

(No Model.)

2 Sheets—Sheet 1.

S. M. GRAUMLICH.

BAND CUTTER AND FEEDER FOR THRASHING MACHINES.

No. 338,637.

Patented Mar. 23, 1886.

Fig. 1.

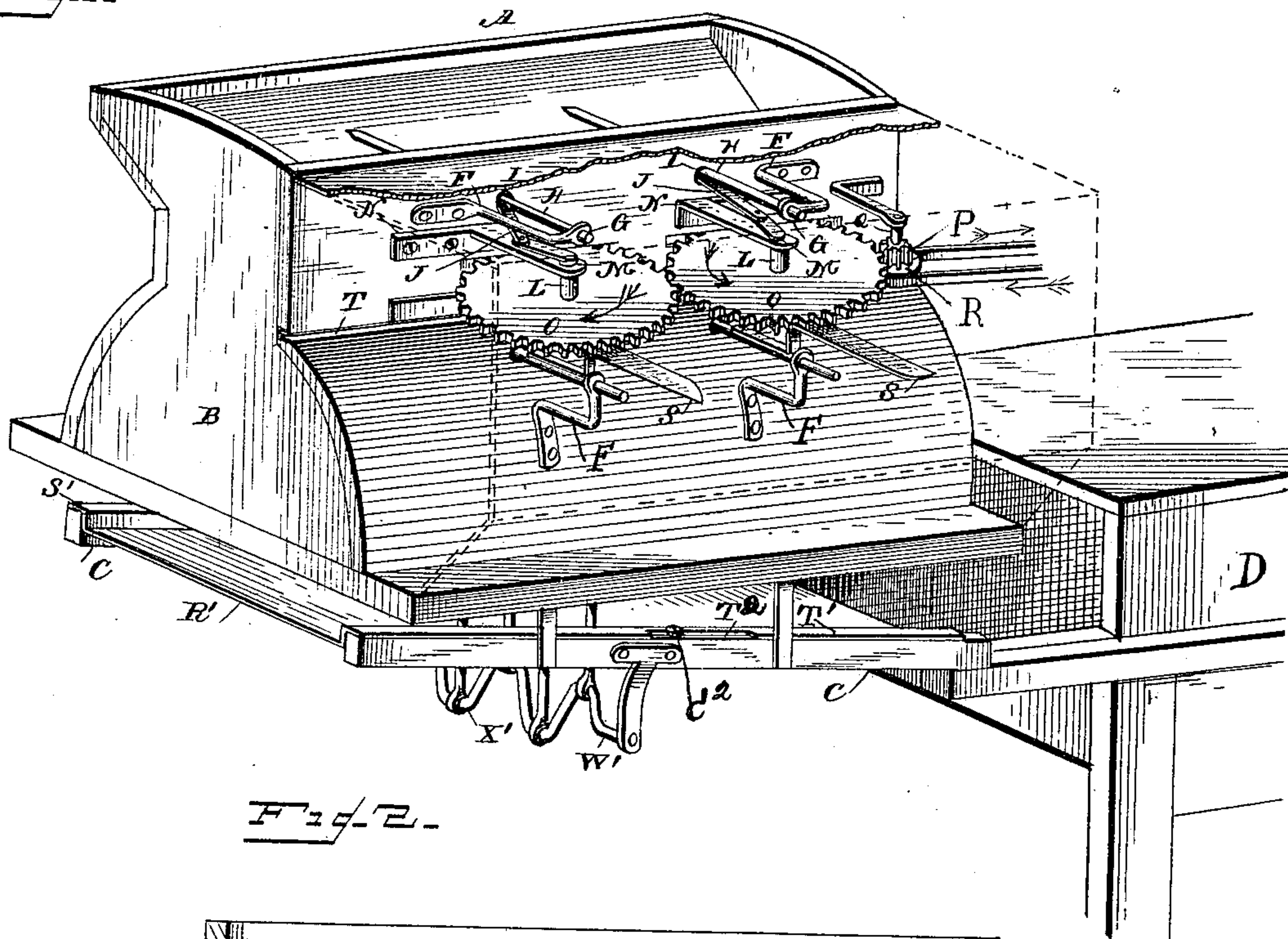
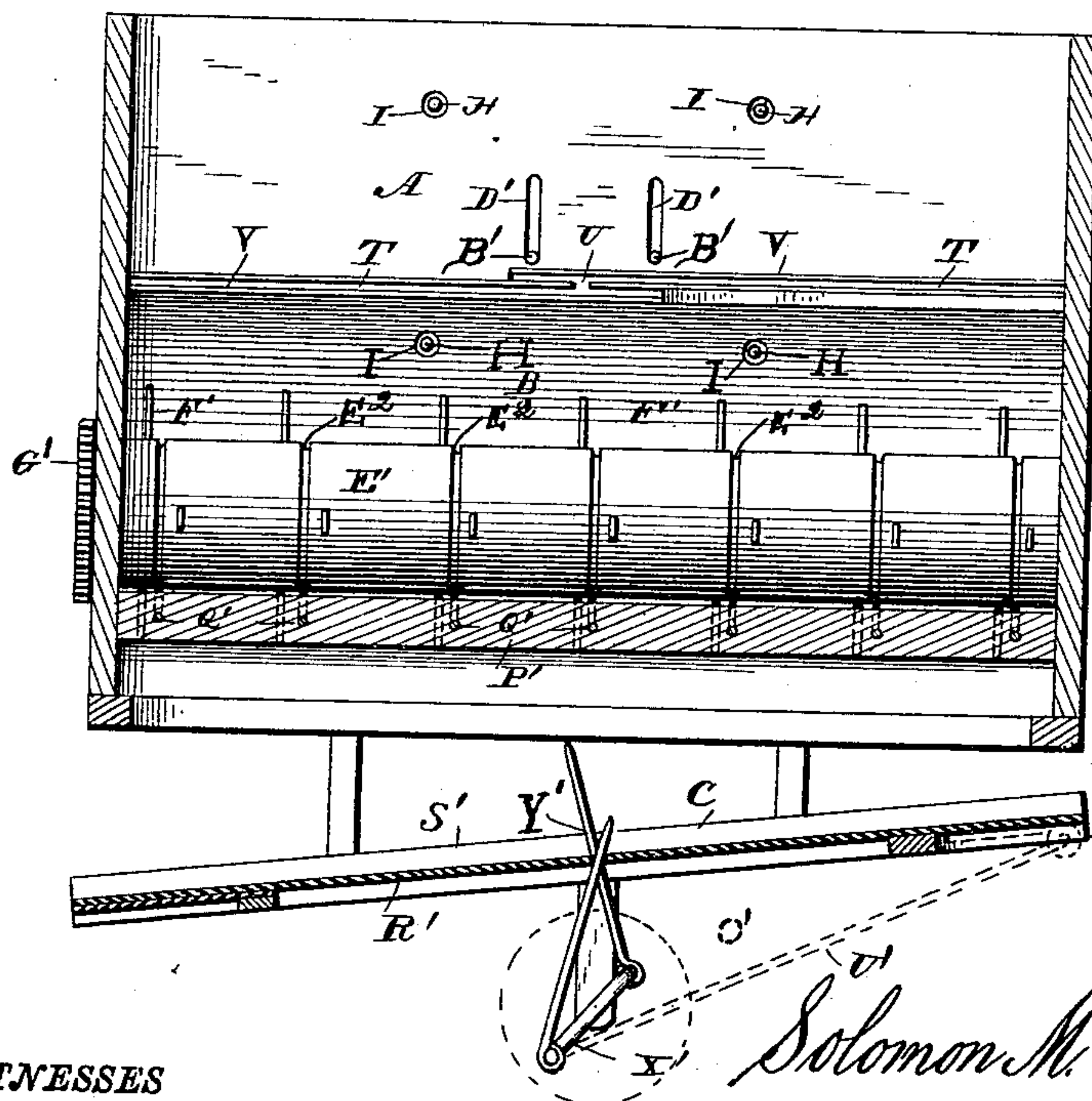


