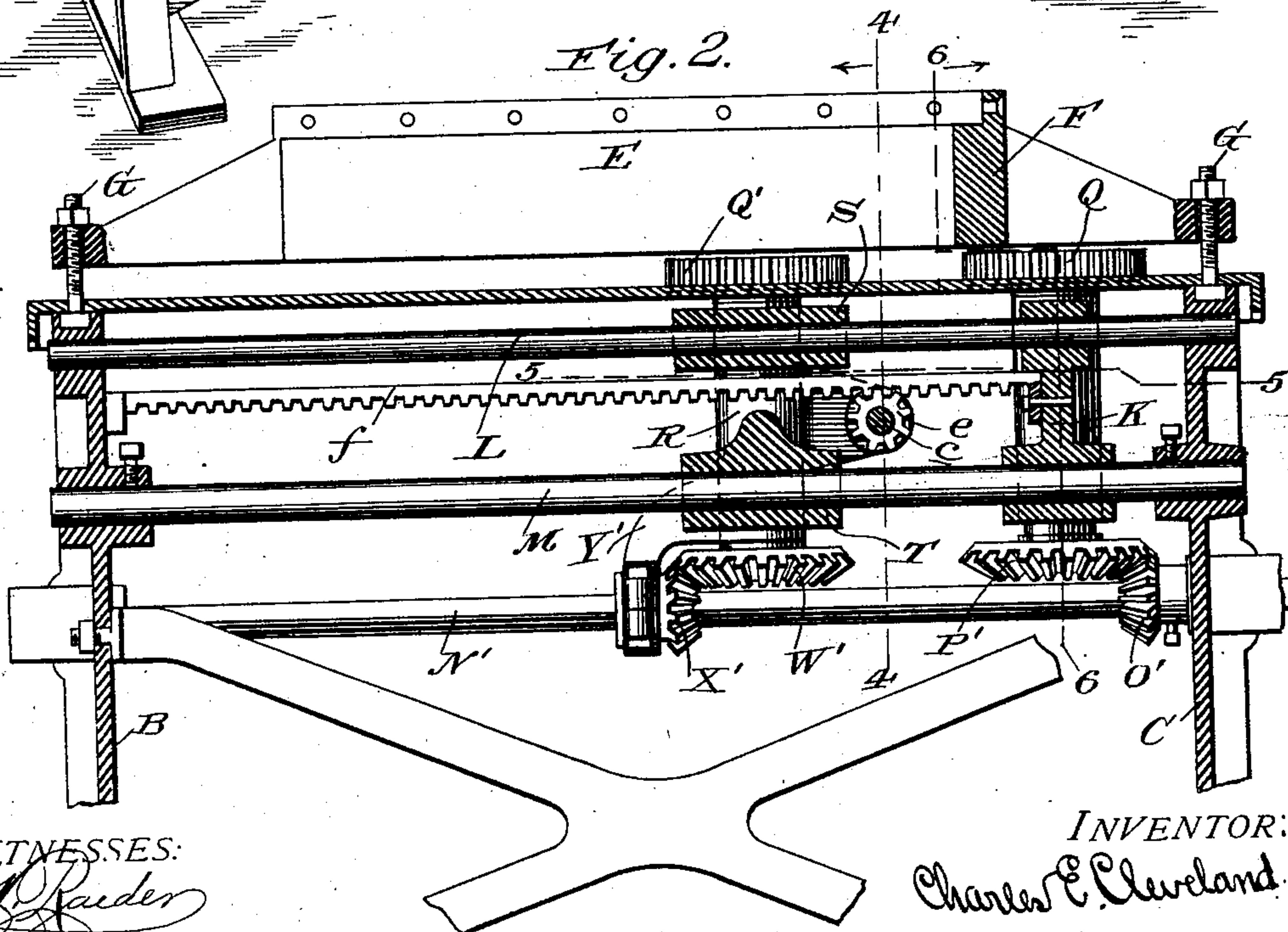


PATENTED MAR. 29, 1904.

APPLICATION FILED DEC. 26, 1903.

3 SHEETS—SHEET 1.



INVENTOR:

Charles E. Cleveland.

BY *Sledge and Sons*
Attorneys

No. 755,745.

