

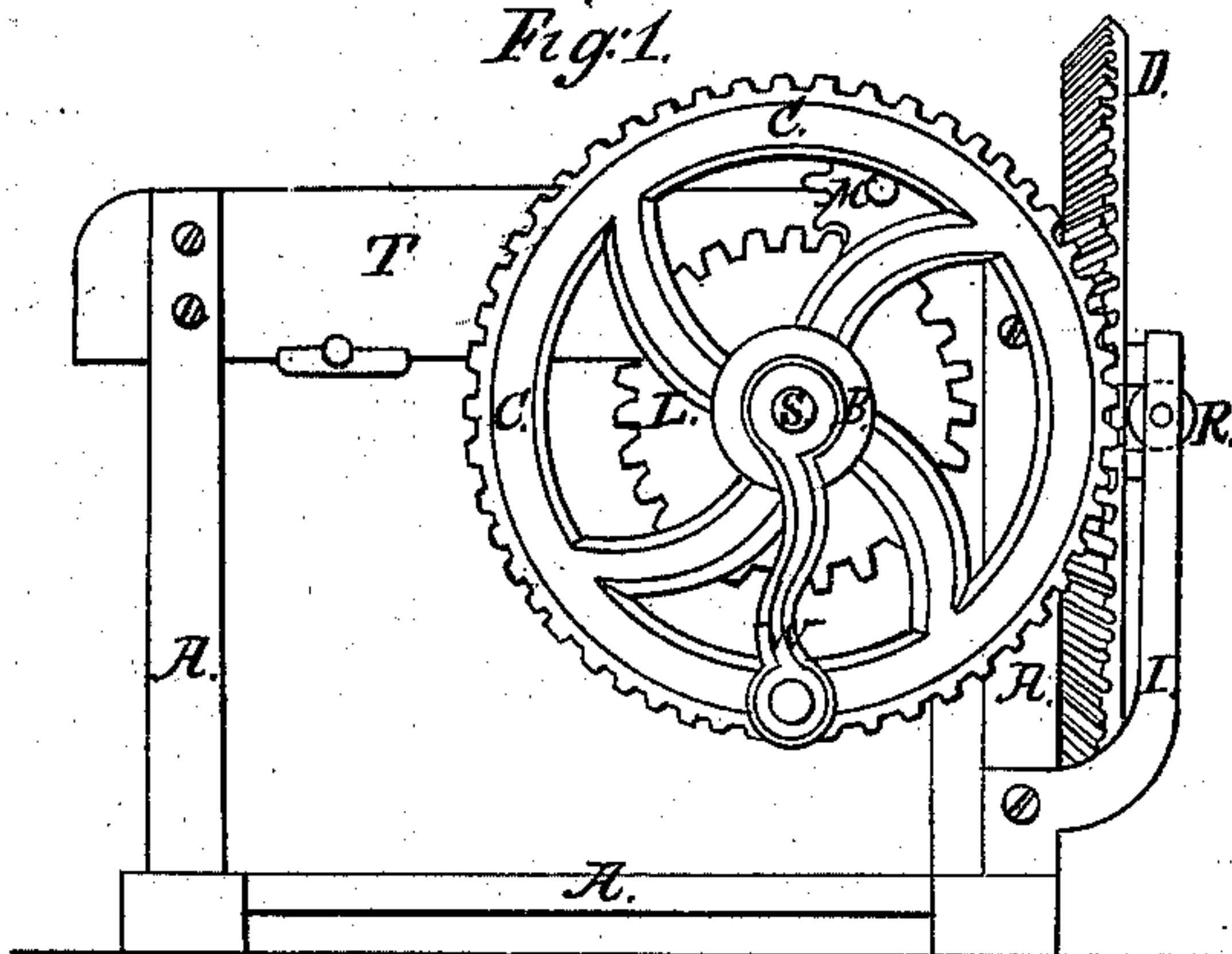
# *J. H. Ryland*

## *Straw Cutter*

