

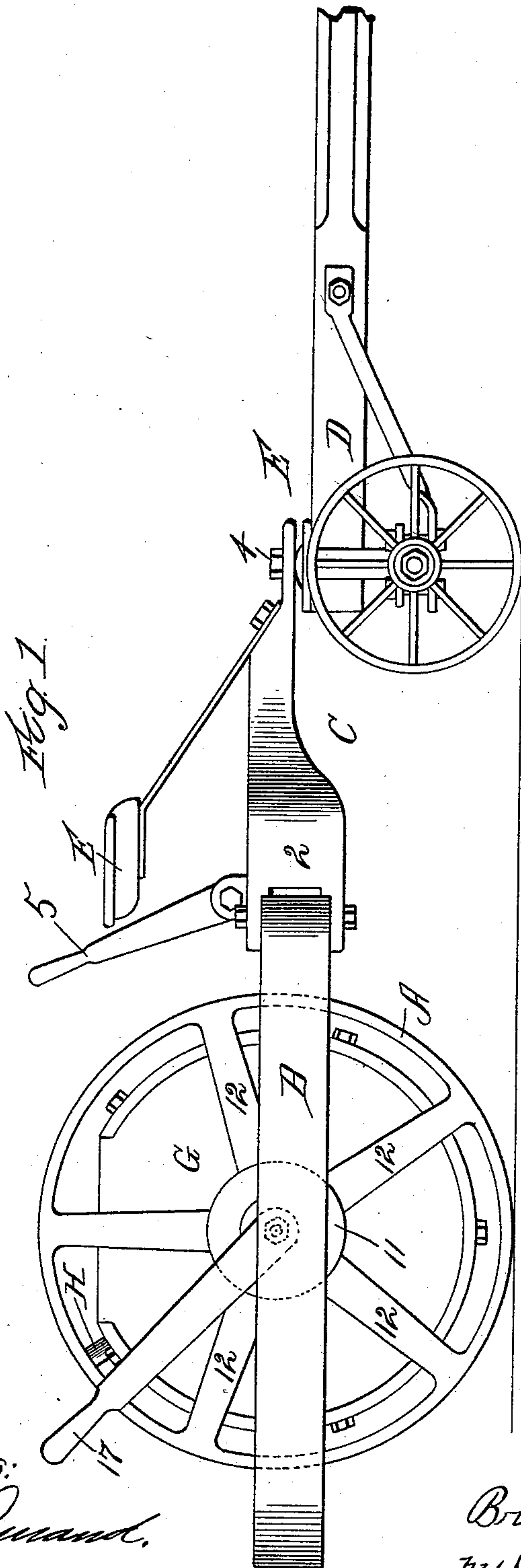
(No Model.)

3 Sheets—Sheet 1.

B. POULSON.
REVERSIBLE ROAD ROLLER.

No. 539,442.

Patented May 21, 1895.



Witnesses:

Arthur F. Ruman.
Reba M. Wagner

Inventor:
Britton Poulson.
by Chas. G. Page *Atty.*

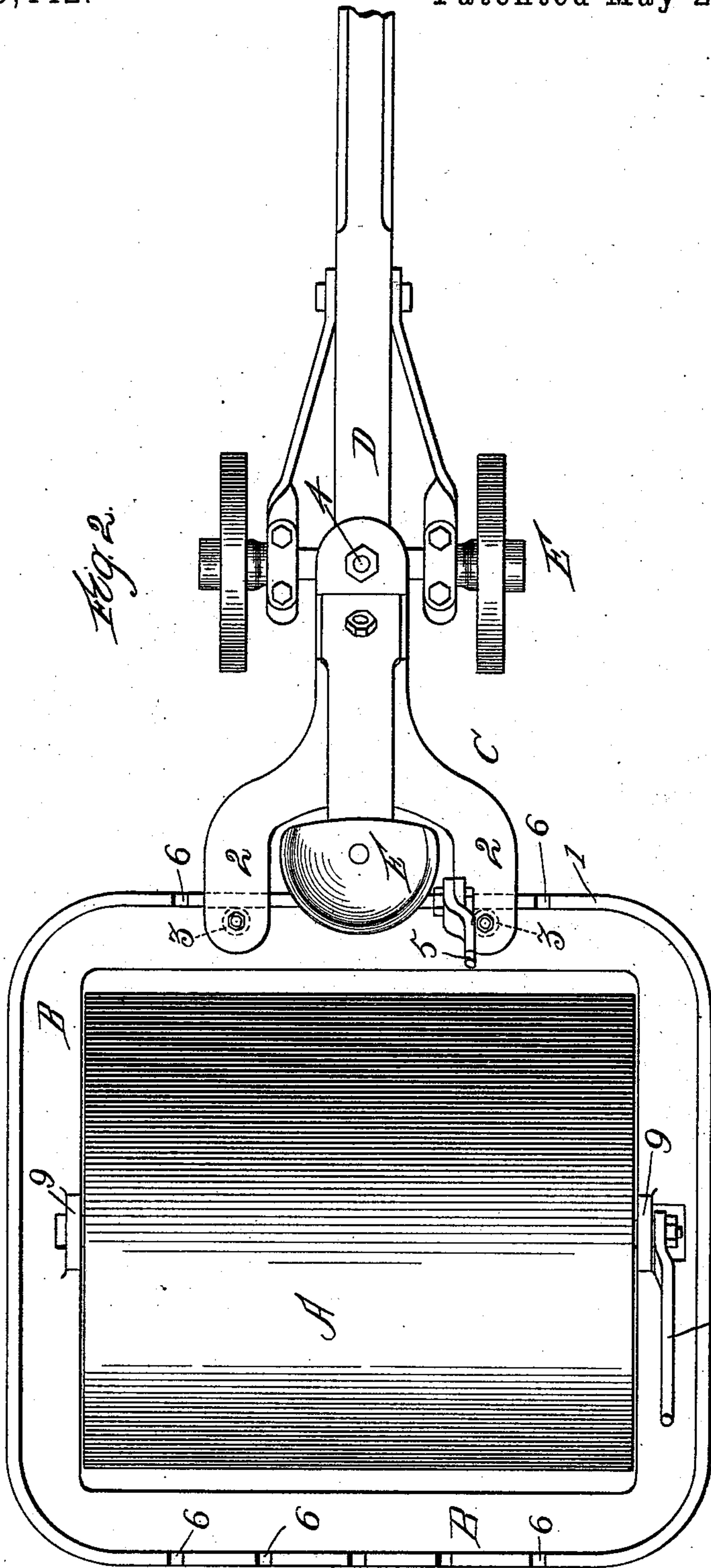
(No Model.)

3 Sheets—Sheet 2.

B. POULSON.
REVERSIBLE ROAD ROLLER.

No. 539,442.

Patented May 21, 1895.