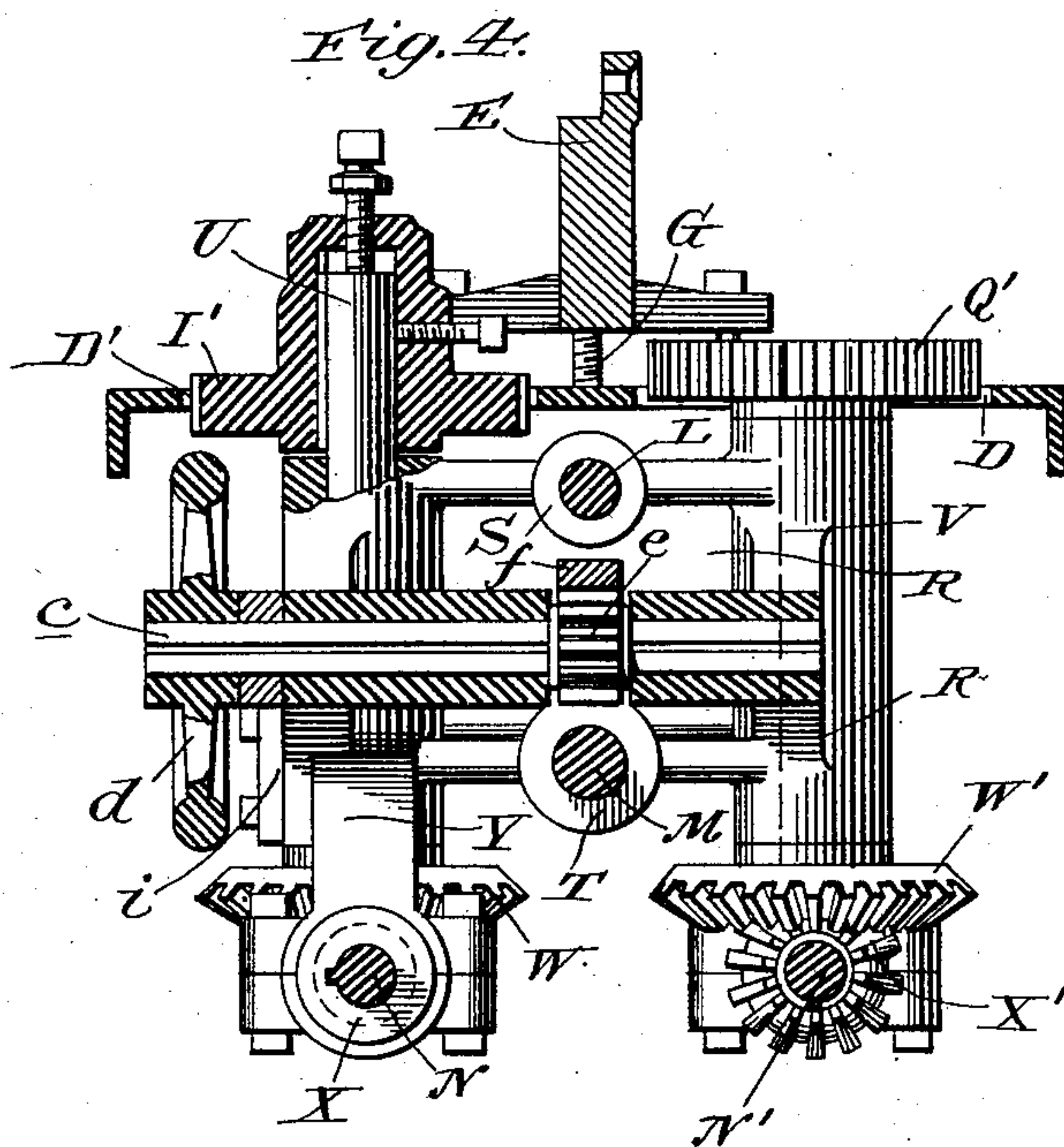
