

(No Model.)

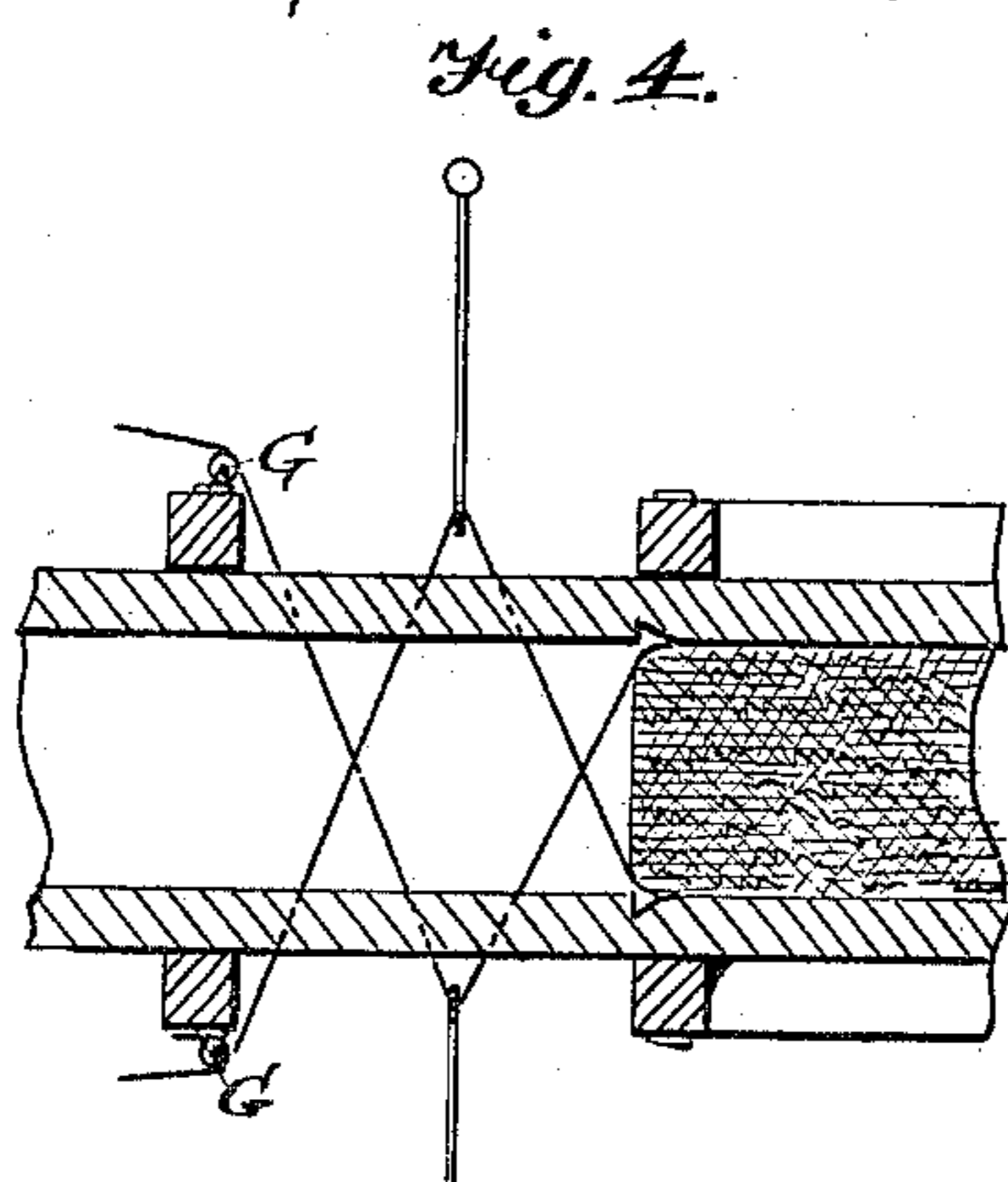
