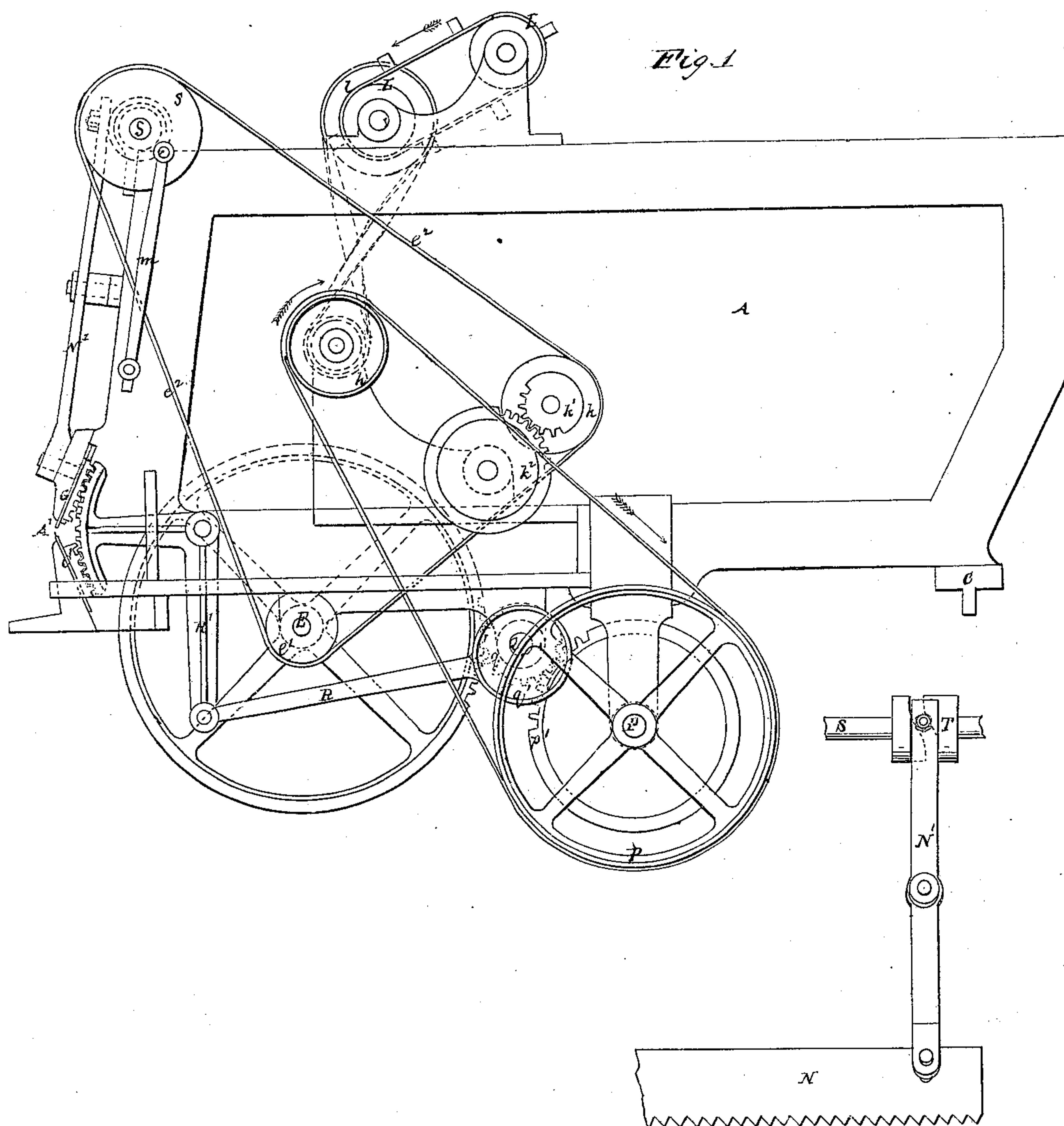


*W. Clissold.*  
*Wool Feeding Mach.*

*N<sup>o</sup> 92,705.*

*Patented Jul. 20, 1869.*



*Witnesses*  
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*Attorneys*

W. Clissold.

Sheet 2. 2 Sheets.