Fig. 2.



WITNESSES

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Fig. 3

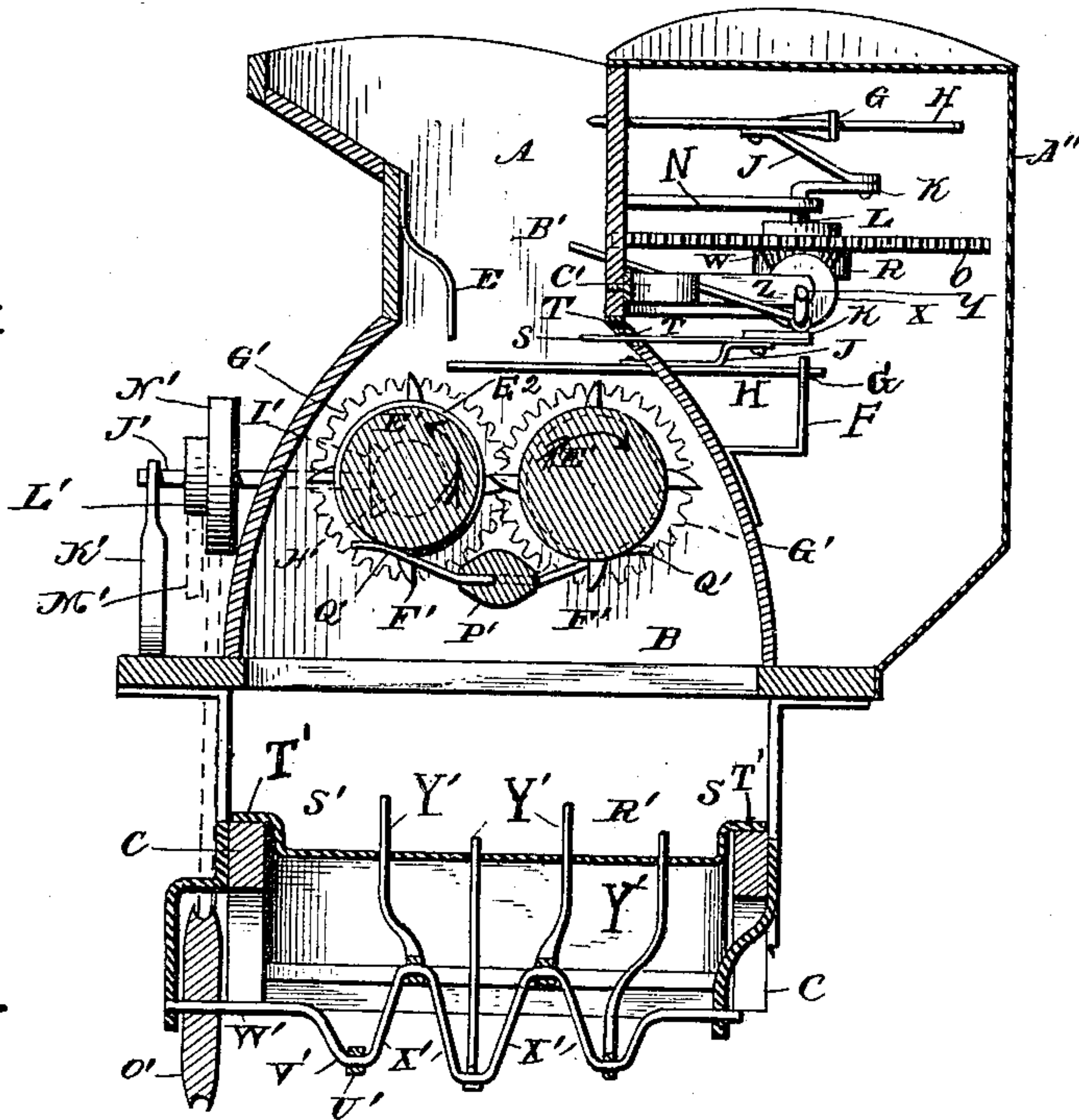