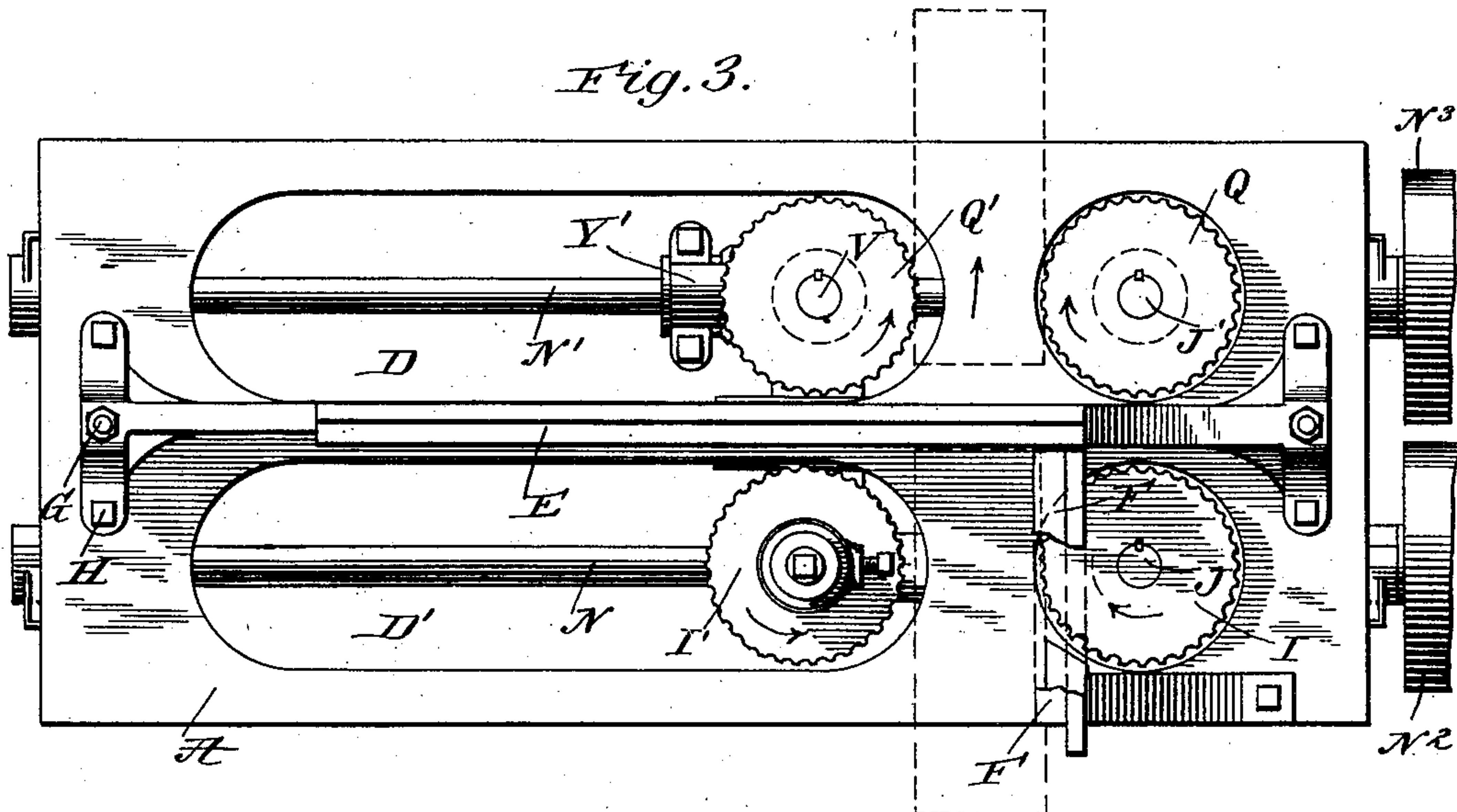
PATENTED MAR. 29, 1904.