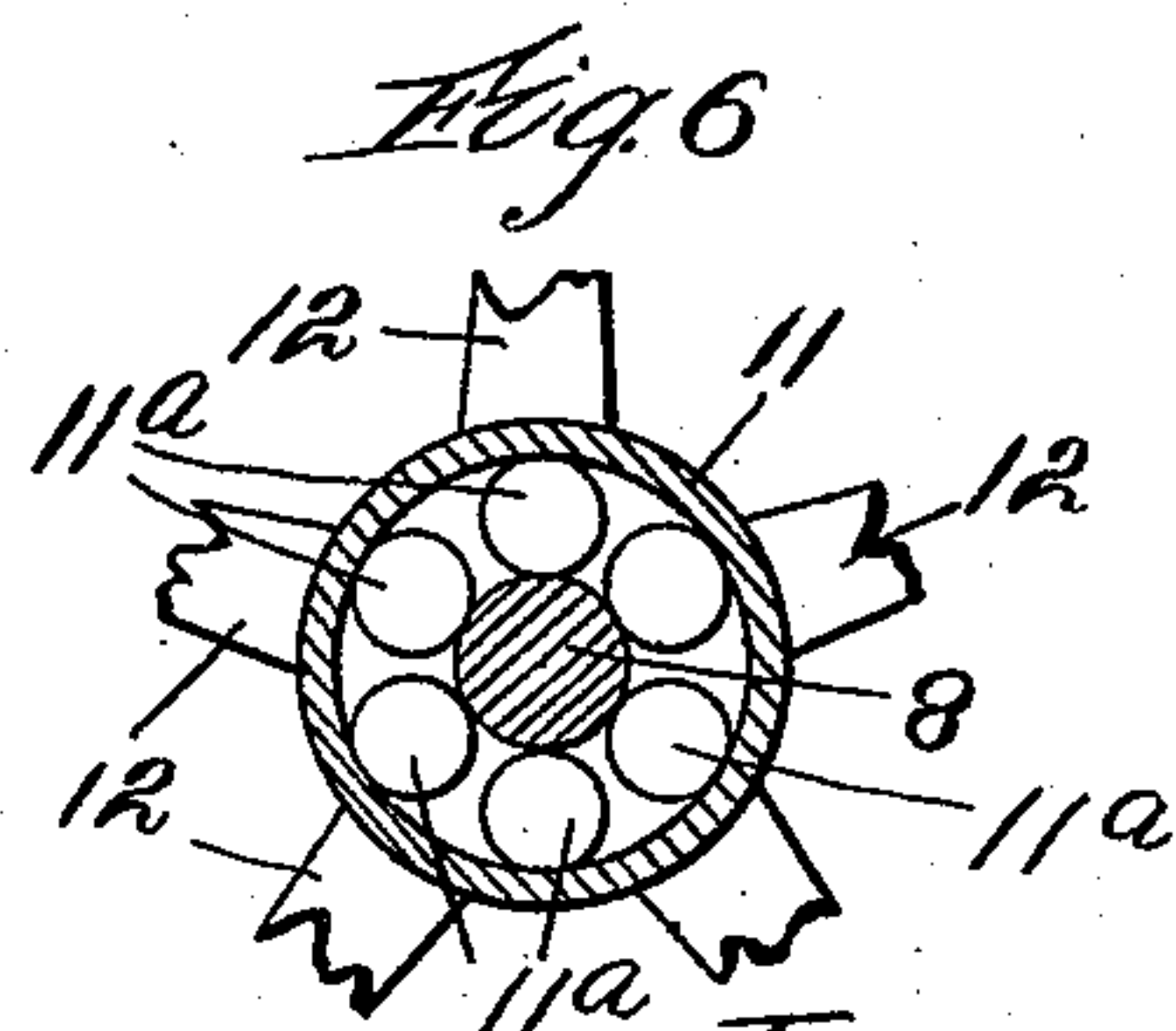
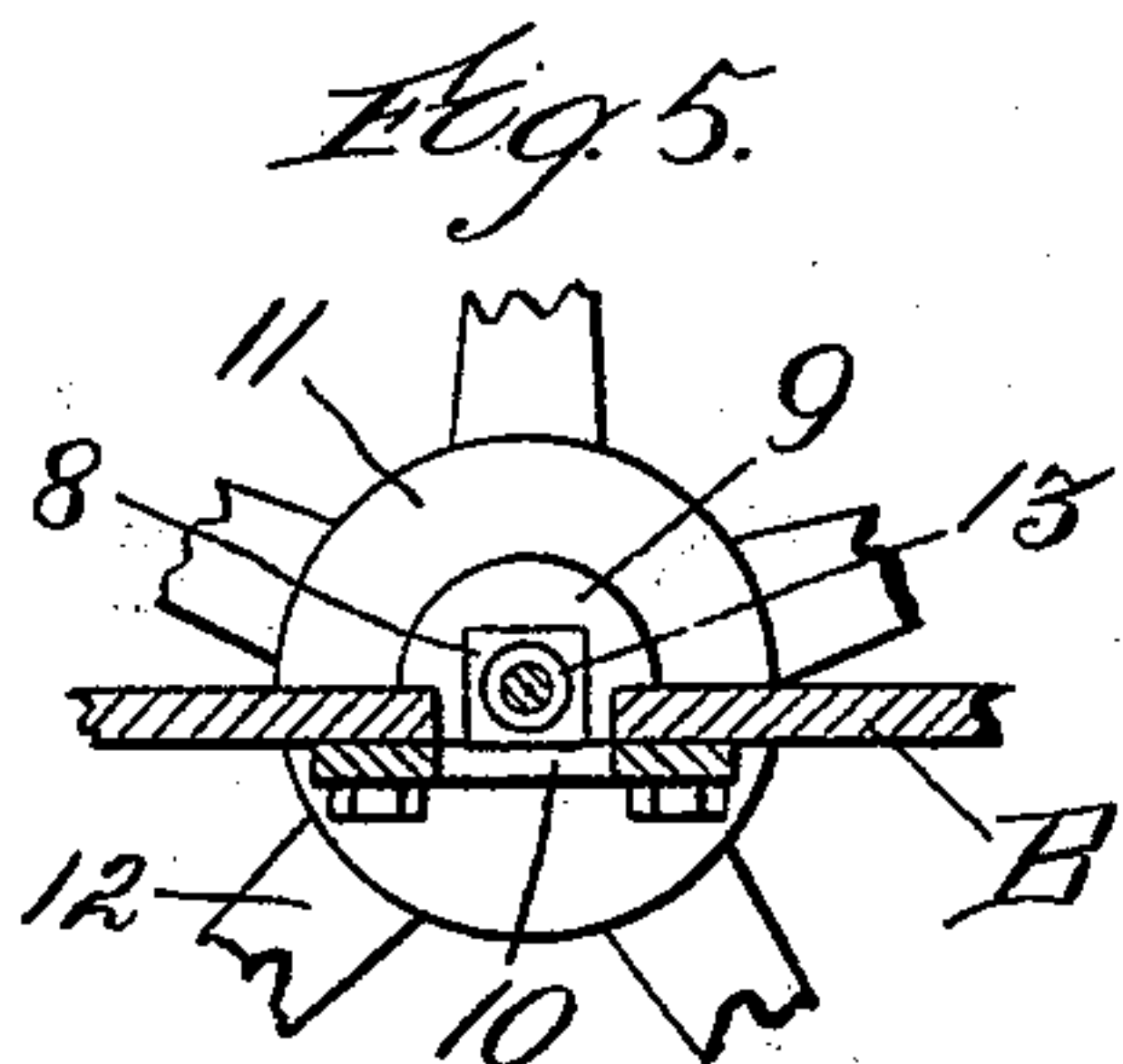
