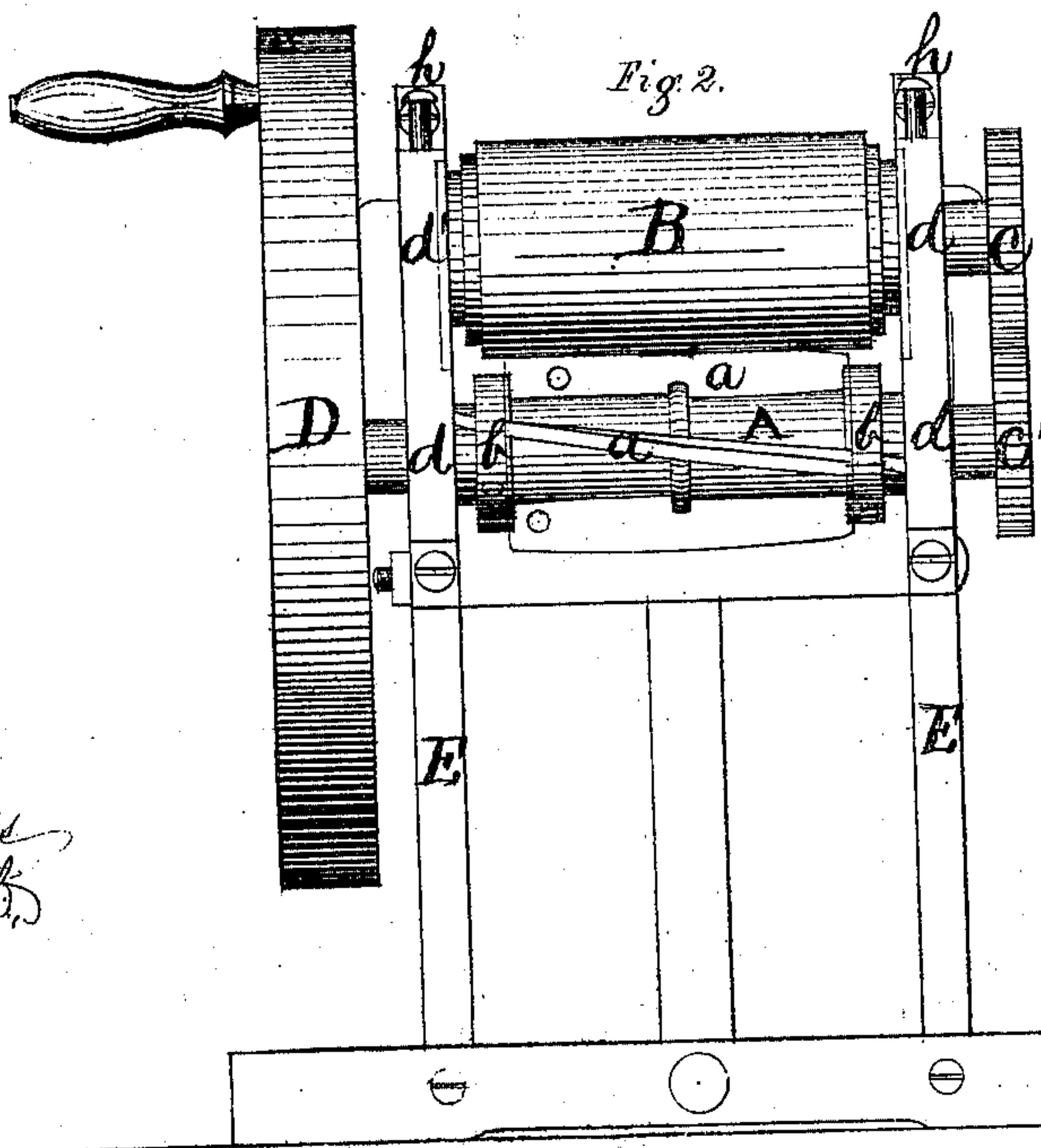
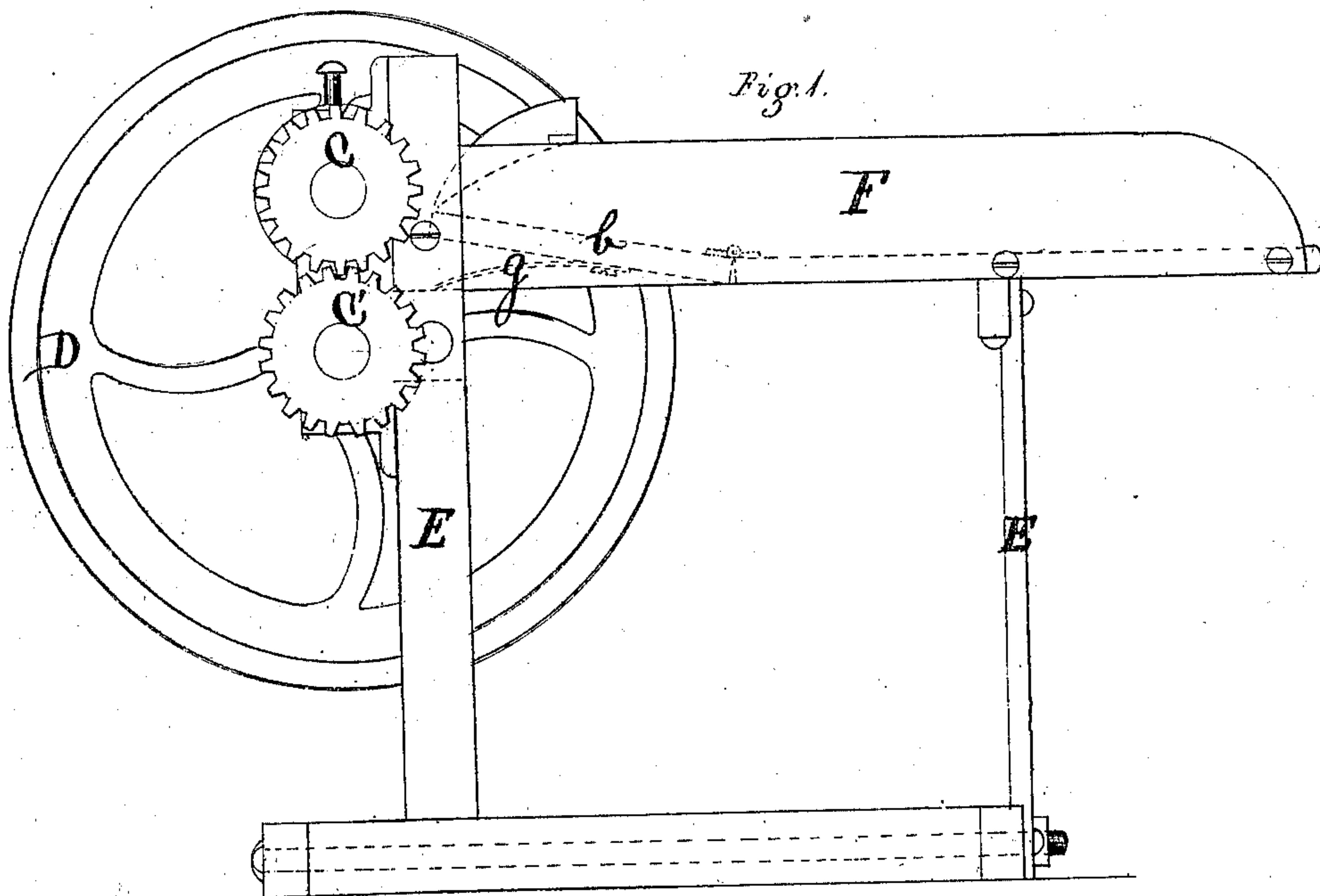