Fig. 4

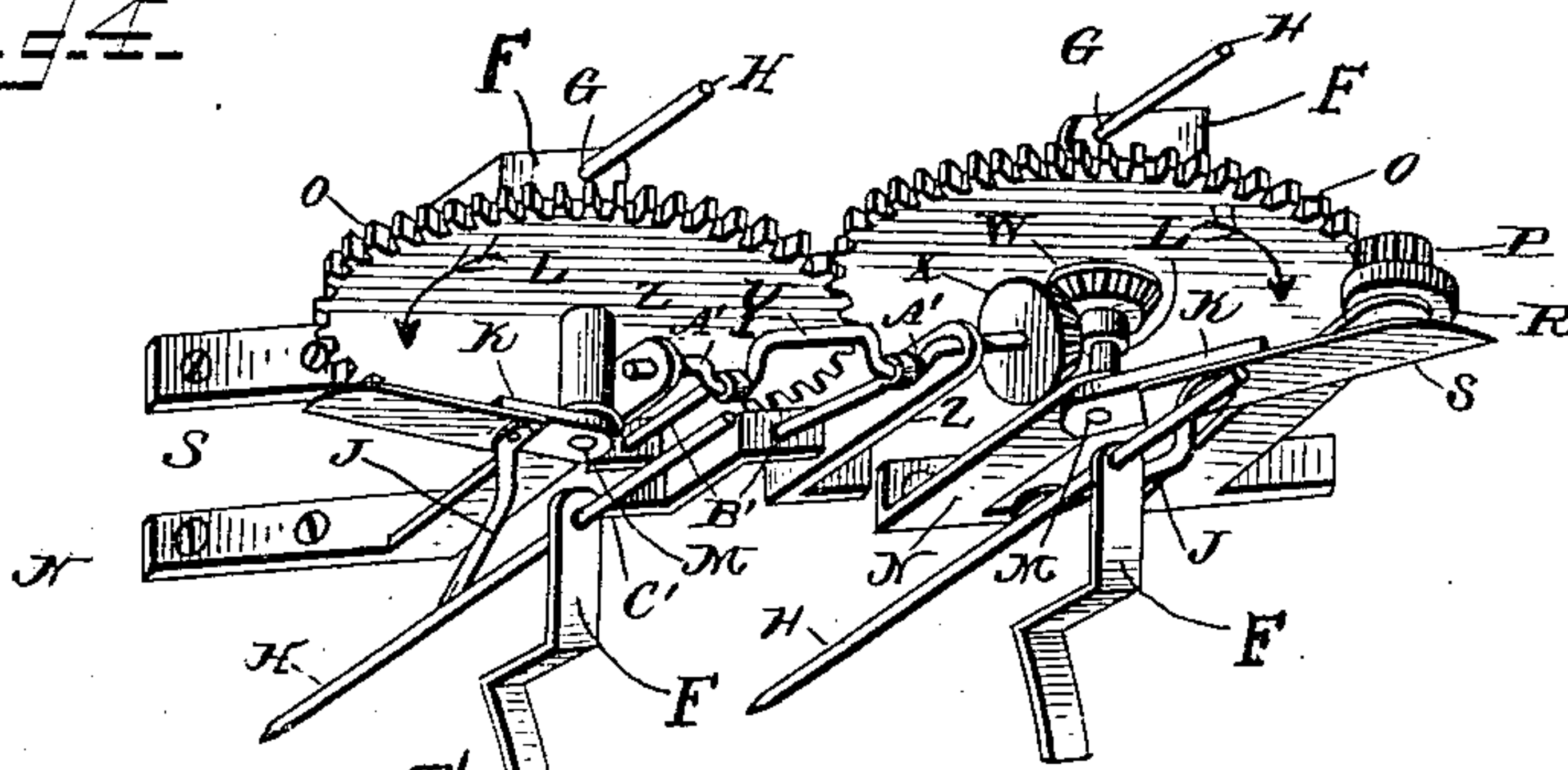
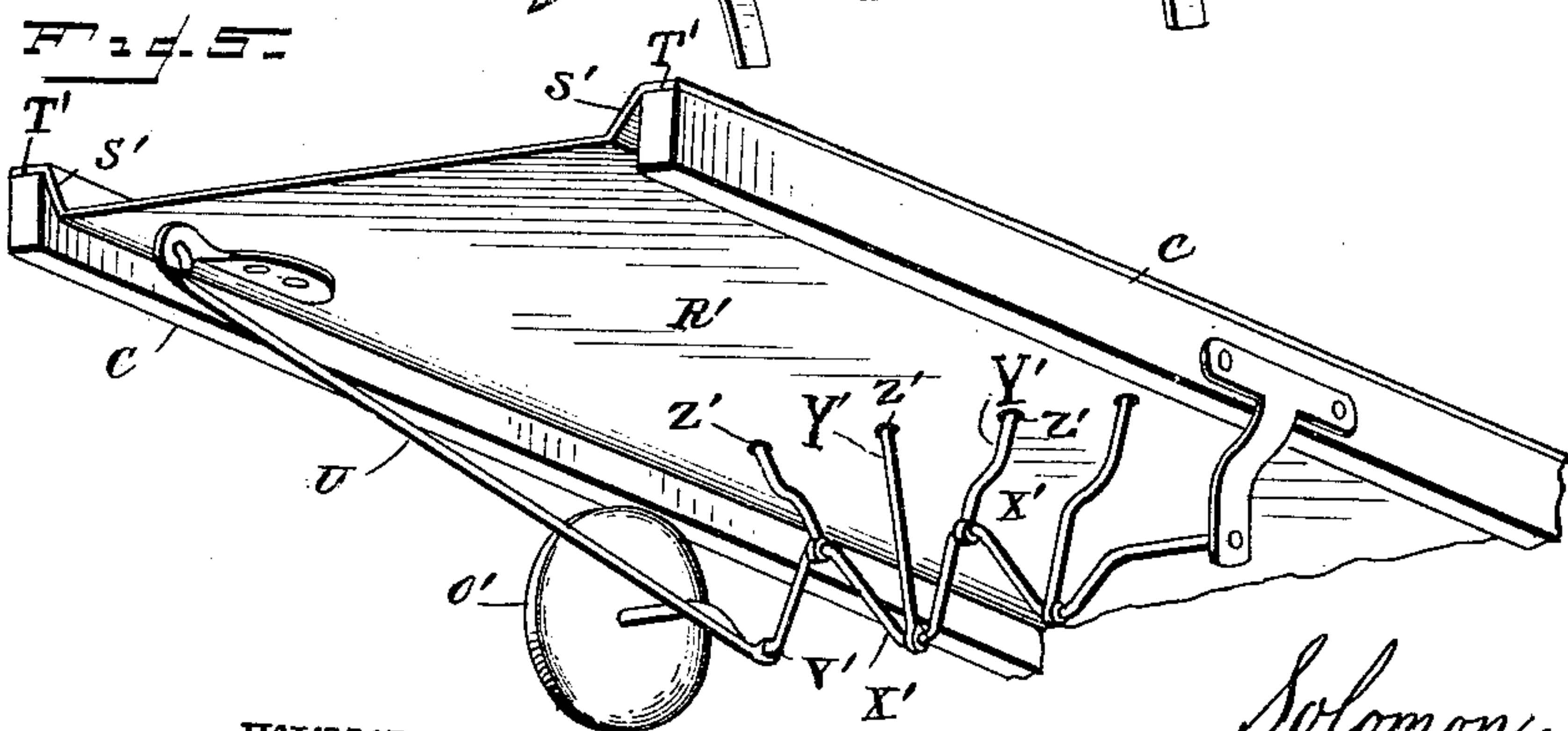