C. E. CLEVELAND.
LUMBER FEEDING MACHINE.

APPLICATION FILED DEC. 26, 1903.

NO MODEL.

3 SHEETS—SHEET 2.



WITNESSES:

W. E. Purdine

INVENTOR:

Charles E. Cleveland

BY *Dodge and Son*
Attorneys.

No. 755,745.

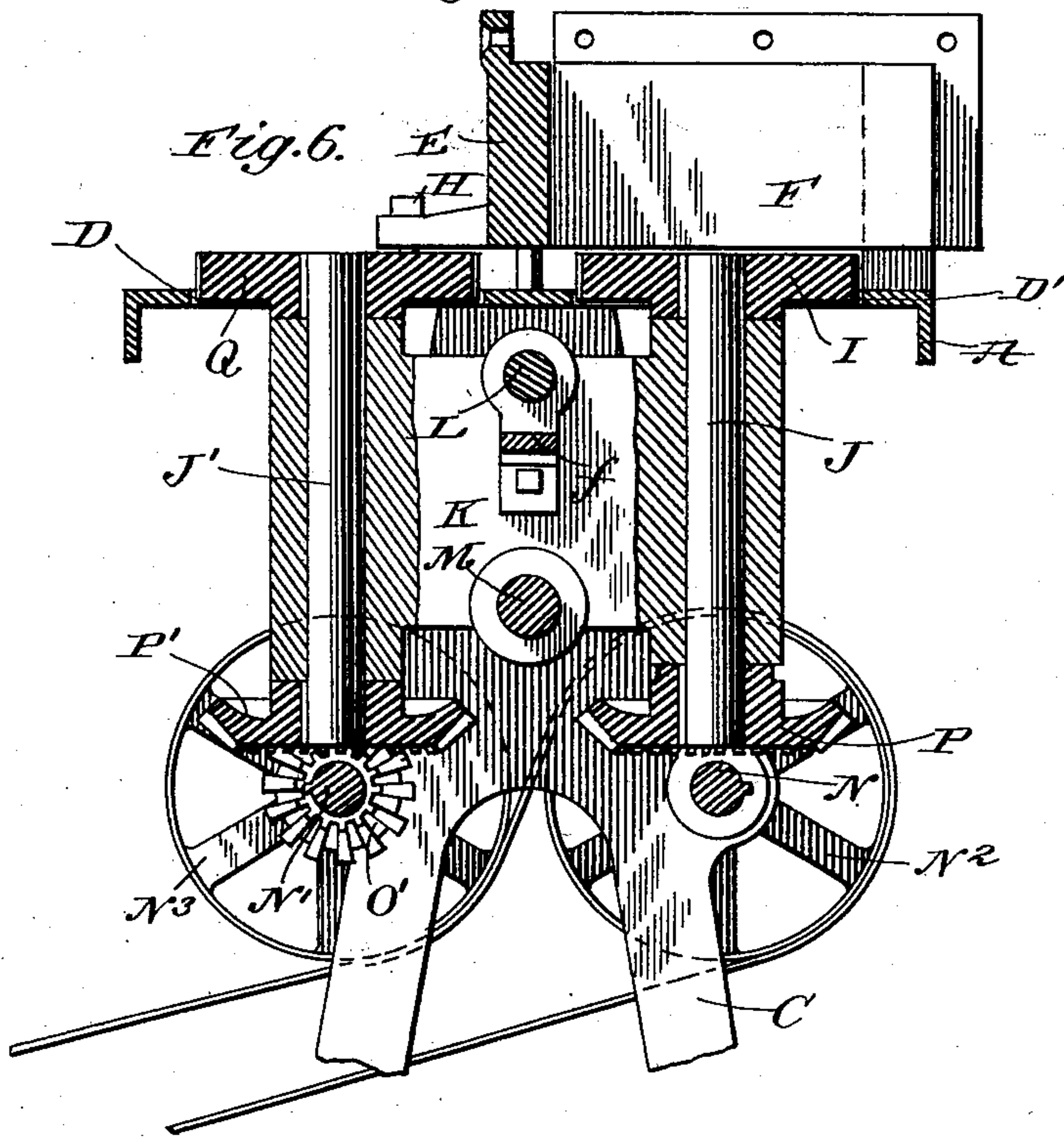
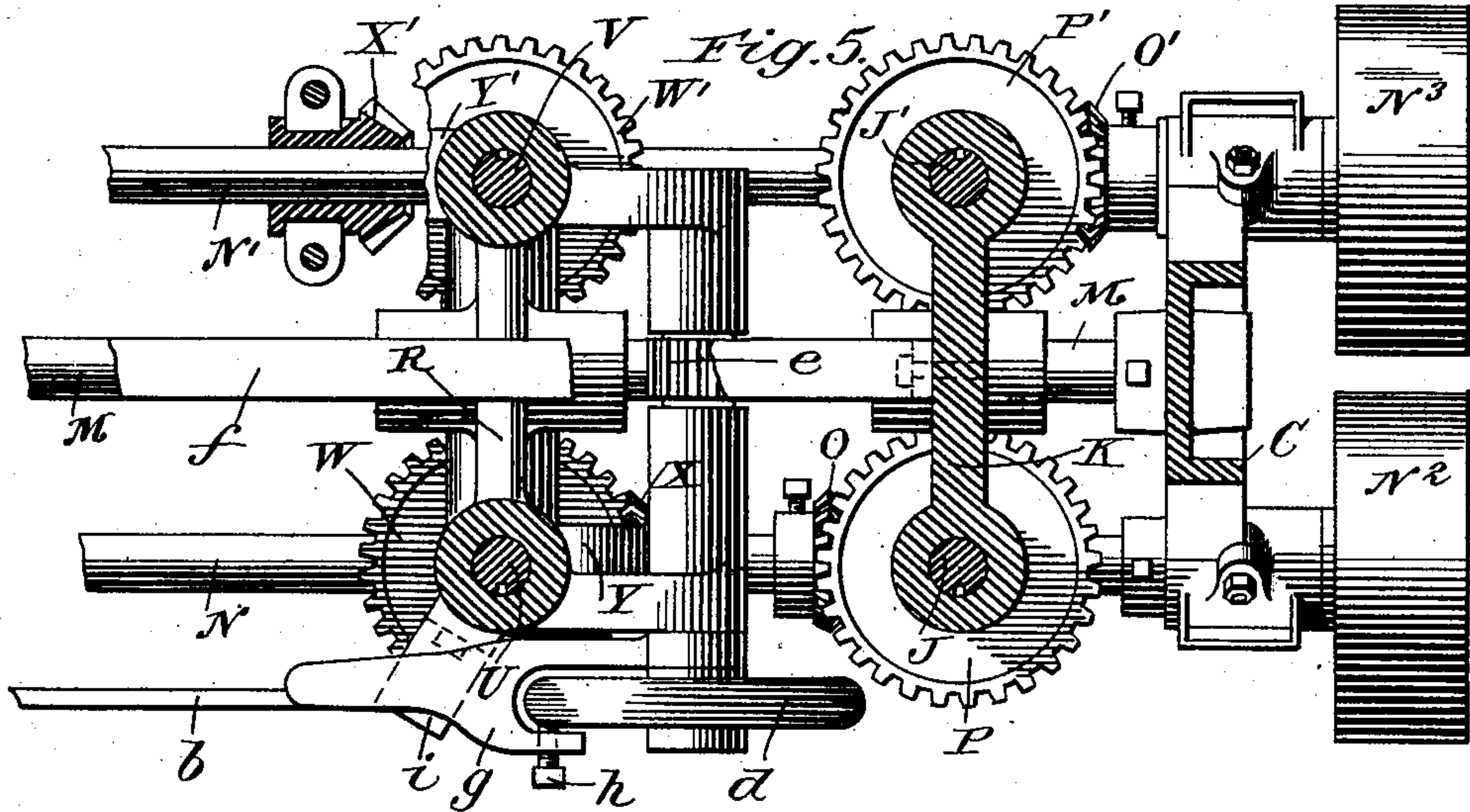
PATENTED MAR. 29, 1904.