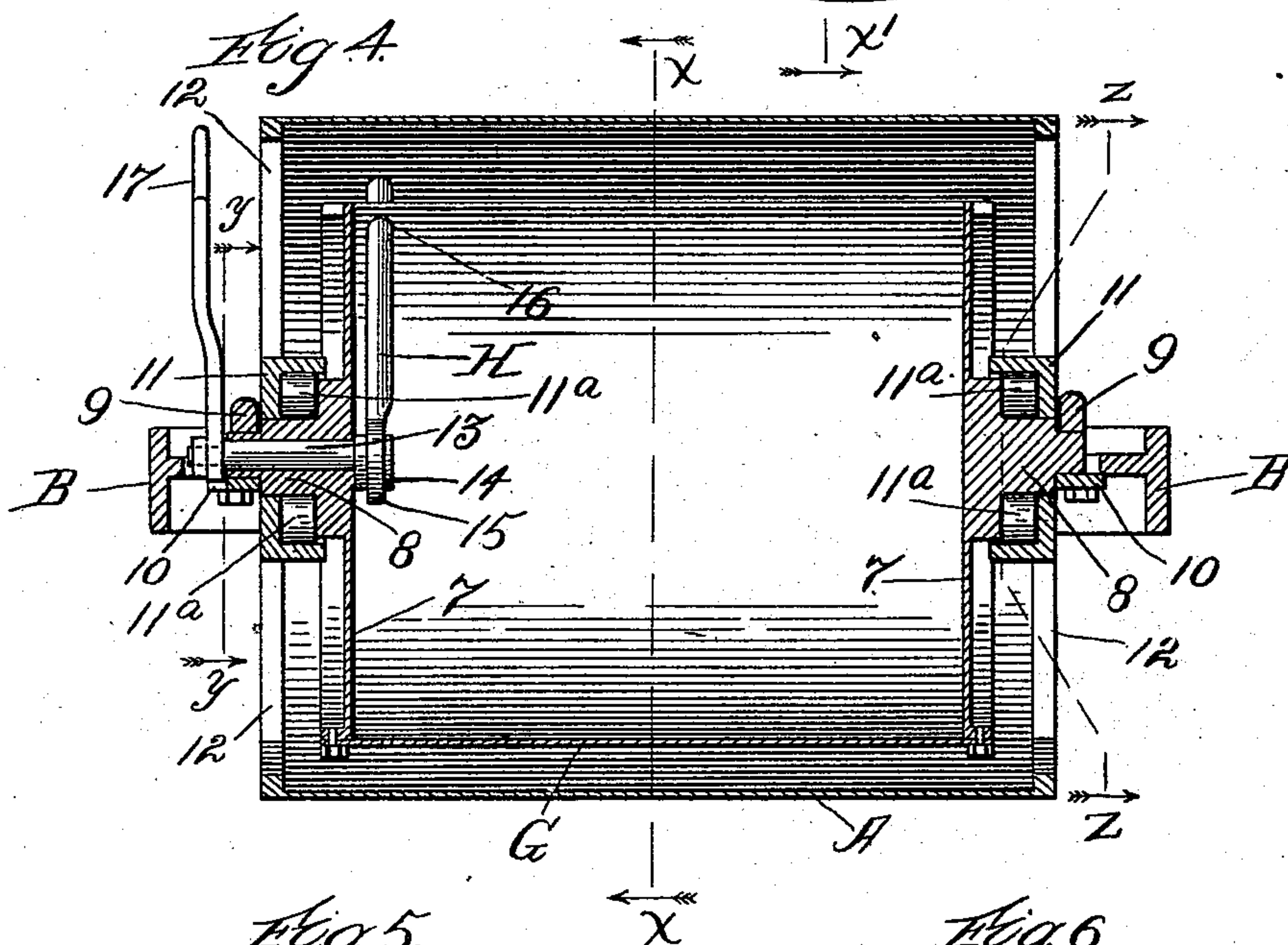