Wool Feeding Machine,

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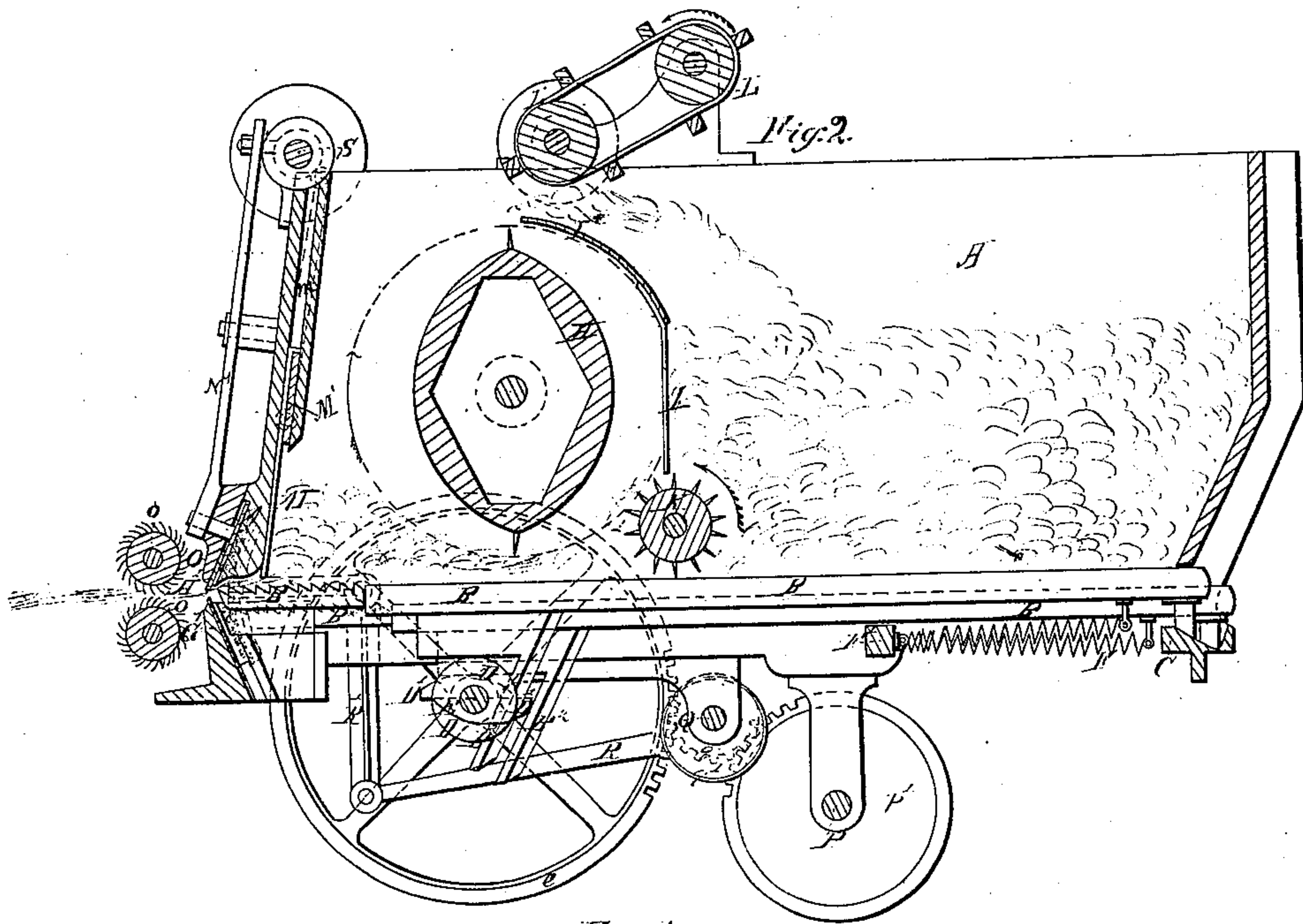
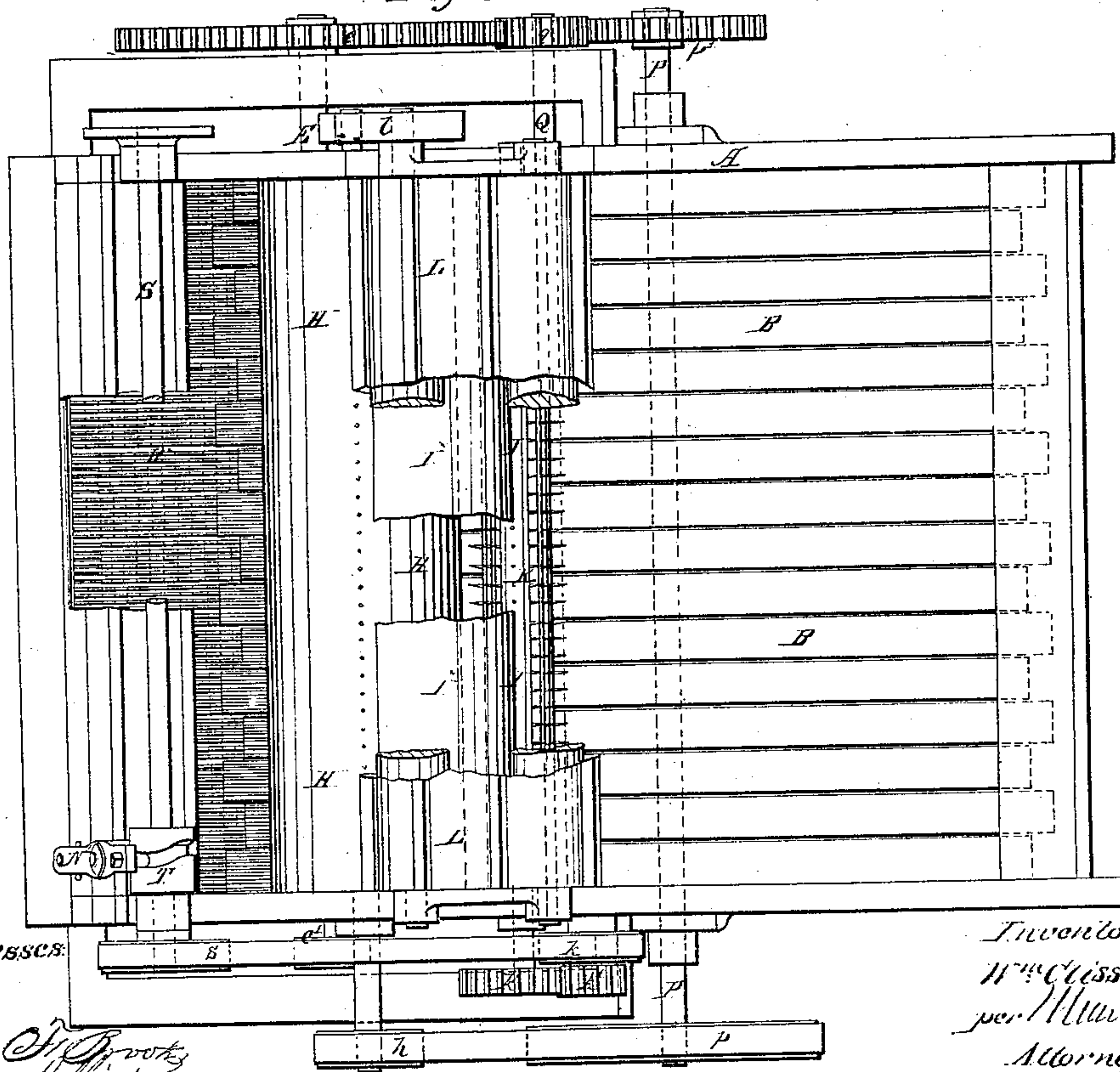