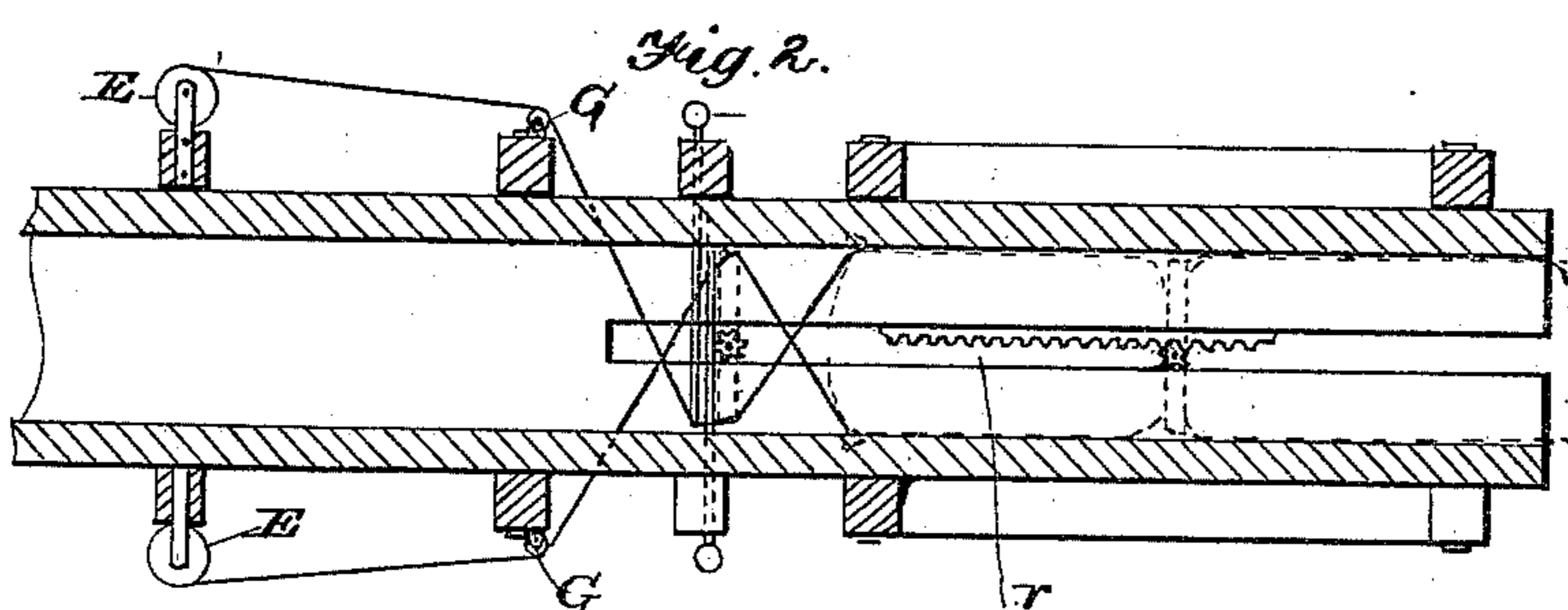
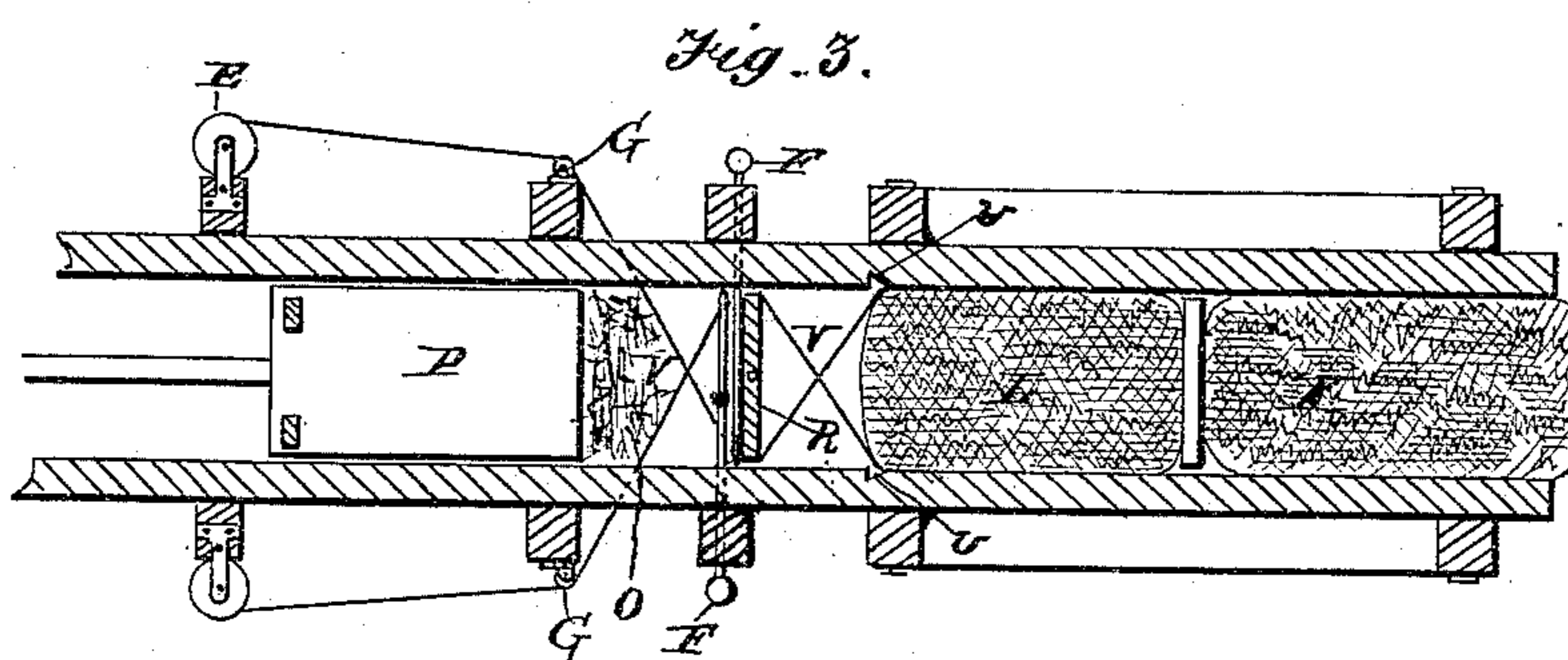