C. E. CLEVELAND.
LUMBER FEEDING MACHINE.

APPLICATION FILED DEC. 26, 1903.

NO MODEL.

3 SHEETS—SHEET 3.



WITNESSES:

A. Gaeder
D. E. Burdine

INVENTOR:

BY *Charles E. Cleveland,*
Dodge and Sons,
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES E. CLEVELAND, OF FOND DU LAC, WISCONSIN.

LUMBER-FEEDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 755,745, dated March 29, 1904.

Application filed December 26, 1903. Serial No. 186,577. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. CLEVELAND, a citizen of the United States, residing at Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Lumber-Feeding Machines, of which the following is a specification.

My present invention pertains to improvements in lumber-feeding machines, the construction and advantages of which will be hereinafter set forth, reference being had to the annexed drawings, wherein—

Figure 1 is a perspective view of the machine looking at the same from the feed side; Fig. 2, a longitudinal sectional view thereof; Fig. 3, a top plan view of the same; Fig. 4, a vertical sectional view on the line 4 4 of Fig. 2; Fig. 5, a horizontal sectional view on the line 5 5 of Fig. 2; and Fig. 6 a vertical sectional view on the line 6 6, Fig. 2.

The object of my invention is to produce a lumber-feeding mechanism which will automatically handle stock of any desired length and thickness, the length being immaterial, as short and long pieces can be fed indiscriminately with equal facility.

The machine is so constructed that it may be adjusted to handle stock of any desired width and thickness, no attention being paid to the length of the various pieces as they are piled in the hopper. The lowermost piece is first withdrawn and fed forward, and the piece next above, which then becomes the lowest piece, is automatically grasped by the initial pair of feeding-rolls and passed on to the second pair of rolls, which not only grasp the timber, but by reason of such action cause the initial rolls to release their hold thereon. Immediately upon the discharge of the piece the initial rolls are automatically positioned so that they will grasp the stock then lying between them and, as before, pass it on to the discharge-rolls. This action is continued so long as any stock remains in the hopper, no attention on the part of the operator being required after the machine is once properly adjusted.

Referring to the drawings, A denotes the bed of the machine which rests upon suitable columns or supporting members B C. Mounted upon the bed and extending longitudinally thereof between two elongated openings D and D', formed therein, is a plate or casting E, which, together with a second plate or casting F, forms the hopper of the machine. Plate E is adjustable vertically with reference to the bed, being held in the desired position by bolts G and adjusting-screws H. Plate F is rigidly affixed to the bed, its lower edge extending slightly beyond the periphery of a feed-roll I, mounted upon a vertically-disposed shaft J, which shaft has its bearings in a stationary frame or casting K, said casting in turn being secured upon two rods or shafts L and M, secured between and carried by the supports B and C. A power-shaft N, in line with the lower end of shaft J, is also carried by the supports B and C, and a bevel-pinion O, mounted thereon, meshes with a bevel-gear P, secured upon the lower end of said shaft J. Through these connections motion is imparted to the feed roll or disk I in the direction indicated by the arrow in Fig. 3. A second shaft J' is mounted in the frame or casting K, said shaft carrying at its upper end a feed roll or disk Q and at its lower end a bevel-gear P', which meshes with a bevel-pinion O', mounted upon a second power-shaft N'. The parts are so related that the edge of the feed-roll I lies slightly in rear of the forward or working face of plate F, while projecting slightly beyond the face of the recessed portion formed at the lower edge of said plate immediately above the bed, as is best indicated in Fig. 1.

A frame or carriage R is slidably mounted upon the rods or shafts L and M, the shafts passing through elongated sleeves or bearings S and T, as best shown in Fig. 2. Said frame carries two vertically-disposed shafts U and V. Upon the lower end of shaft U is mounted a bevel-gear W, which meshes with a pinion X, carried by an arm or bracket Y, which extends downwardly from the frame R. The pinion is splined upon the power-shaft N and

receives its motion therefrom. A feed-roll I' is adjustably secured upon the upper end of shaft U, as best indicated in Fig. 4, so that the position of said feed-roll may be changed, according to the thickness of the lumber fed by the machine. A feed-roll Q' is mounted upon the upper end of shaft V, said shaft having secured to its lower end a bevel-pinion W', which meshes with a bevel-pinion X' upon the shaft N', said pinion being supported by an arm or bracket Y', extending downwardly from the frame or carriage R. As will be seen upon reference more particularly to Fig. 3, the shafts U and V are not in direct alinement with each other, so that the initial feed-rolls I and I' are at a slightly greater distance apart than the final feed-rolls Q and Q'.

The carriage R is normally held up to the work by a weight *a*, suspended from a lever *b*, said lever being fulcrumed upon a shaft *c*, which latter has secured to it a hand-wheel *d* and a pinion *e*. Said pinion meshes with a rack *f*, secured beneath the bed of the machine between frame K and support B. Lever *b* is provided with an arm or extension *g*, which passes to one side of the hand-wheel, and a set-screw *h*, mounted in said arm, enables the operator to lock the lever *b* to the shaft *c* by means of said screw and hand-wheel. This is done after the machine is given its initial adjustment for the stock which is to be fed. A stop *i* is secured to the frame or carriage R and limits the lever in its descent, thereby preventing the feed-rolls from being moved toward each other more than a predetermined distance. The tendency of the weight is, therefore, to force the frame R toward the frame K, thereby carrying the feed-rolls I' and Q' toward the feed-rolls I and Q.