Fig. 5



WITNESSES

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UNITED STATES PATENT OFFICE.

SOLOMON M. GRAUMLICH, OF ASHVILLE, OHIO.

BAND-CUTTER AND FEEDER FOR THRASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 338,637, dated March 23, 1886.

Application filed November 19, 1885. Serial No. 183,304. (No model.)

To all whom it may concern:

Be it known that I, SOLOMON M. GRAUMLICH, a citizen of the United States, and a resident of Ashville, in the county of Pickaway and State of Ohio, have invented certain new and useful Improvements in Band-Cutters and Feeders for Thrashing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved band-cutter and feeder, showing it applied to a thrashing-machine, the table of the feeder being shown removed. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a cross-section. Fig. 4 is a detail perspective view of the cutting and sheaf-holding mechanism; and Fig. 5 is a similar view of a portion of the feed-table and its operating-shaft.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to band-cutters and feeders for thrashing-machines; and it consists in the improved construction and combination of parts of a machine having means for receiving only one sheaf at the time and for cutting the band of the same and spreading it, feeding the grain lengthwise into the thrashing-cylinder, and preventing any choking from too much grain passing into the machine at the time, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates a hopper secured at the upper side of a semi-cylindrical casing, B, which is secured lengthwise to the feed end of a thrashing-machine, inclined ways C C being secured under the said casing, so as to rest with their lower ends at the ends of the aperture of the thrashing-cylinder D. One side of the throat of the hopper is provided with springs E, secured at their upper ends to the side of the hopper and having their lower ends bulged into the hopper, and the opposite side of the hopper has two pairs of uprights, F, projecting from its outer side. The outer ends of