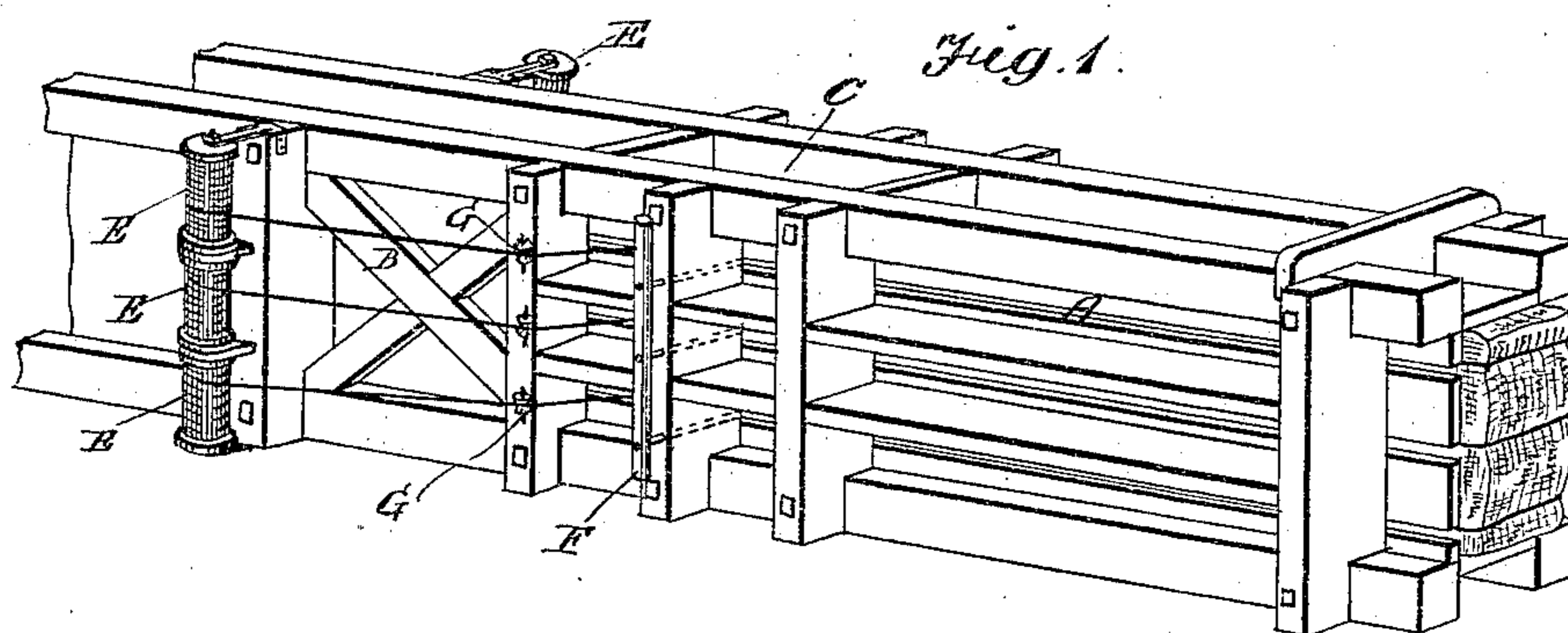
2 Sheets—Sheet 1.