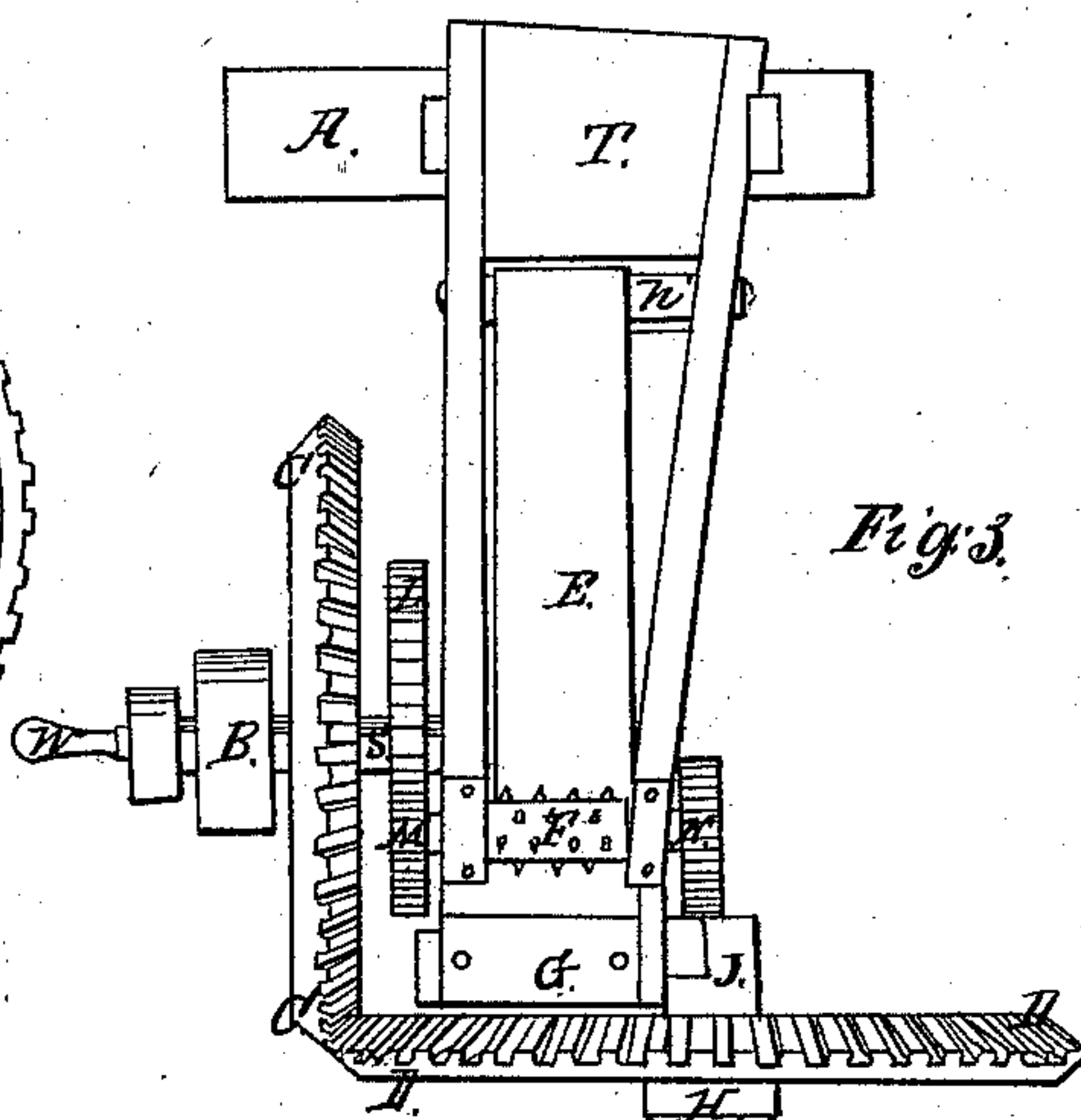
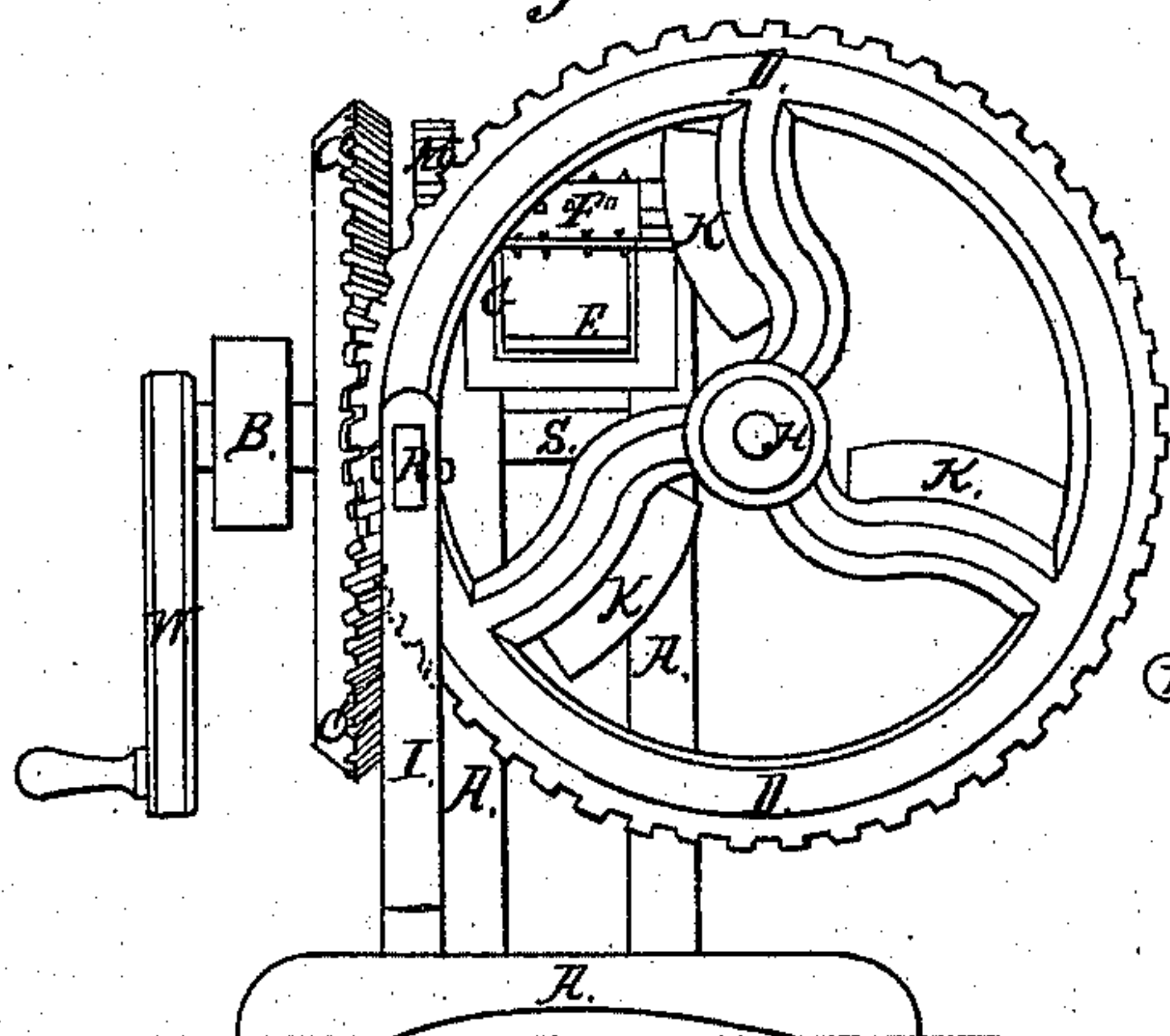
*N<sup>o</sup> 95,047.*