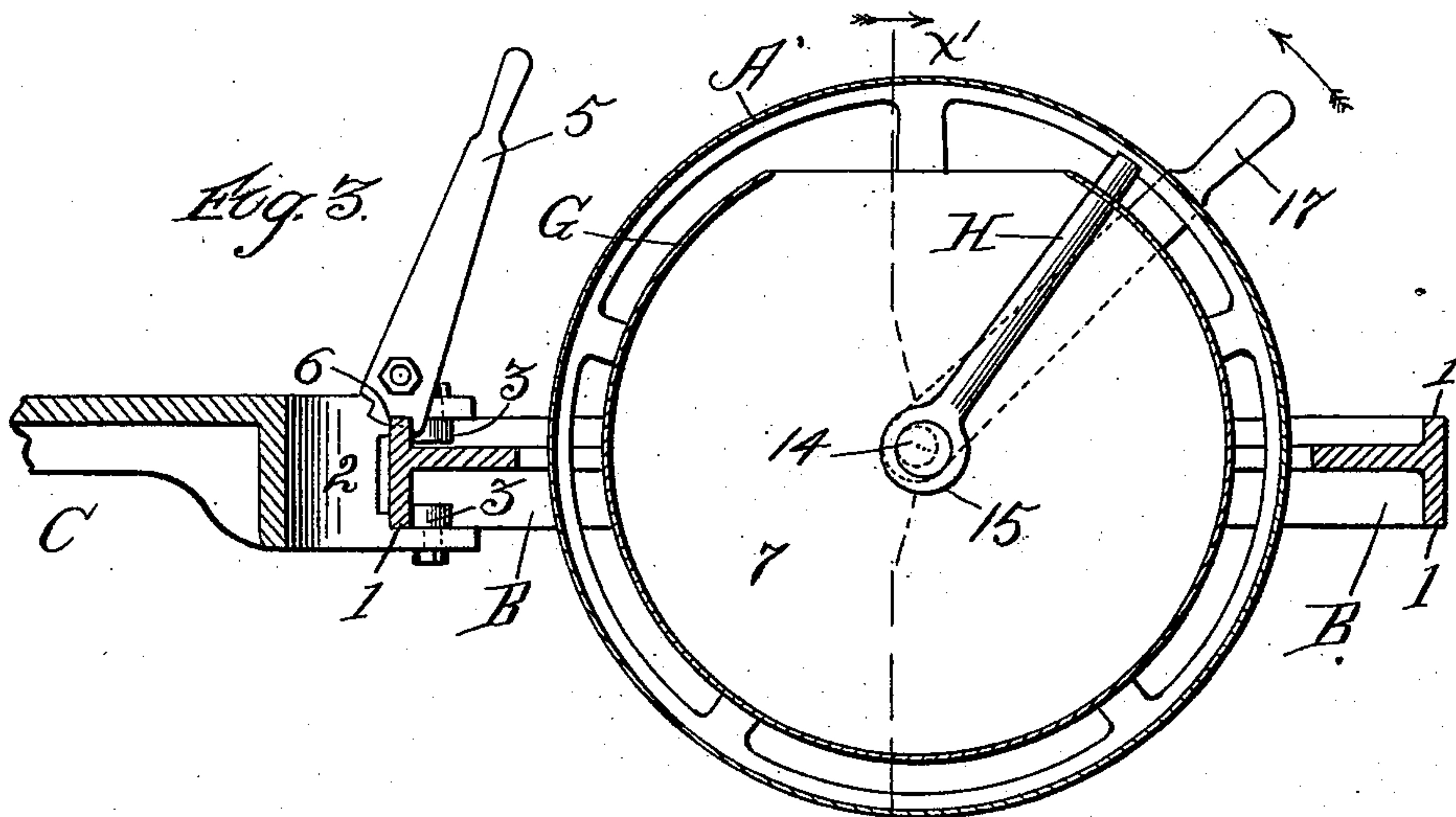
Witnesses:
Arthur L. Howard
Rex M. Wagner.