P. K. DEDERICK.

BALING PRESS.

No. 257,152.

Patented May 2, 1882.



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2 Sheets—Sheet 2.

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Fig. 6.

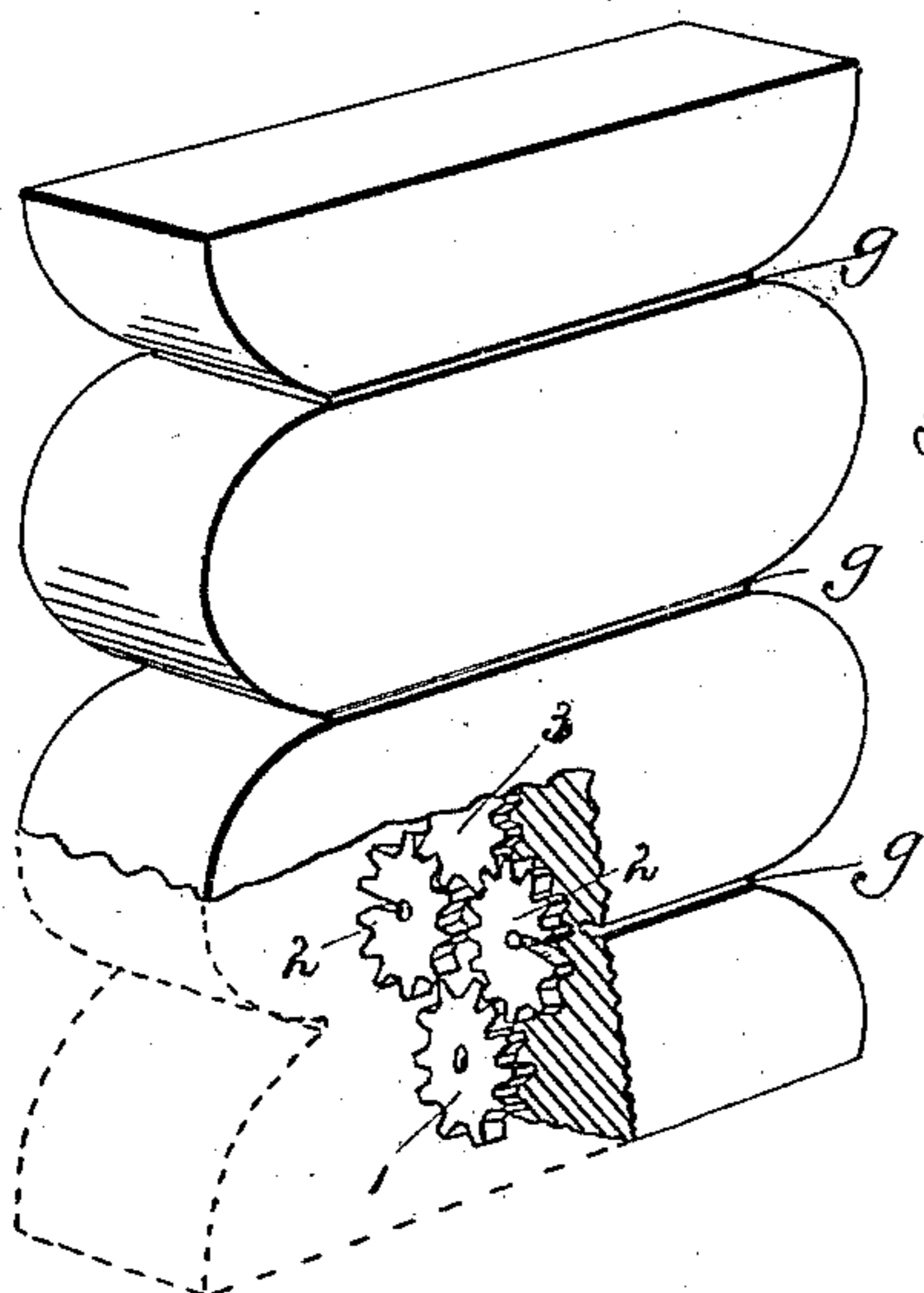


Fig. 5.

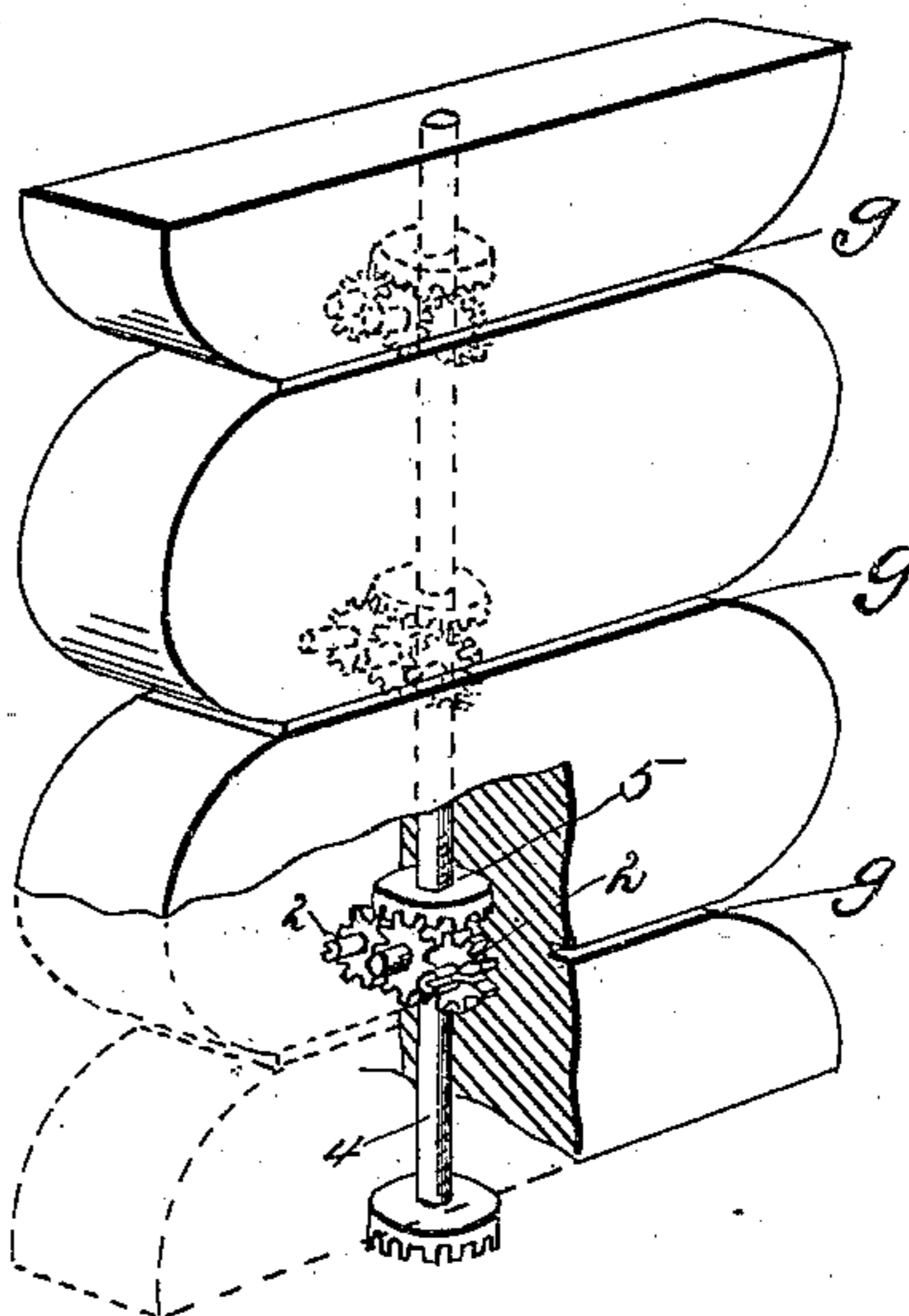


Fig. 15.

