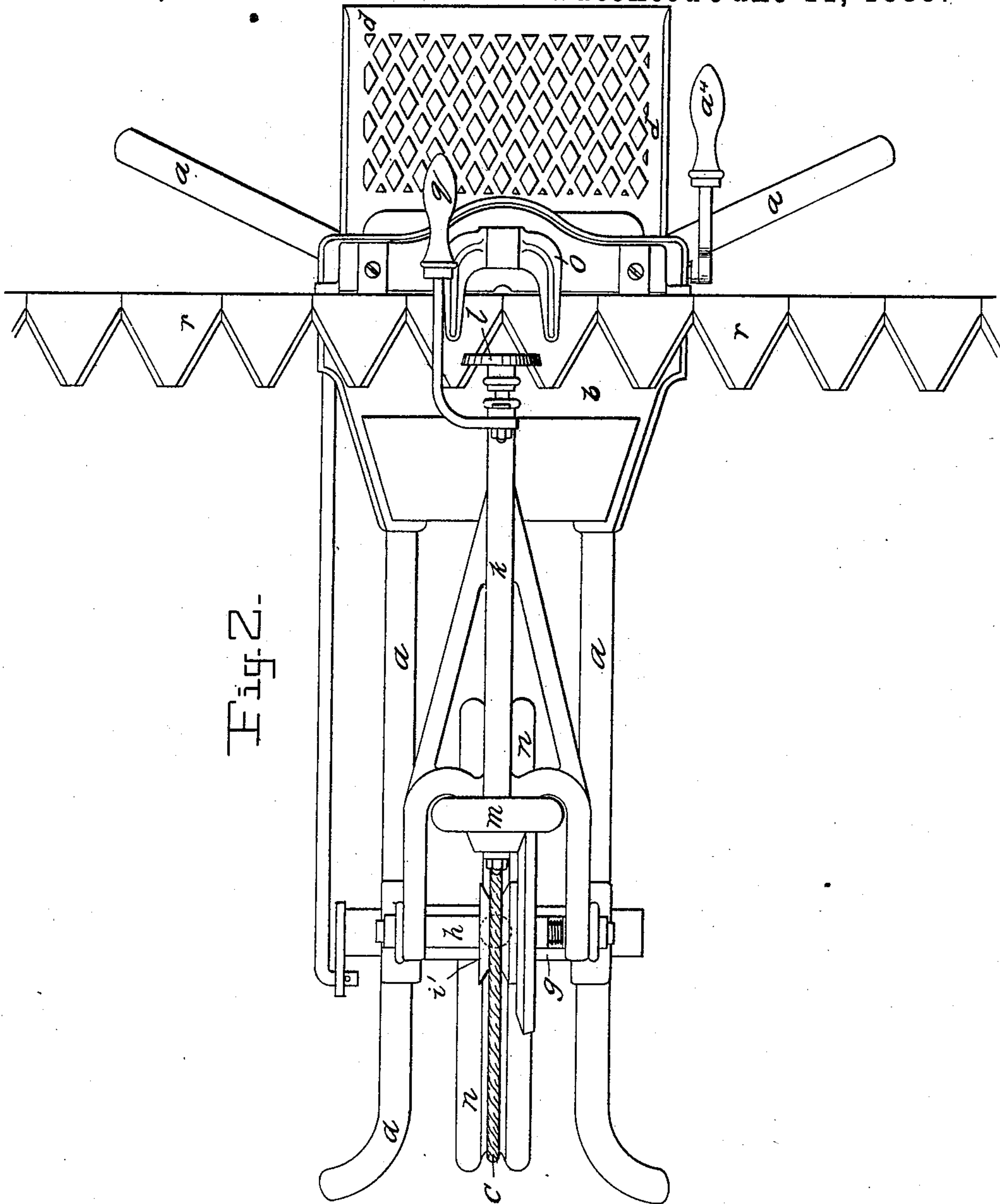
(No Model.)

2 Sheets—Sheet 2.

R. MCGREGOR.  
APPARATUS FOR SHARPENING THE CUTTERS AND FINGERS OF REAPING  
AND MOWING MACHINES.

No. 404,976.