Fig. 2.



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# United States Patent Office.

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*Letters Patent No. 92,705, dated July 20, 1869.*

## IMPROVEMENT IN MACHINE FOR FEEDING WOOL, &c., TO CARDING AND OTHER MACHINES.

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, WILLIAM CLISSOLD, of Dudbridge Works, near Stroud, in the county of Gloucester, in England, have invented new and improved Machinery for Feeding Wool and other Fibres to Preparing and Carding-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to certain improvements on the feeding-mechanism for carding-machines for which Letters Patent of the United States, numbered 64,677, were granted to me, on the 23d day of April, 1867.

The object of the original invention was to provide a means of feeding wool, cotton, or other fibrous substances to preparing or carding-machines, without separating the long from the short fibres. Thus, when operating with wool, it was proposed to make a bat or sheet with the long and short wool or shoddy well mixed, and of the same consistency throughout its breadth and length.

The feeding-apparatus consists of a box, for receiving the fibres to be fed, fitted with a bottom formed of reciprocating bars, which move forward the fibres to the discharging-mouth, at the front end of the box. Over the discharging-mouth works a pair of inclined reciprocating transverse comb-plates, which slide in vertical guides, and mass the fibre as it passes from the box, into a loose, thick sheet or bat. Now, in order to remove all liability of the fibre accumulating at the mouth of the box, and effecting a stoppage, I propose to introduce into the original the following modifications:

The bars forming the bottom of the box, I place horizontally, and I give them an alternating longitudinal and oscillating motion. I also arm them, at their forward ends, with saw-teeth, that they may the better take hold of the advancing fibres. When they have moved forward to the mouth, they will drop clear of the fibres, and then retire.

Near the mouth of the box, I mount a rotary comb, which consists of an oval drum, carrying two rows of teeth, fixed in lines coincident with its largest diameter. Behind this rotary comb I set a grid, transversely to the box, and with its spaces in the planes of motion of the comb-teeth. These teeth, as they rotate, will take hold of the fibres at the back of the grid, and draw them down past a rotary gill, which is set below the grid, and a little above the traversing-bars, and assists in carrying the fibres forward, while it prevents an undue quantity passing from the rear of the box. The fibres, carried forward by the rotary

comb, are taken up by the saw-teeth of the reciprocating bars, and delivered to the inclined reciprocating combs, before mentioned. Any fibres that may adhere to the teeth of the rotary comb are taken off by a stripper, situate at the top of the box, and thrown on to a shield, from which they fall upon the mass behind the grid.

Immediately in rear of the upper comb-plate is mounted a transversely-sliding toothed blade, which receives a short endway motion, and serves to disturb the advanced fibre and enable the comb-plates more effectually to take hold of the same.

In the accompanying drawings—

Figure 1 is a side elevation of the feed-box, fitted according to my improvements.

Figure 2 is a longitudinal section of the machine.

Figure 3 is a plan view, partly in section, of the same.

Figure 4 is a detail front view of the same.

Similar letters of reference indicate corresponding parts.

A is a rectangular or other-shaped open box, for receiving the wool or other fibrous material to be delivered to the preparing or carding-machine, to be fed. The bottom of this box is formed of parallel bars, B B, which are connected, at their forward ends, with saw-blade extensions, B\*, for the purpose of propelling the wool or other fibre forward. These bars are supported, at their rear ends, on a transverse bar, C, having an inclined face, over which they slide, and toward their front ends they bear upon a tappet-cam, D, keyed to a transverse shaft, E.

The box A has a horizontal opening or slot, A', at the level and in front of the bars B, through which opening the fibrous material is discharged.

A forward longitudinal motion is given alternately to every other of the bars, by means of coiled springs, F, which connect them with a fixed cross-bar, F', and the return or back motion is produced by means of tappets, D', on the cam-shaft E, striking against bracket-projections, B<sup>2</sup>, on the under side of the bars B. The object of this endway motion of the bars is to feed the overlying fibre toward the horizontal opening in the front of the box, and bring it under the operation of a pair of horizontal reciprocating comb-plates, G G', which are intended to mass it, as it is discharged from the box, into a loose, thick sheet or bat.

The bars, as they advance to the mouth A', are supported on a concentric portion of their respective cams, and as they complete their stroke, a smaller radius of the cams is presented to the bars, which then fall by their own weight, clear of the fibre which they have assisted to propel toward the mouth A'.

The falling and rising of the bars are so arranged that every alternate bar will rise and fall together.



Immediately above the bars, and near their forward end, is mounted a rotary comb, H, formed of an oval drum, with two rows of comb-teeth, fixed parallel to its axis, and at opposite sides thereof, in the line of the largest diameter of the drum. The teeth of this comb work through a fixed transverse vertical grid, I, and under a curved shield, I\*, extending upward from the grid.

Between the grid I and the bars B, a gill-roller, K, is mounted, and above the rotary comb H is situated a rotary stripper, L, having its bearings in brackets attached to the sides of the box A.