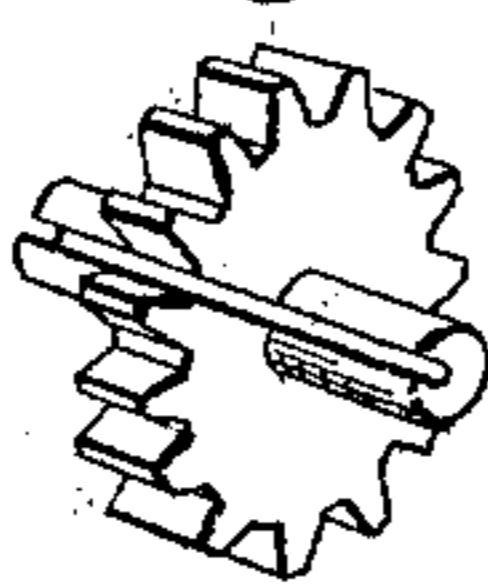


Fig. 7.

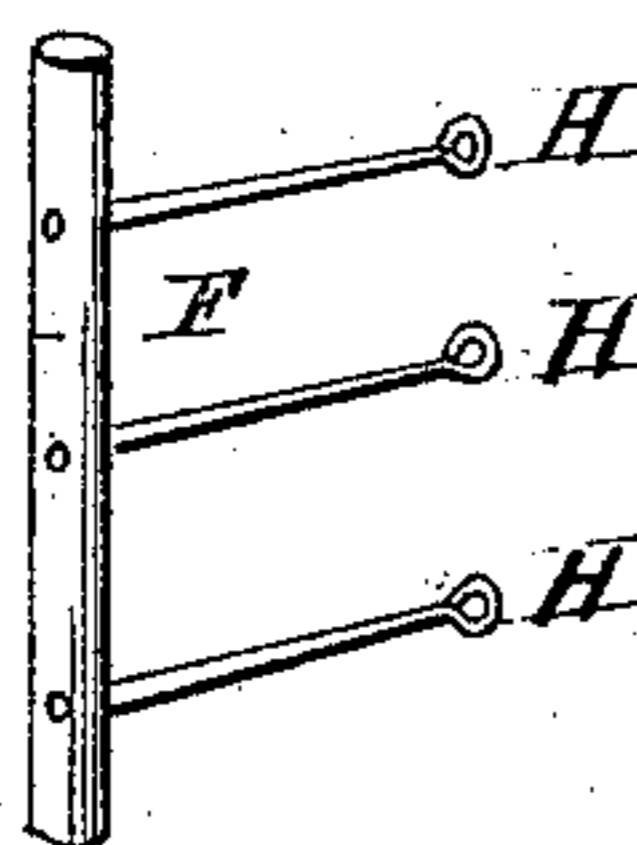


Fig. 8.

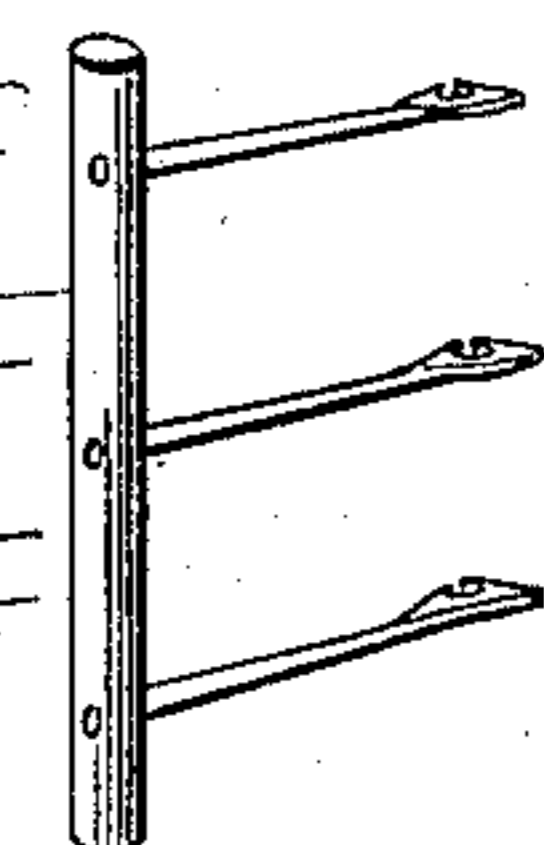


Fig. 9.

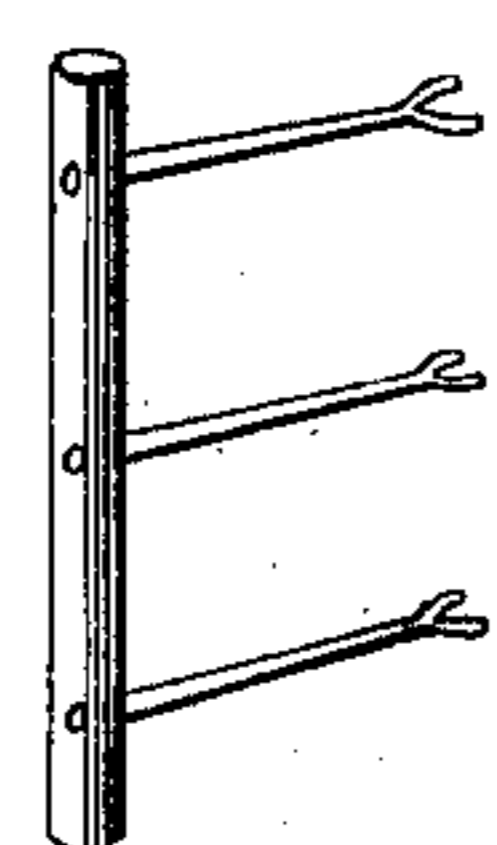


Fig. 10.