*Patented Sep. 21, 1869.*

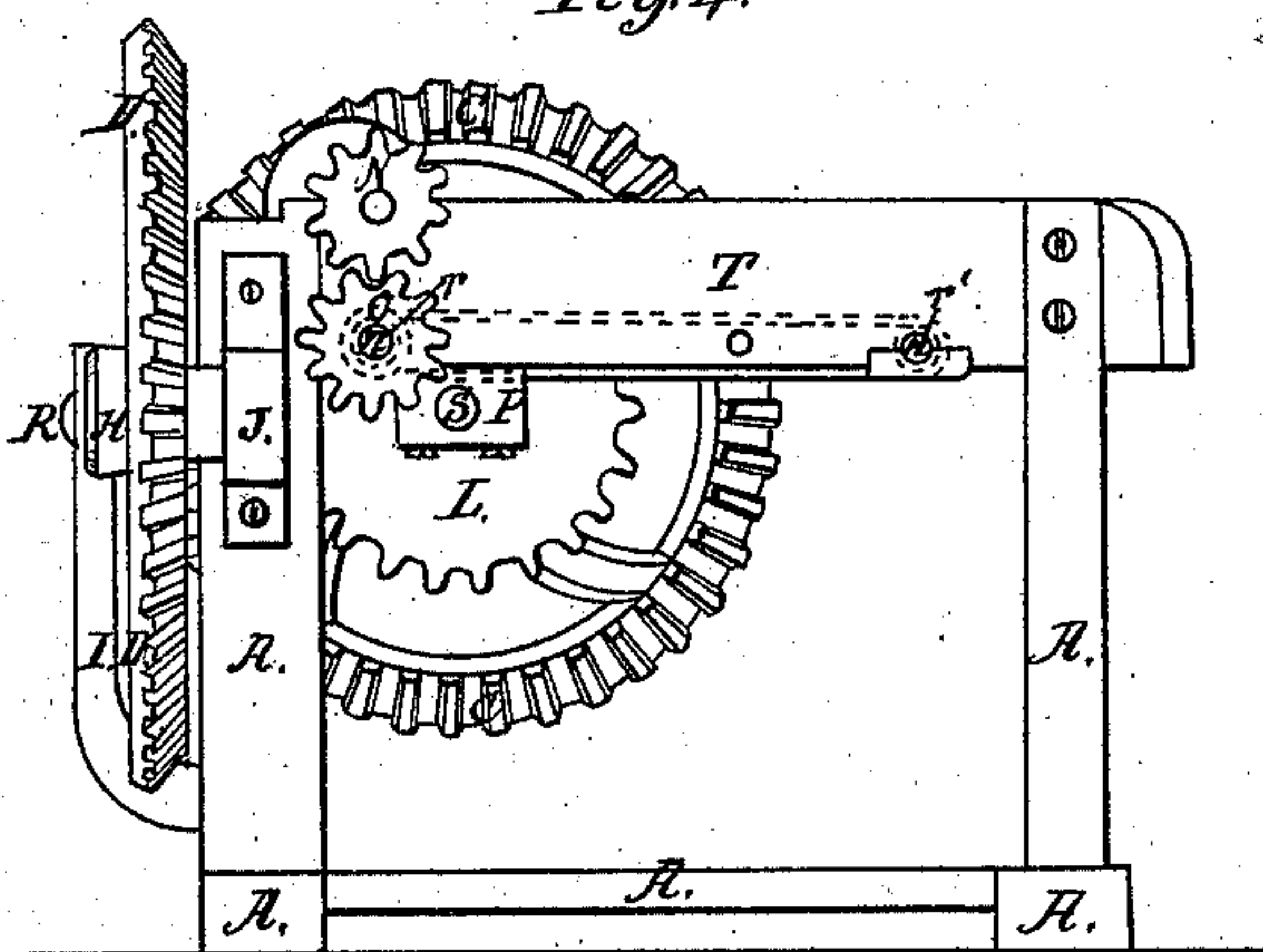
*Fig. 1.*



*Fig. 2.*



*Fig. 4.*



*Witnesses:*

*A. Bradley*  
*A. W. Howard.*

*Inventor.*

*John H. Ryland*  
*By his Attorney,*  
*Chas. F. Mansbury.*



# United States Patent Office.

JOHN H. RYLAND, OF BALTIMORE, MARYLAND.

*Letters Patent No. 95,047, dated September 21, 1869.*

## IMPROVEMENT IN STRAW-CUTTER.

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, JOHN H. RYLAND, of the city of Baltimore, in the State of Maryland, have invented an Improved Straw-Cutter; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of the machine.

Figure 2 is an end elevation,

Figure 3 is a plan or top view, and

Figure 4 is a rear elevation of the same.

The same part is marked by the same letter of reference wherever it occurs.

The nature of the invention consists in the peculiar mode of gearing the machine, by which great power is obtained.

To enable others to make and use my invention, I will describe its construction and operation.

In the accompanying drawings—

A marks the frame, constructed in the usual mode.

W is a winch, attached to one end of the main shaft of the straw-cutter, by means of which the machinery is operated directly by hand-power.

B represents a band-wheel, also attached to the main shaft, affording the means of driving the machine by power derived from any suitable prime mover.

The main shaft S is hung to the frame by journal-boxes P, and on it is firmly attached the bevel-gear C, which engages and drives the knife-wheel D.

The knife-wheel revolves upon a fixed axis, H, which is supported, and attached to the frame A, by the bracket J, in such manner that the curved knives K, attached to its arms, work closely and evenly against the metal-faced mouth G of the trough T.