Inventor:
Britton Poulson
by Chas. T. Page & Co.

B. POULSON.
REVERSIBLE ROAD ROLLER.

No. 539,442.

Patented May 21, 1895.



Witnesses:
Arthur F. Duane.
R. M. Wagner.

Inventor:
Britton Poulson
by Char. F. Page *Atty.*

UNITED STATES PATENT OFFICE.

BRITTON POULSON, OF FORT WAYNE, INDIANA, ASSIGNOR TO FREDERICK C. AUSTIN, OF CHICAGO, ILLINOIS.

REVERSIBLE ROAD-ROLLER.

SPECIFICATION forming part of Letters Patent No. 539,442, dated May 21, 1895.

Application filed December 8, 1894. Serial No. 531,220. (No model.)

To all whom it may concern:

Be it known that I, BRITTON POULSON, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented a certain new and useful Improvement in Reversible Road-Rollers, of which the following is a specification.

My invention relates to road rollers of the kind in which a draft attachment can be shifted from one to the other of the two opposite sides of the roll, so as to permit the roll to be drawn alternately in opposite directions as a result of simply changing the direction of the draft. Rollers of such nature are commonly termed reversible rollers.

In a reversible road roller characterized by my invention, the roll is arranged within a frame which is extended about the roll and supported by journals at opposite ends of the latter. The draft-attachment or device has a shifting connection with said frame, which latter provides a track along which the draft device can be shifted without breaking connection between the two. By such arrangement, the roll can be drawn along a street or road to any desired extent, and upon arriving at the proposed limit of travel in one direction, the draft can be shifted to the opposite side of the roll by driving the team around to such side, since during such operation, the draft-device will shift along the track-frame, and when the draft-device is at either side of the roll, it can be locked upon the track-frame by any suitable locking means. During said operation of shifting or reversing the draft, the track-frame will be held against undue tilt by one or more wheels employed in connection with the draft-device as hereinafter more fully set forth.

In conjunction with the roll I provide a brake which is arranged within the roll and adapted for engaging the inner side of the latter. I also arrange within the roll a receptacle having end journals which pass through hubs at the ends of the roll and engage the track-frame, and as a desirable arrangement, one of said journals is made hollow so as to permit a rod for operating the brake to be extended through the same.

