(No Model.) 2 Sheets—Sheet 1.

M. S. FIELD.

FEED CUTTER.

No. 346,151. Patented July 27, 1886.

Fig. 1.

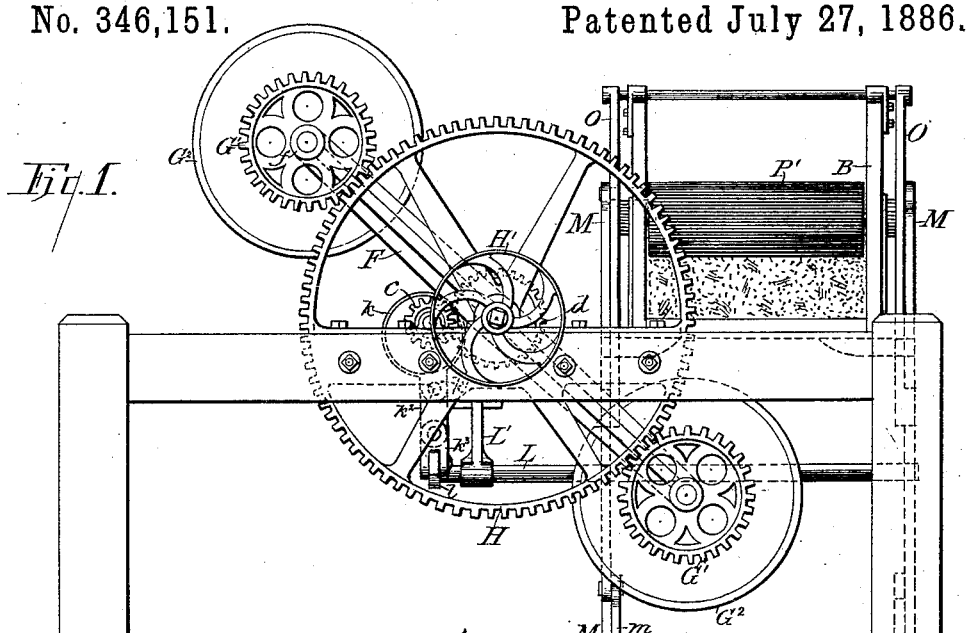
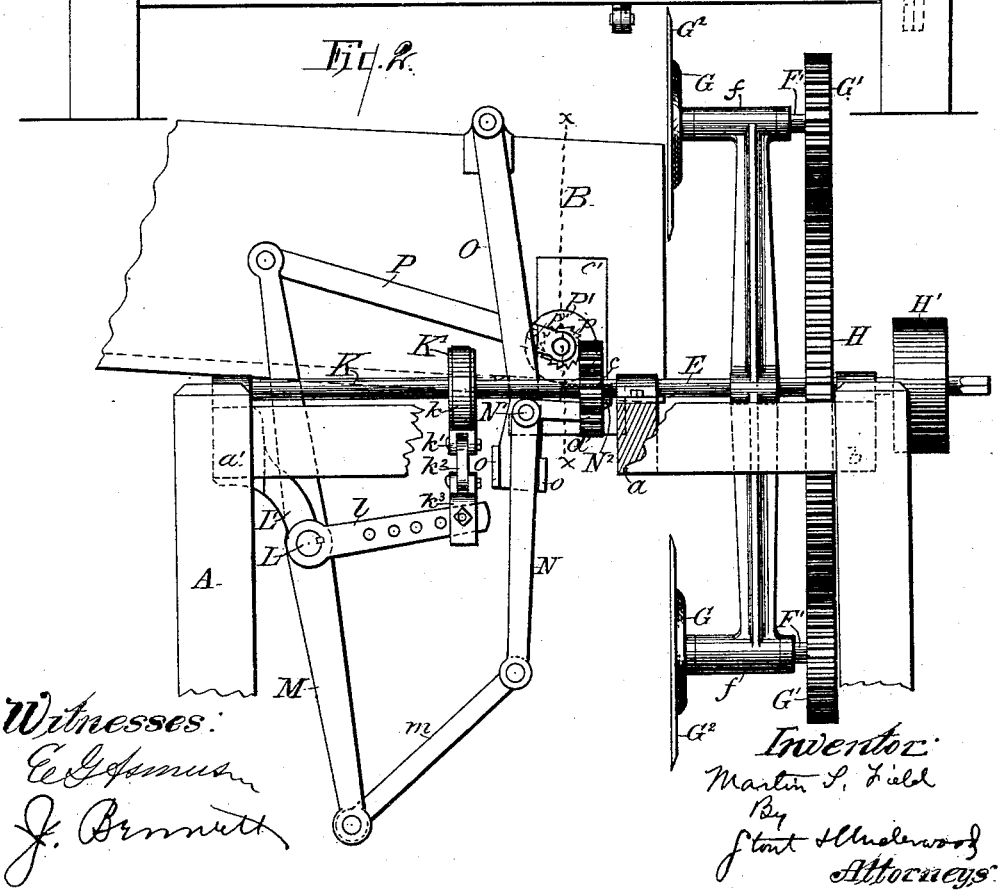