M are loose rods, pendent (by reason of their ends being hooked) from a sliding cross-bar, M', and intended to press down and condense the fibres as they are advanced to the comb-plates G G'.

N is a transverse blade, formed with saw-teeth, as shown in the detached view, fig. 4. This blade is carried by connecting-arms, N', pivoted to the front end of the box A. They are connected to the blade N by pins, which pass through slots made in the upper comb-plate G.

O O are card-rollers, for taking up the fibres as they leave the combs G G', and transferring them to the aprons, feed-rolls, or cylinders of the preparing or other machines.

Having pointed out the nature and use of the various operating-parts of the machine, I will proceed to explain the means of setting them in action.

P is the main driving-shaft, fitted, at one end, with a band-pulley, p, and at the other end with a spur-wheel, p'.

A strap from the pulley p passes over a pulley, h, on the axle of the rotary comb H, and gives motion thereto in the direction of the arrow, fig. 2, and a crossed band, from a second pulley on the comb-axle H, passing over a pulley, l, on the axle of one of the stripper-rollers, serves to drive the stripper in the direction indicated by the arrow.

The spur-wheel p' gears into a pinion, q, on a transverse shaft, Q, which shaft is also fitted with a pair of eccentrics, q'. These eccentrics work in straps carrying connecting-rods, R, and through those rods give a vibrating motion to bell-cranks R', to which the rods are respectively jointed.

The bell-cranks R' are pivoted to the sides of the box A, and fitted with segment-racks, which gear into the teeth of racks made fast to the ends of the comb-plates. As, therefore, the segment-racks are vibrated by the rotation of the eccentrics, the comb-plates will be alternately brought into action by the fibres fed to the mouth of the box A.

The pinion q, on the transverse shaft Q, gears into and drives a spur-wheel, e, on the cam and tappet-shaft E, and thus the longitudinal and vertical motions are communicated to the bars B. From this shaft E are also derived the motions for actuating the gill-roller K, the pendent rods M, and the transverse blade N.

The shaft E is fitted with a pulley, e<sup>1</sup>, from which a strap, e<sup>2</sup>, passes to a pulley, k, on a stud-axle, and thence to a pulley, s, on a transverse shaft, S, mounted in brackets at the front end of the box A. Pendent from disk-plates on the opposite end of this shaft, are rods m m, which connect with the cross-bar M', and, as the shaft is rotated by the strap e<sup>2</sup>, these rods give an up-and-down motion to the cross-bar, and, consequently, to the loose rods hanging upon the cross-bar. Thus the rods M are continually being lifted from and let fall upon the fibres fed up to the mouth of the box.

Keyed to the shaft S is a grooved cam, T, (see figs. 3 and 4,) into which enters a pin, projecting from the upper end of the rocking arm N'. The rotation, therefore, of this cam, imparts the required reciprocating motion to the saw-blade N.

The rotation imparted to the pulley k, by the strap e<sup>2</sup>, is transmitted, by pinions k<sup>1</sup> k<sup>2</sup>, to the gill-roller K, which, revolving in the direction of the arrow, fig. 2, will serve to regulate the supply of fibre to the mouth of the feed-box.

From the above explanation, it will be understood that the machine will deliver a feed of uniform quantity, so long as the box A is kept properly supplied with fibre, thereby insuring good and uniform work in the machines to which the feed is transferred. The apparatus for imparting motion to the various parts of this machine may be considerably changed, without affecting the operation of the parts.

Having thus described my invention,

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

1. The bars B, forming the bottom of the box, when moved both longitudinally and vertically, substantially in the manner and for the purpose herein shown and described.

2. In combination with the above, the transversely-sliding toothed plate N, as and for the purpose set forth.

3. The rotating comb H, in combination with a fixed grid, I, and roller K, and with the moving bars B, all made and operating substantially as and for the purpose above set forth.

4. The arrangement of the stripper L and curved shield I\*, with reference to the rotating comb H and grid I, as herein described, for the purpose specified.

5. The combination of the box A, bars B, toothed drum H, grid I, stripper L, roller K, and plates M N G, all arranged and operating substantially as herein shown and described.

The above specification of my invention signed by me, this 19th day of January, 1869.

WILLIAM OLISSOLD.

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