The wheel D is prevented from being deflected from its proper plane of revolution by the pressure of the roller R, which is held and supported by the arm I, attached to the frame.

To the main shaft S is also attached the gear-wheel

L, which, in its revolution, turns the pinion M, thus driving the feed-roller F, and by means of the pinion N, on the other end of the feed-roller, and the pinion O, upon the rear end of the front belt-roller r, operates the endless belt E, stretched upon its two rollers r and r'.

The operation is as follows:

The straw or hay to be cut is placed in the trough T, and is fed up to the knives, through the mouth G of the trough, by the conjoint operation of the feed-roller F and the endless belt E.

By turning the winch W, or the band-wheel B, the main shaft S revolves the gear-wheel C, which, engaging with the teeth of the knife-wheel D, causes that wheel to perform its proper office of carrying the knives through the straw.

The arm I holds the knife-wheel in its place, while allowing it to turn freely, by means of the roller R.

The gear-wheel L drives the feed-roller F, and, by the aid of the pinions M, N, and O, operates the endless belt E, which co-operates with the feed-roller in supplying the knives with straw or hay.

The advantage of this peculiar mode of gearing is, the gain of power for the operation of the knife.

Having described the construction and operation of my improved straw-cutter,

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

The combination and arrangement of the gear-wheel C, the knife-wheel D, the curved knives K, the arm I, and the roller R, when constructed as and for the purpose set forth.

The above specification of my said invention signed and witnessed, at Washington, this 5th day of May, A. D. 1869.

J. H. RYLAND.

Witnesses:

A. C. BRADLEY,

CHAS. F. STANSBURY.