W. Gale,

Feed Cutter.

No. 27,384.

Patented Nov. 30. 1869.



Witnesses

Jno. A. Ellis
A. North

Inventor
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Atty

United States Patent Office.

WARREN GALE, OF PEEKSKILL, NEW YORK.

Letters Patent No. 97,384, dated November 30, 1869.

IMPROVEMENT IN FEED-CUTTERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, WARREN GALE, of Peekskill, in the county of Westchester, and State of New York, 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 represents a side elevation of my feed-cutter, and

Figure 2, a front view of the same.

Similar letters indicate like parts in both figures.

My invention consists in the employment, in a feed-cutter, of a slotted knife-shaft, constructed with a space between the rings that hold the knives in place, and the journal-boxes, in which the shaft runs, so that when the rings are released, they can be moved on the shaft, so as to release the knives, in order that they may be removed or replaced without removing the shaft or journal-boxes.

To enable others skilled in the art to which my invention appertains, to make and use the same, I will now describe its construction and operation.

In the accompanying drawings—

A represents the cutting-shaft, provided with spiral slots around its surface, into which are placed the spiral knives *a a*, as seen in fig. 2.

These knives are held in place by caps or rings *b b* passing around the ends of the knives.

The cutting-shaft A is pivoted in the metal journal-boxes *d d*, secured to the forward end of the frame E.

It will be seen that the knives *a a* do not extend the whole length of the shaft, but that there is a space between the ends of the knives and the journal-boxes *d d*, to allow the rings *b b*, when detached from the knives, to move on the shaft, which allows the knives to be removed or replaced without removing the shaft.

I usually make the cutting-shaft A of what is known as malleable-iron castings, as this is much stouter than ordinary castings.

B represents the pressure-cylinder, made of any suitable material and size, and pivoted above the cutting-shaft A, in journal-boxes *d' d'*, secured to the forward end of the frame E.

C is a cog-wheel, attached to one end of the cylin-

der B, and gearing into a corresponding cog-wheel, C', attached to the end of the shaft A.

On the other end of shaft A is secured the drive-wheel D.

F represents the feed-box secured to the upper end of the frame E, as seen in fig. 1.

f is the forward end of the bottom of the feed-box, and is hinged to the remainder of the bottom, as seen in fig. 1.

g is a spring, one end of which is attached to the frame E and the other end resting against the hinged bottom *f*, so as to allow the feed to enter the cutting-shaft in a compact state.

h h are screws, for adjusting the pressure-cylinders.

In operating machines of this class, it will often happen that the knife will be placed in the machine in a reversed position, that is, with the bevel side forward. This causes the machine to work imperfectly and hard, besides frequently damaging the machine.

To avoid this difficulty, I make the ends of the shaft of different diameters, and use caps or rings of unequal diameter on their inside, and the knives being notched accordingly, they cannot be reversed and put in the machine without recutting the notch on the knife.

Having thus described my invention,

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

1. In the construction of feed-cutters, a slotted knife shaft, constructed with a space between the rings or caps *b b*, that hold the knives *a a* in place, and the journal-boxes *d d*, in which the shaft runs, so when the rings, or either of them are released, they can be moved on the shaft, so as to release the knives, so they can be removed or replaced without removing the shaft or journal-boxes, substantially as described.

2. A slotted knife-shaft, provided with knives bevelled on the back side, and provided with caps or rings of unequal diameter, so the knives cannot be reversed, substantially as described.

In testimony that I claim the foregoing as my own, I affix my signature, in presence of two witnesses.

WARREN GALE.

Witnesses:

O. H. AUSTIN,
E. O. RANNEY