Prominent objects and advantages of the foregoing matters are simplicity of structure;

economy in manufacture; and rapid and convenient work. Further details serving to increase the general efficiency of the reversible roller are hereinafter described in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of a road-roller embodying my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical section through the roll, frame, and a portion of the draft attachment, taken on line $x x$ in Fig. 4. Fig. 4 is a section through the roll on line $x' x'$ in Fig. 3. Fig. 5 is a detail view partly in elevation and partly in section, the section being on line $y y$ in Fig. 4. Fig. 6 is a detail view partly in elevation and partly in section, the section being taken through one of the journals on line $z z$ in Fig. 4.

The roll A, is positioned within a horizontally arranged frame B, which extends about the roll and while providing a connection between the roll and the draft-attachment or device C, it further provides a guide or track along which the draft attachment can slide or shift when it is desired to reverse the direction of the draft. The frame B which I term a track-frame, is provided with upper and lower continuous flanges 1, 1 and the draft-attachment C is adapted to engage such flanges so that while it can be moved along the frame it will maintain connection with the same.

The draft-attachment desirably engages the track-frame at points separated from one another to an extent suitable to provide a steady and reliable bearing engagement, and to such end the draft-attachment has a yoke-shaped portion whereof the arms 2, 2, are forked at their ends so as to embrace the upper and lower flanges 1 of the track-frame. The ends of said forked portions of the yoke-arms can have any suitably formed projections arranged to lie alongside the inner vertical walls of the flanges 1, but as a preferred arrangement, said projections can consist of anti-friction rolls 3, whereby the draft-attachment will move easily along the track or guide-way provided by the double-flanged frame B.

The rear portion of the pole D is attached to a wheeled truck or carriage E which while serving to uphold the pole, also at all times

upholds the draft-attachment. This truck or carriage could have a single wheel, but it is preferably two-wheeled so as to afford a firm and steady support and also permit the draft attachment to steadily sustain a driver's seat F, which is arranged upon the forward portion of the draft-attachment.

The carriage E is pivoted to the draft-attachment by a pivot bolt 4, so that in driving the team around the roll for the purpose of shifting the draft-device, the pole can swing laterally and independently of the draft-attachment, and thereby permit the team to be easily driven in the path of a circle about the roll and frame. The device shown for temporarily locking the draft attachment upon the track-frame comprises a swinging bar 5 pivoted on the draft-attachment and adapted to engage in some one of the shoulders or notches 6 formed in opposite sides of the track-frame. Other locking means can however be employed. The weight of the driver will obviously be sustained by the wheeled truck or carriage, and hence, it will not interfere with the operation of shifting the draft-attachment along the track-frame; also, the weight of the driver will tend to maintain the pole in a raised condition and thereby relieve the horses.

The roll A is made hollow, and contains a part cylindric receptacle G which can be filled with water where the same is more convenient for weighting down the roll. The receptacle G has its ends or heads 7 provided with journals 8 which engage the track-frame. As a simple and desirable arrangement, these journals have squared or polygonal ends which fit in squared bearings 9 in the frame, said bearings being completed and closed underneath by plates 10 bolted to the frame and forming the lower sides of such bearings. In this way, the frame can be readily fitted to and also removed from said journals, and when applied to the same, rigid connection between the frame and receptacle will be maintained.

The roll is provided at its ends with hubs 11 which are rigidly connected with the roll by spokes or radial arms 12. The journals 8 extend through said hubs on the roll, and hence while the roll can turn freely about the journals, the frame can tilt when the nature of the ground requires such movement. Anti-friction rolls 11^a can also be arranged between said journals and hubs.

The brake proper H is in the nature of a cam or shoe which can be adjusted so as to engage and bind upon the inner surface of the roll. The rod 13 for operating this brake extends axially through one of the journals is axially forced for such purpose. The rod operates as a rock-shaft, and has at its inner end an eccentric 14 upon which the brake is fitted to work after the manner of a strap and eccentric. To such end the brake has an eye 15 fitted upon the eccentric on the rod. The

brake extends and works through a guide opening 16 in the receptacle, and the outer end of the rod is provided with an operating handle 17 arranged alongside one of the bearings 9 which are provided on the frame. By properly swinging the handle, the eccentric movement hereinbefore described will move the shoe or brake device in a direction to bring its outer engaging end against the inner wall of the roll, and since the bar which forms said brake or shoe is tangential to the axis of the rod 13, movement on the part of the roll will cause the brake to bind more firmly against its inner wall. In this way the roll can be held against rotation whenever such arrestment is found desirable, it being understood that by properly manipulating the brake-handle, the brake can be put on light or heavy, according to need.