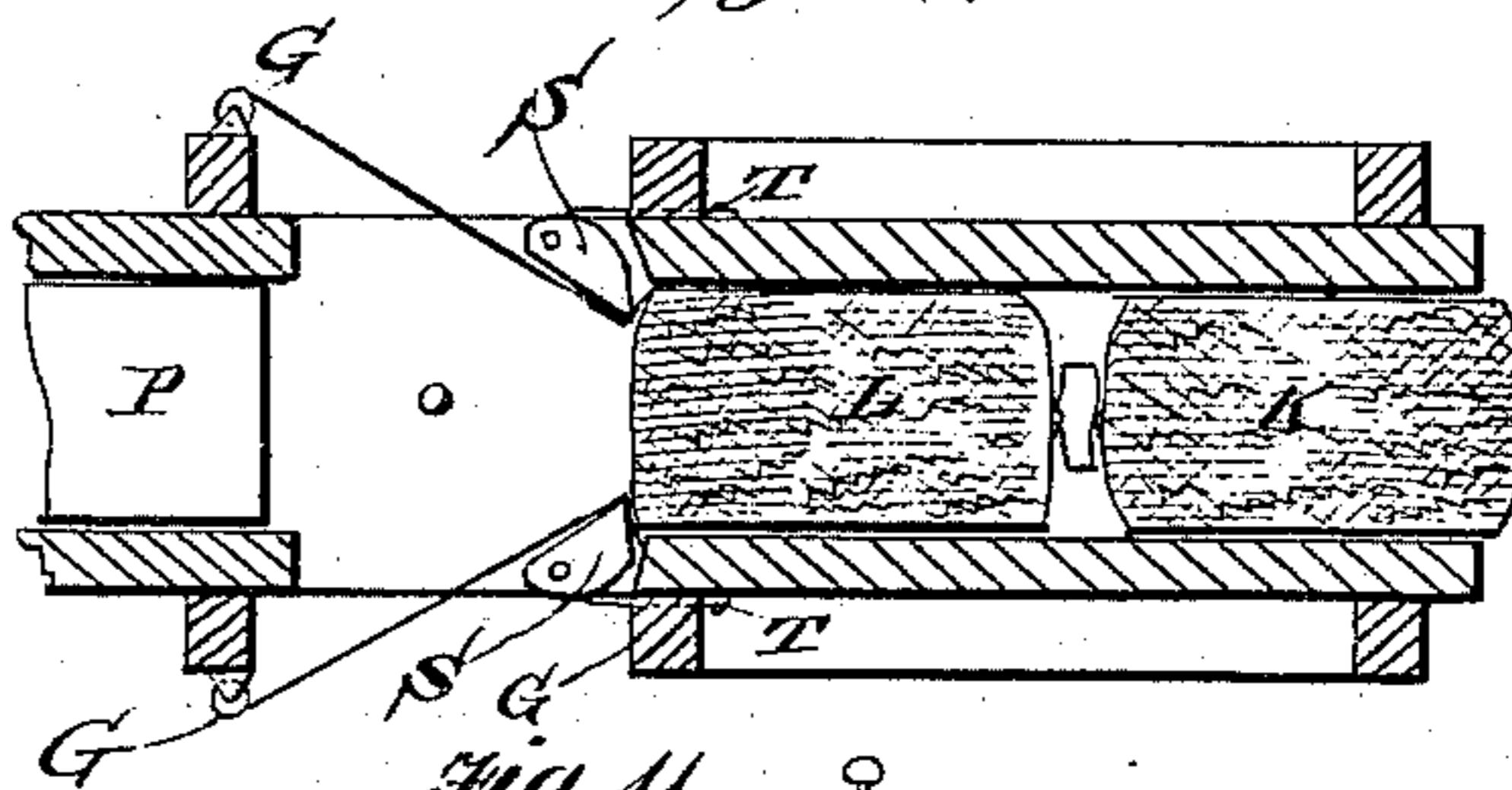


Fig. 14.