As will be noted upon reference to the various figures of the drawings, each member E and F is provided at its upper edge with an offset and is drilled to receive wooden screws, so that the hopper may be extended to any height desired by securing boards to the upper edges of said members.

The operation of the machine is as follows: If it be desired to feed material of a certain width, the set-screw *h* is released from contact with the hand-wheel *d* and the frame or carriage R moved backward or forward, as required, until the feed-rolls I and I' are the proper distance apart. The screw *h* is then brought into contact with the wheel *d*, thereby locking the shaft *c* to the weighted lever *b*. The adjustable member E of the hopper is also regulated in order to permit lumber of the proper thickness to pass beneath the same, the adjustment being such as to preclude two pieces passing out at the same time. Motion being imparted to the shafts N and N' through band-wheels N² and N³, carried thereby, the lowermost piece of lumber will

be grasped by the feed-rolls I and I' and passed beneath the lower edge of member E. The forward end of the piece of timber will pass in between the rolls Q and Q', which being nearer together than the initial feed-rolls I and I' will grasp the piece and as a consequence cause the frame R to be moved backwardly to a slight extent, thereby releasing the grip of the rolls I and I' upon the material being fed. Immediately the piece of lumber is withdrawn from the hopper the piece next above, which then becomes the lowermost, will drop down between the feed-rolls I and I'. As soon as the first piece has been discharged from the rolls Q and Q' the frame R will through the action of the weighted lever be forced forwardly, thereby carrying the feed-roll I' forward or into a position where it will force the piece of lumber against roll I and feed it beneath the lower edge of the member E. This operation is continued so long as there is any stock to be fed, and it is wholly immaterial whether or not the pieces be of the same length, short and long pieces being fed with equal facility.

While the construction above described discloses the actual embodiment of my invention, still it is obvious that the machine may be varied in many of its details so long as the automatic operation of the initial feeding and discharge rolls is maintained.

Having thus described my invention, what I claim is—

1. In a machine for feeding lumber, the combination of two alining feed-rolls; a second pair of feed-rolls, movable toward and from said first pair, the distance between the first or initial feed-roll of said movable pair and its companion roll being greater than that between the remaining rolls; and means controllable by the second or final feed-roll for periodically separating and thereby rendering the initial feed-roll and its companion roll inoperative.

2. In a machine for feeding lumber, the combination of a pair of rolls arranged to grasp and feed a piece of lumber; a second pair of feed-rolls arranged to receive said lumber; and means for releasing the grip of the first pair of rolls as the second pair comes into action.

3. In a machine for feeding lumber, the combination of a pair of rolls arranged to grasp and feed a piece of lumber; a second pair of feed-rolls arranged to receive said lumber; and means automatically operated by said second pair of rolls for releasing the grip of the first pair as said second pair comes into action.

4. In a machine for feeding lumber, the combination of a pair of rolls arranged to grasp and feed a piece of lumber; a second pair of feed-rolls movable toward said first pair and arranged to receive said piece of lumber; means automatically operated by said second

pair of rolls for releasing the grip of the first pair as said second pair comes into action; and means tending normally to hold said rolls in their closest relation.

5 5. In a machine for feeding lumber, the combination of a bed; a hopper carried thereby; a pair of feed-rolls located adjacent to the hopper and arranged to withdraw the stock therefrom; a second pair of feed-rolls located in
10 rear of the hopper and in line with the stock advanced by the first pair of feed-rolls; and means for automatically throwing the initial feed-rolls into and out of action.

15 6. In a machine for feeding lumber, the combination of a primary feeding mechanism; a final feeding mechanism; and connections intermediate said mechanisms for automatically throwing the primary mechanism out of action as the final mechanism takes hold of the
20 stock.

7. In a machine for feeding lumber, the combination of a primary feeding mechanism; a final feeding mechanism; and connections intermediate said mechanisms automatically
25 throwing the primary mechanism out of action as the final mechanism takes hold of the stock, and returning said primary mechanism to its operative position when the stock is discharged from the final feeding mechanism.