these uprights are bent at a right angle and formed with bearings G, in which separating-rods H slide, the inner ends of the said rods sliding in perforations I in the side of the hopper. These separating-rods, which are arranged as an upper and a lower pair, have pitmen J pivoted to them, which pitmen are pivoted to cranks K upon the ends of two vertical shafts, L, journaled in vertical bearings M in the outer ends of two pairs of outwardly-projecting brackets, N, upon the outside of the hopper. Cog-wheels O are secured upon these shafts and mesh with each other, and one of these cog-wheels meshes with a pinion, P, upon a short shaft, Q, journaled in brackets projecting from the end of the side of the hopper, and this short shaft has a pulley, R, by means of which motion is imparted to the shaft through a belt passing to a revolving shaft of the thrashing-machine, preferably to the cylinder-shaft. The cranks at the lower ends of the vertical shafts are diametrically opposite to the cranks at the upper ends, and a knife or cutter, S, projects radially from the end of each of the lower cranks, being secured to the side of the same. The side of the hopper is formed with two horizontal slots, T T, extending from the ends of the hopper to the middle of the same, one slot being slightly above the other, so that the inner ends of the slot will form an enlargement, U, and the under side of the upper slot and the upper side of the lower slot are provided with strips V, of metal, the ends of which project into the enlargement, forming edges or blades against which the cutters may bear, preventing the said cutters from drawing any straw through the slots as they are revolved with the shafts and pass through the slots into the hopper. One of the vertical shafts is provided with a bevel-pinion, W, which meshes with a similar pinion, X, upon one end of a horizontal shaft, Y, journaled in bearings in the outer ends of brackets Z, projecting from the side of the hopper, and this shaft is formed with cranks A', to which the outer ends of the feeder-arms B' are pivoted, the said arms sliding with their middles in bearings C', projecting from the side of the hopper, and having their inner ends projecting into the hopper through ver-

tical slots D' in the side of the hopper. Two longitudinal rollers, E' E', having radially-projecting pins or teeth F', are journaled in the semi-cylindrical casing below the hopper, 5 and the shafts of the said rollers are provided with cog-wheels G', meshing with each other, so that the rollers will revolve together in opposite directions. One of the cog-wheels is formed with a bevel-pinion, H', which 10 meshes with a similar pinion, I', upon the inner end of a shaft, J', journaled in brackets K' upon the end of the casing nearest to the thrashing-cylinder, and the shaft is provided with a small pulley, L', over which passes a 15 belt, M', from a pulley upon the cylinder-shaft of the thrashing-machine, and a larger pulley, N', over which passes a belt down to a pulley, O', upon a crank-shaft under the feed-table, which will be described later. A 20 longitudinal bar, P', is secured under the space between the rollers, and is provided with laterally-projecting spring-teeth Q', which bear with their ends against the surfaces of the rollers fitting within annular grooves E', 25 formed on the surfaces of the said rollers E', which grooves serve to prevent lateral play on the part of the said spring arms or fingers Q'. The feed-table R' slides with its flanged side edges, S', upon the inclined ways under the rollers, and is guided and kept upon the 30 said ways by means of lips T' upon the ways overlapping the flanged edges of the table, and a pitman, U', is pivoted to the upper end of the table at one end and at its other end it is 35 pivoted to a crank, V', upon the crank-shaft W', having the pulley O'. One of the lips T' of the feed-table R' is formed with the longitudinal slot T², through which a pin, C², extends into one of the inclined ways C, which 40 serves to regulate the throw of the feed-table, as will be readily understood. This crank-shaft is formed with a number of double cranks, X', to which are pivoted the lower ends of a corresponding number of pronged 45 arms, Y', which project through and slide in perforations Z' in the feed-table, the said perforations being made in a transverse row across the middle of the table. A hood or covering, A'', is secured over the mechanism 50 operating the cutters, and the top of this cover serves as a table to throw the sheaf upon before feeding it into the machine. The sheaf is placed upon the aforesaid table, and one sheaf is placed into the hopper, where it will first be 55 supported by the upper pair of separating-rods until the preceding sheaf has been cut and dropped, when the cranks upon the vertical shafts will withdraw the rods, allowing the sheaf to fall into the throat of the hopper resting upon the lower pair of separating-rods. 60 The cutters will now enter the side of the hopper, the springs in the same forcing the sheaf toward the slotted side, and they will meet with their ends at the same time, so that 65 the said ends will act as a pair of shears and cut the band of the sheaf. The lower sepa-

rating-rods will now be withdrawn, allowing the sheaf to drop from the hopper, the feeder-arms forcing the sheaf down, and the upper rods will be across the top of the hopper, 70 when the lower rods are withdrawn, preventing any sheaf from falling into the hopper before it is empty. The upper rods will now be withdrawn and the lower rods forced in, allowing a new sheaf to drop into the hopper, 75 and the cut sheaf drops down upon the rollers, which revolve outward and draw the grain by means of their teeth over their outer sides, dropping it upon the feeder-table, the teeth upon the longitudinal bar bearing against the 80 rollers, preventing any grain from becoming wrapped around the same. The feed-table is reciprocated upon its ways by the pitmen, and the pronged arms reciprocating through the apertures in the table will shake the grain 85 up and loosen it, so that it will be fed end-wise and evenly into the thrashing-cylinder.