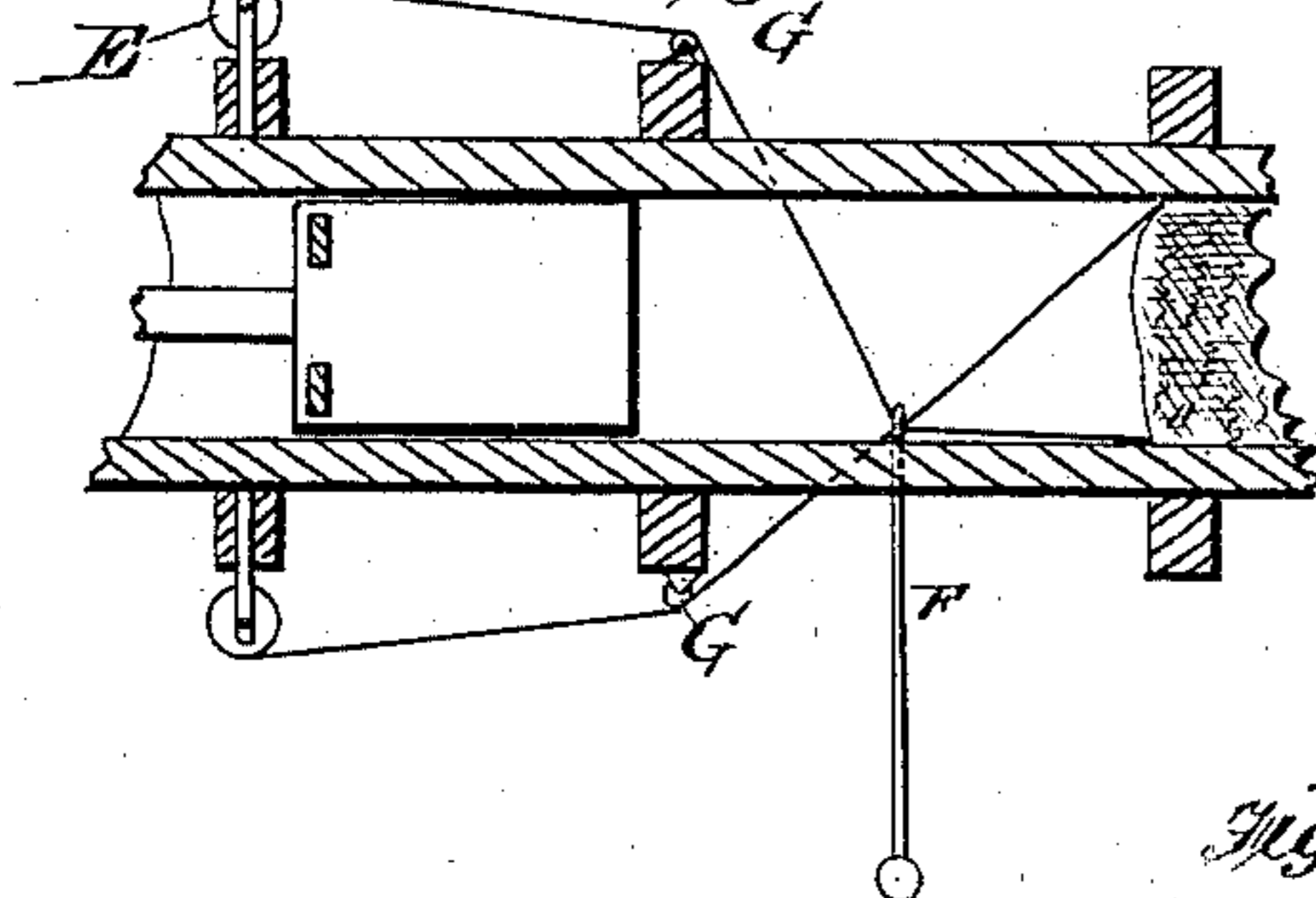


Fig. 11.