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

M. S. FIELD.

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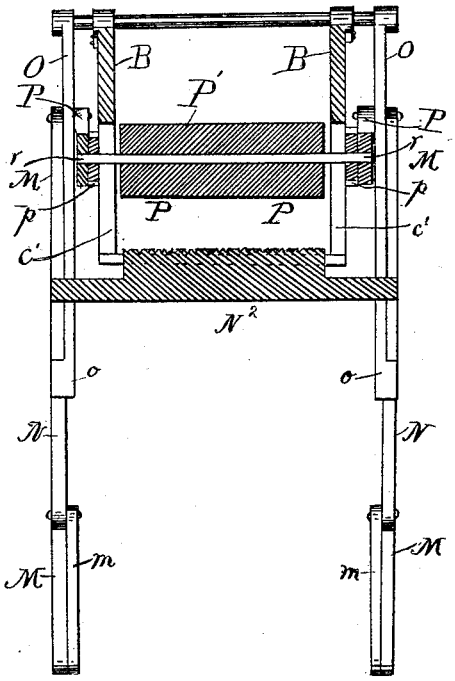
Fig. 3.



Witnesses
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Philip Hawley.

Inventor
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UNITED STATES PATENT OFFICE.

MARTIN S. FIELD, OF RACINE, WISCONSIN.

FEED-CUTTER.

SPECIFICATION forming part of Letters Patent No. 346,151, dated July 27, 1886.

Application filed August 27, 1883. Serial No. 104,828. (No model.)

To all whom it may concern:

Be it known that I, MARTIN S. FIELD, of Racine, in the county of Racine, and in the State of Wisconsin, have invented certain new and useful Improvements in Feed-Cutters; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to feed-cutters, and will be fully described hereinafter.

In the drawings, Figure 1 is an elevation of the delivery end of my machine, and Fig. 2 is a side elevation of same; Fig. 3, a detail sectional view taken through X X, Fig. 2, illustrating the feeding-roller and the manner in which it is held in the cutter-box.

A is the stand or main frame of my machine, and B is the feed-box.

E is the main driving-shaft, that extends across the machine parallel with the feed-box.

a and *b* are the beams that form the principal supports for the shaft E, and between the sills *a* and *b* the shaft E has an arm, F, keyed upon it, and each end of this arm F forms a bearing, F′, for a revolving disk, G, which disk is keyed on one end of its arbor, while a pinion, G′, is keyed on the other, and the pinions G′ mesh with a master cog-wheel, H, which is firmly bolted to frame-piece *b*, and in the center hole of which said shaft E freely rotates.

H′ is a pulley, that is keyed onto said shaft E to receive a belt by which the machine is driven. The extreme end of said shaft E is squared to take a crank for operating the machine by hand.