During the act of driving the team around the roll so as to reverse the draft, the draft attachment will move easily and readily along the track frame, regardless of such lateral deflection as may be given the pole by the movement of the team, and during such operation, the truck or carriage will sustain the draft-attachment and driver's seat, and prevent undue tilt on the part of the track-frame.

I am aware that reversible rollers comprising a swinging draft-device pivotally supported upon a frame at a point over the roll, are described in Letters Patent of the United States as early as the year 1867, and in numerous subsequent patents, and I am also aware that in view of Letters Patent of the United States No. 69,175, dated September 24, 1867, it is a matter of common right to provide the frame of a roller with a brake arranged to engage the roll. I do not however, employ a pivoted draft device, but a track-frame arranged about the roll, and a draft-attachment or device having a shifting connection with such track-frame, and as a matter of further improvement I provide a novel construction and arrangement of brake.

The roll A herein shown, is solid from end to end, it being understood however, that said roll could be composed of one or more sections secured together in any suitable way.

What I claim as my invention is—

1. A reversible roller comprising a roll arranged within a track-frame, and a draft-attachment having a shifting connection with the track-frame so as to permit the draft to be shifted to either side of the roller, substantially as set forth.

2. A reversible roller comprising in combination, a roll arranged within a track-frame, a draft-attachment having a shifting connection with the track-frame, and a device for temporarily locking the draft-attachment, substantially as described.

3. A reversible roller comprising in combination, a roll arranged within a track-frame, draft-attachment having a shifting connec-

tion with the track-frame and a pole having a jointed connection with said draft-attachment, for the purpose set forth.

4. A reversible roller comprising in combination, a roll arranged within a track-frame, and a draft-attachment having a shifting connection with the track-frame, and a pole and wheeled truck pivotally connected with the draft-attachment, substantially as described.

5. A reversible roller comprising in combination, a roller arranged within a track-frame, a draft-attachment carrying a driver's seat and having a shifting connection with the track-frame and a wheeled truck pivotally connected with the draft-attachment, substantially as described.

6. A reversible roller comprising a roll, arranged within a track frame which extends about the roll and which is provided with a guide flange, and a draft-attachment having a shifting connection with the flanged track-frame, substantially as described.

7. A reversible roller comprising a roll arranged within a flanged track-frame, and the shifting draft-attachment connected with the track-frame and having anti-friction rolls engaging the flange thereof, substantially as described.

8. The combination in a roller, of the hollow roll, and a brake arranged within the hollow roll, substantially as described.

9. The combination in a roller, of a hollow roll, and a brake comprising a rock-shaft extending within the roll and a shoe device eccentrically arranged upon the rock-shaft, substantially as described.

10. In a roller, the hollow roll, and a brake comprising the rock-shaft having a handle

upon one end and extending within the roll, and a shoe device eccentrically arranged upon the rock-shaft, substantially as described.

11. In a roller, the combination of the hollow roll arranged within a frame and having end hubs, rigidly connected journals extending through the hubs of the hollow roll and engaging the frame, and a brake comprising a rock-shaft extending through one of said journals and at a point within the roll carrying a shoe device, substantially as described.

12. A reversible roller comprising the hollow roll arranged within a track-frame a receptacle arranged within the hollow roll and having end journals which engage the track-frame and serve as journals for the hollow roll and a brake adapted to engage the inner side of the hollow roll and comprising an operating rod which passes through one of said journals, substantially as described.

13. A reversible roller comprising the hollow roll arranged within a track-frame, a draft device having a shifting connection with the track-frame, and a brake arranged within the hollow roll, substantially as described.

14. A reversible roller comprising the hollow roll arranged within a flanged track-frame, a draft-device having a shifting connection with the flanged track-frame, and a brake device adapted for engaging the inner side of the hollow roll and arranged to permit the draft-device to be shifted to opposite sides of the roll, substantially as described.

BRITTON POULSON.

Witnesses:

ARTHUR F. DURAND,
RETA M. WAGNER.