Patented June 11, 1889.



Witnesses:

*E. J. Griswold*  
*Geo. A. Brane*

Inventor:

*R. McGregor*  
By his attys.  
*Howson and Co*



# UNITED STATES PATENT OFFICE.

ROBERT MCGREGOR, OF LEIGH, COUNTY OF LANCASTER, ENGLAND.

APPARATUS FOR SHARPENING THE CUTTERS AND FINGERS OF REAPING AND MOWING MACHINES.

SPECIFICATION forming part of Letters Patent No. 404,976, dated June 11, 1889.

Application filed May 4, 1887. Serial No. 237,085. (No model.) Patented in England July 1, 1886, No. 8,607; in France July 31, 1886, No. 177,711, and in Germany August 15, 1886, No. 39,435.

*To all whom it may concern:*

Be it known that I, ROBERT MCGREGOR, a subject of the Queen of Great Britain and Ireland, and residing at Leigh, in the county of Lancaster, England, have invented Improvements in the Construction of Apparatus for Sharpening the Cutters and Fingers of Reaping and Mowing Machines, (for which I have obtained patents in Great Britain, No. 8,607, July 1, 1886; in France, No. 177,711, July 31, 1886, and in Germany, No. 39,435, August 15, 1886,) of which the following is a specification.

In an application for a United States patent filed by me July 8, 1886, Serial No. 207,429, I have shown, described, and claimed an apparatus for sharpening the cutters and fingers of reaping and mowing machines, one of the principal features of my said apparatus being the combination, with the fixed frame, of a frame universally pivoted to the fixed frame and carrying a revolving spindle and grinding-wheel, instead of the provision of a flexible or jointed shaft used to obtain that universal movement of the grinder which is desirable in an apparatus of this character.

My present invention consists of a modified construction of grinding-machine embodying some of the principal features of the invention forming the subject of my previous application.

In the accompanying drawings, Figure 1 is a side elevation of my improved machine, and Fig. 2 is a plan view.

The stand or frame of the machine may consist of side bars or legs *a*, supporting at their upper ends the bracket or table *b*, for the reception of the harvester-cutter *r* or other object to be sharpened. These legs are tied together by stays to carry a foot-treadle *d* and a fly-wheel shaft *y*, to be driven thereby. On this shaft *y* is secured the grooved fly-wheel or pulley *n*, to drive by means of a cord or belt *c* the friction bevel-wheel *i'*, mounted in bearings in the swiveled fork *g*. Instead of

mounting this swiveled fork on a slide on the fixed frame, as in the machine of my previous application, however, I mount it on the upper end of an upright rocking frame *a<sup>x</sup>*, which is hinged around or pivoted to the bearing of the fly-wheel shaft *y*. The cross-shaft *h*, carrying the friction-wheel *i'*, is mounted to turn in bearings in the swiveled fork *g*, and the wheel *i'* drives the wheel *m* on the end of the spindle, which carries at its other end the grinding-wheel *l*, and which is mounted in bearings in the frame *k*. This frame, as described in my previous application, is horizontally pivoted to the swiveled fork *g*, so that by means of the handle *q* the frame *k*, and consequently the grinding-wheel *l*, may receive a universal movement over the cutter *r* or finger-bar, which is carried in the transversely-movable holder *p* on the table or bracket *b*. A clip *o* on the table holds the cutter in any position to which it may be adjusted.

In order to insure steadiness of action when moving the rocking frame *a<sup>x</sup>* backward and forward, I prefer to actuate it by means of a rod *a<sup>2</sup>* in connection with a cam, crank, or eccentric *a<sup>3</sup>*, worked by the handle *a<sup>4</sup>*, within convenient reach of the operator's hand. The eccentric *a<sup>3</sup>* also has the advantage of limiting the backward and forward motion of the rocking frame *a<sup>x</sup>*.

I claim as my invention—

The combination of the fixed frame with a rocking frame, a fork swiveled on the latter, and a frame pivoted to the swiveled fork and carrying a spindle and grinding-tool, all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT MCGREGOR.

Witnesses:

CHARLES A. DAVIES,  
JNO. HUGHES.