30 8. In a machine for feeding lumber, the combination of a bed; a hopper mounted thereon; a pair of feed-rolls located in line with one side of said hopper; a second pair of feed-rolls, said second pair of rolls being out of alignment with each other; a carriage for supporting
35 said second pair of feed-rolls, said carriage being mounted upon suitable guides or ways; and means for normally holding the carriage and feed-rolls supported thereby up to the
40 work.

9. In a machine for feeding lumber, the combination of a bed; a hopper mounted thereon; a pair of feed-rolls located in line with one side of the hopper; a carriage slidably mounted
45 beneath the bed; a pair of feed-rolls supported by said carriage, the rolls being out of alignment with each other, substantially as described; and means for holding the carriage and feed-rolls supported thereby up to the
50 work.

10. In a machine for feeding lumber, the combination of a bed; a hopper mounted thereon; a pair of feed-rolls in approximate alignment with one side of said hopper; a carriage
55 slidably mounted beneath the bed; a pair of feed-rolls supported by said carriage, said rolls being out of alignment with each other; means for securing an initial adjustment of the carriage; and means for yieldingly holding the
60 carriage up to its work.

11. In a machine for feeding lumber, the combination of a bed; a hopper mounted thereon; a pair of feed-rolls in approximate alignment

with one side of said hopper; a carriage slidably mounted beneath the bed; a pair of
65 feed-rolls supported by said carriage, the rolls being slightly out of alignment with each other, substantially as described; a rack; a pinion mounted upon the carriage and meshing with the rack; a shaft upon which said
70 pinion is mounted; a weighted lever connected to the shaft; and a stop for limiting the descent of the lever.

12. In a machine for feeding lumber, the combination of a bed; a hopper mounted thereon; a pair of feed-rolls in approximate alignment with one side of said hopper; a carriage;
75 ways for supporting said carriage beneath the bed; a pair of feed-rolls supported by said carriage; a rack mounted beneath the bed; a
80 shaft on said carriage; a pinion carried by the shaft and meshing with the rack; a hand-wheel secured upon the outer end of said shaft; a lever fulcrumed upon the shaft; means for connecting said lever to the hand-wheel; and a
85 stop to prevent the lever from descending below a predetermined point.

13. In a machine for feeding lumber, the combination of a bed; suitable supports therefor; shafts L and M extending beneath the bed
90 intermediate said supports; a frame K mounted upon said shafts; a pair of vertically-disposed shafts mounted in said frame; a feed-roll mounted upon the upper end of each of
95 said shafts; power-shafts extending beneath the frame in line with said vertically-disposed shafts; gearing intermediate said power-shafts and the vertical shafts; a carriage slidably mounted upon the shafts L and M; a pair of
100 vertically-disposed shafts supported by said carriage, said shafts being slightly offset or out of alignment, substantially as described; a feed-roll carried by each of said shafts; gearing intermediate said shafts and the power-shafts; a rack secured beneath the bed; a horizontally-disposed shaft mounted upon the carriage; a pinion carried by said shaft and meshing with the rack; a hand-wheel secured to the
105 outer end of the horizontal shaft; a weighted lever fulcrumed upon said shaft; means for securing the shaft to the hand-wheel; and a
110 stop for the lever.

14. In a machine for feeding lumber, the combination of a bed; a hopper comprising a fixed side and a vertically-adjustable side;
115 a pair of feed-rolls approximately in alignment with said fixed side; a second pair of feed-rolls movable toward and from said first-mentioned feed-rolls; means for holding said rolls up to their work; and means for permitting adjustment of the initial feed-roll of said last-mentioned pair.
120

15. In a machine for feeding lumber, the combination of a bed; a hopper comprising a vertically-adjustable member E, and a member F fixed to the bed and provided with an
125

undercut portion, substantially as described;
a pair of feed-rolls in approximate alinement
with said member F, the edge of the first of
said rolls projecting slightly beyond the outer
5 face of said undercut portion; a second pair of
feed-rolls movable toward and from said first-
mentioned rolls; means for holding said sec-
ond pair of rolls up to the work; and means
for adjusting the initial roll of said second

pair vertically with relation to the bed, sub- 10
stantially as described.

In testimony whereof I have signed my name
to this specification in the presence of two sub-
scribing witnesses.

CHAS. E. CLEVELAND.

Witnesses:

HENRY RUEPING,
LOUIS DAUTERMAN.