K is a shaft, that has its bearings in sills *a a′*, and has a pinion, *c*, keyed onto it near its bearing on sill *a*, and this pinion meshes with a pinion, *d*, that is keyed onto shaft E in proper position for such meshing. Besides pinion *c* the shaft K carries an eccentric, K′, and this is surrounded by a collar, *k*, having ears *k′*, in which a closed link, k^2, is pivoted, and from this link is in turn suspended an open link, k^3, to receive one end of an arm, *l*, of a shaft, L, that is suspended from the frame by suitable brackets, L′. This shaft L has also two vertical arms, M, one near each end, and the lower end of each of these arms M is connected by a link, *m*, with the lower end of a bell-crank lever, N. These bell-crank levers are two in number, and are supported by a shaft, N′, that has its bearings in the lower portion of the arms of a hanger, O, the vertical portion of the levers N working between lugs *o o* on said hanger, and on the horizontal arm or hanger of the bell-crank levers N, I secure the bed-plate N^2, which has its upper face corrugated or ridged. The upper ends of said arms M are connected by links P to trunnions *r* of corrugated feeding-roller P′, that is provided with a ratchet, *p*, having its pawl *p′* hung in proper position in link P. Square openings, *c′*, are provided in the sides of the feed-box B, to allow of the vertical and longitudinal motion imparted to the corrugated roller P′ by the arms M, said openings being closed by outside plates, which are suitably mounted on the trunnions of said roller and travel with it, thereby preventing any of the feed from being pressed outside of said feed-box. The shaft E being turned by hand or power, each of its revolutions brings the two disks G, on which are firmly bolted the circular knives or cutters G^2, with a smooth, serrated, or otherwise formed edge, against the feed, through which they cut their way, revolving on their respective arbors around the master cog-wheel H. The feed is brought under their cutting-edges by means of the eccentric K′, and its connections with the corrugated bed-plate N^2, and the feed-roller P′, said eccentric making two revolutions for each turn of the driving-shaft E. The action of said eccentric so connected is to depress the bed-plate N^2 and draw back the roller P′, and then raise said bed-plate and push forth said roller P′, which is free to revolve on its back motion, but is prevented from doing so when pushed forward on its link against the feed. The feeding or length of cut of the feed is regulated by sliding the eccentric more or less along the shaft K, feathered for that purpose, while such adjustment as may be desired is maintained by means of a pin inserted in either one of the holes of arm *l*.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a feed-cutter, the combination, with a master-wheel rigidly secured to the main-frame, of rotating radial arms keyed to a main driving-shaft and provided with revolving cutter-disks and pinions, a reciprocating feed-roller, a movable bed-plate, and means for act-

uating said roller and plate, consisting of vertical arms upon a transverse shaft, said arms provided at their outer ends with links adapted to respectively connect with the feed-roll and bell-crank levers supporting the bed-plate, and an eccentric upon a supplemental shaft geared to the main shaft and provided with a collar having a link-and-arm connection with said transverse shaft, substantially as and for the purpose set forth.

2. In a feed-cutter, the combination of the driving-shaft having a pinion with a feathered supplemental shaft, provided with a pinion adapted to engage the one on the main shaft, and an eccentric having a link-and-arm connection with a transverse shaft carrying vertical arms, a reciprocating feed-roller connected by links to the vertical arms on the transverse shaft, and a movable bed-plate supported by bell-crank levers united to said vertical arms by links, substantially as and for the purpose set forth.

3. In a feed-cutter, a feed-roller connected by links to the upper ends of vertical arms upon a transverse shaft, a corrugated bed-plate supported by bell-crank levers, and links uniting said levers and the lower ends of the vertical arms upon the transverse shaft, in combination with an eccentric adjustable on a supplemental shaft geared to the main driving-shaft, and a perforated arm having an adjustable link-connection, with a collar surrounding said eccentric, substantially as and for the purpose set forth.

4. In a feed-cutter, a reciprocating feed-roller provided with a pawl and ratchet, in combination with bell-crank levers supporting a corrugated bed-plate, vertical arms upon a transverse shaft, and their upper and lower ends respectively connected by links to said feed-roller and levers, a supplemental shaft geared to the main driving-shaft, and an eccentric adjustable on this latter shaft and provided with a collar adapted to be connected to the transverse shaft by a series of vertical links and a horizontal arm, substantially as and for the purpose set forth.

5. In a feed-cutter, the combination of eccentric K′, having links k^2 and k^3, and arm l, keyed on shaft L, with arms M, links m and P, bell-crank levers N, shaft N′, and hanger O, having lugs o o, corrugated plate N^2, and feeding-roller P′, having ratchet p, with pawl p', substantially as shown and described, and for the purpose set forth.

In testimony that I claim the foregoing, I have hereunto set my hand on this 7th day of August, 1883, in the presence of two witnesses.

MARTIN S. FIELD.

Witnesses:

STANLEY S. STOUT,

H. G. UNDERWOOD.