Having thus described my invention, I claim and desire to secure by Letters Patent of the 90 United States—

1. In a band-cutter and feeder for thrashing-machines, the combination of means for holding a sheaf, a hopper having horizontal slots in its side, cutters revolving through the slots, 95 a pair of toothed rollers revolving outward in opposite directions, and an inclined feed-table having means for reciprocating it, as and for the purpose set forth.

2. In a band-cutter and feeder for thrashing-machines, the combination of a hopper hav- 100 ing two pairs of perforations in its side and registering bearings projecting from the side, shafts having cranks at their upper and lower ends and provided with gears engaging each other, rods sliding in the perforations, and 105 bearings and pitmen pivoted to the said rods and to the cranks, the said cranks being diametrically opposite to each other, as and for the purpose set forth.

3. In a band-cutter and feeder for thrashing-machines, the combination of a hopper hav- 110 ing two pairs of perforations in its side, and having two horizontal slots in its side having their ends nearly meeting at the middle of the side, brackets projecting from the side of the 115 hopper and formed with sliding bearings registering with the perforations, rods sliding in the perforations and bearings, oppositely-set crank-shafts, each with oppositely-set crank-arms, intermeshing cog-wheels there- 120 on, springs inside of the hopper opposite to the rods, pitmen connecting the cranks and rods, and knives secured to the lower ends of the crank-shafts and operating through the slotted side of the hopper, as and for the pur- 125 pose set forth.

4. In a band-cutter and feeder for thrashing-machines, the combination of a hopper having two vertical slots in its side, vertical crank- 130 shafts journaled upon the side of the hopper, cutters and separating-rods projecting from their cranks and operating in the hopper, a

pinion upon one of the shafts, a shaft jour-
naled horizontally upon the side of the hop-
per and having double cranks and a pinion
at one end, brackets projecting from the side
5 of the hopper and having bearings in their
outer ends, and feeder-arms pivoted to the
cranks and sliding in the bearings and having
their inner ends projecting through and rock-
ing vertically in the slots of the hopper, as
10 and for the purpose set forth.

5. In a band-cutter and feeder for thrashing-
machines, the combination of a pair of longi-
tudinal rollers having teeth and meshing
gears at their ends, a band-cutting mechanism
15 above the rollers, means for revolving the
rollers outward, and the longitudinal bar hav-
ing the projecting spring-fingers, as and for
the purpose set forth.

6. In a band-cutter and feeder for thrashing-
20 machines, the combination of a revolving
shaft having a number of cranks, an inclined
feed-table resting upon ways and having a
transverse row of perforations, a pitman piv-
oted to one crank and to the table, and a
25 number of arms pivoted to the cranks and
sliding in the perforations in the table, as and
for the purpose set forth.

7. In combination with a thrashing-ma-

chine, a band-cutter and feeder comprising
a hopper, means for holding one sheaf at the 30
time and for cutting its band, two toothed
longitudinal rollers below the hopper, means
for revolving them outward in opposite di-
rections, inclined ways resting with their
lower ends in the ends of the feed-aperture of 35
the thrashing-cylinder, a feed-table sliding
upon the said ways under the rollers, and
means for reciprocating it, as and for the
purpose set forth.

8. In a band-cutter and feeder for thrashing- 40
machines, the combination of a pair of longi-
tudinal rollers having teeth and meshing
gears at their ends, and formed with the an-
nular grooves, a band-cutting mechanism
above the rollers, means for revolving the 45
rollers outward, and the longitudinal bar
having the spring-fingers, substantially as de-
scribed.

In testimony that I claim the foregoing as
my own I have hereunto affixed my signature 50
in presence of two witnesses.

SOLOMON M. GRAUMLICH.

Witnesses:

J. LONGENBAUGH,
FRANK HUMBLE.