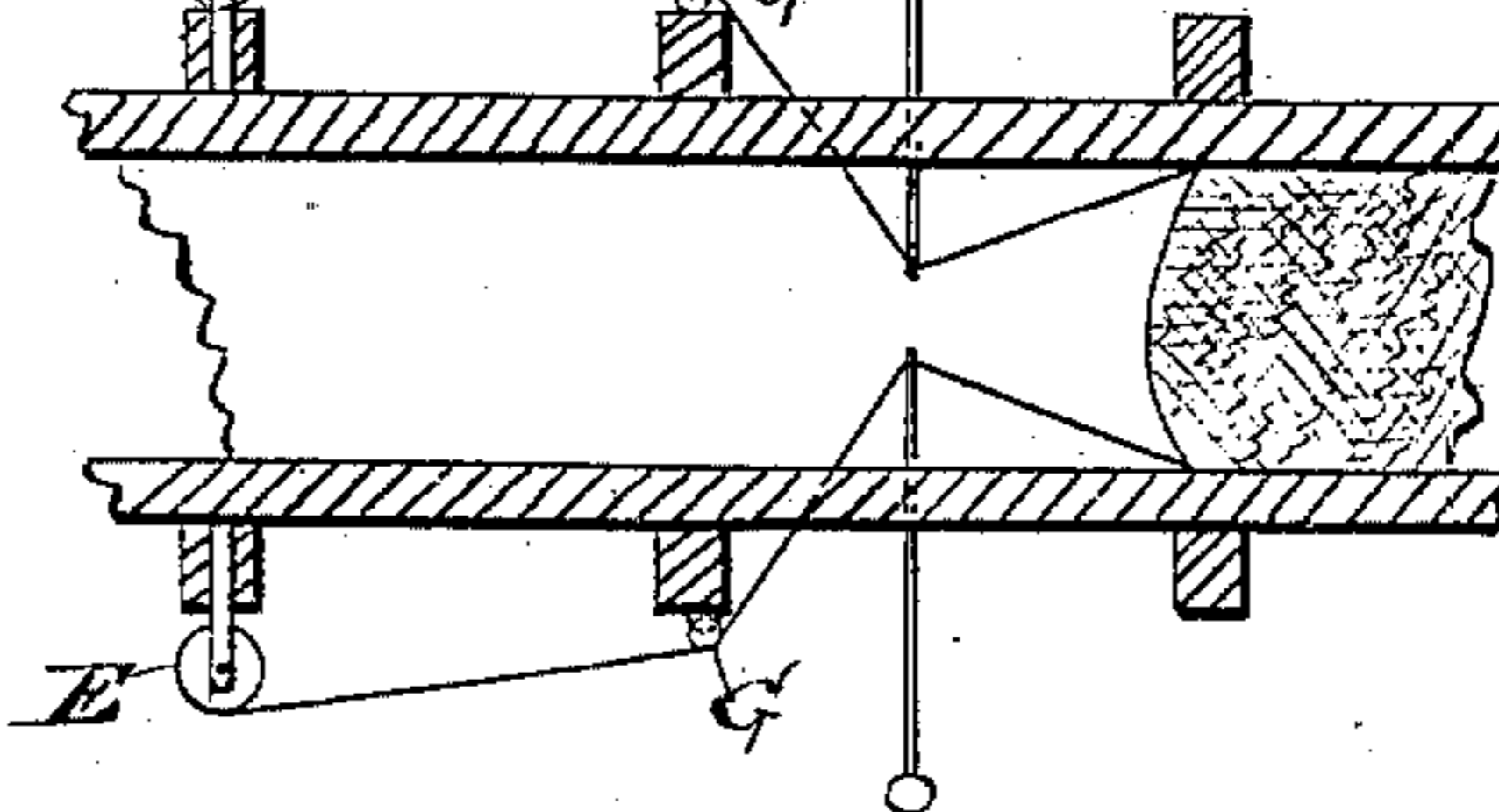
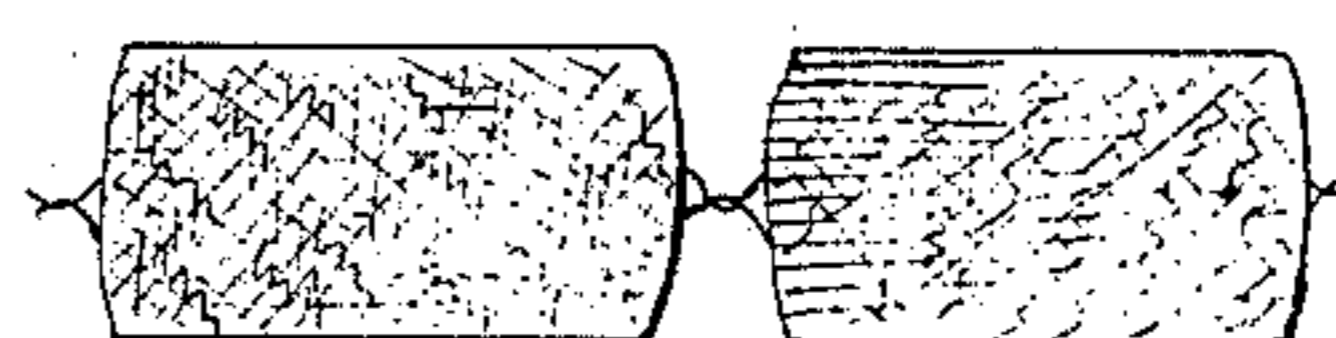


Fig. 12.



Fig. 13.



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UNITED STATES PATENT OFFICE.

PETER K. DEDERICK, OF ALBANY, NEW YORK.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 257,152, dated May 2, 1882.

Application filed October 24, 1881. (No model.)

To all whom it may concern:

Be it known that I, PETER K. DEDERICK, of Albany, in the county of Albany and State of New York, have invented certain new and useful
5 Improvements in Baling-Presses; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—
10 Figure 1 is a perspective view of a portion of a press, showing the application of my improvements. Figs. 2 and 3 are horizontal sectional views taken longitudinally through the press, and showing the position of the band-
15 applying devices at different stages. Figs. 4, 11, and 14 are similar views of the press, showing the manner of manipulating the bands by modified forms of instrument. Figs. 5 and
20 6 represent the partitions that separate the bales. Figs. 7, 8, and 9 represent different forms of instrument for passing the bands through the press. Fig. 10 is a horizontal section of a press in which hinged retainers are employed, and showing a finished and
25 completely-tied bale and a forming bale. Figs. 12 and 13 represent the wire bands secured. Fig. 15 is a view of the wire-twisting wheel detached.

Similar letters of reference in the several
30 figures indicate the same parts.

This invention relates to that class of baling-presses for which Letters Patent of the United States were granted to me October 29, 1872, No. 132,566 and No. 132,639, and for which
35 various other Letters Patent have been since granted me for improvements on the same, particularly No. 212,227, February 11, 1879, and No. 213,280, March 18, 1879.

This invention consists in an improved method of and means for applying and tying the bale-bands automatically, and which I will now proceed to describe.

In the drawings, A represents the bale-chamber of the press; B, the press-box; C,
45 the feed-orifice, and P the traverser.

The frame of the press may be constructed as shown or in any other suitable manner.

E E represent coils or spools of wire, as many in number on each side of the press as
50 there are tie-slots in the bale-chamber or bands to be used on a bale. Each set of spools is

mounted on a vertical shaft at the side of the press, and between the spools of each set are arranged stationary plates or supports, while a nut is provided at the top of the shaft for
55 the purpose of tightening or loosening the spools to produce more or less resistance to the withdrawal of the wire-band material from them.

In Figs. 7, 8, and 9 are represented different forms of the instrument for passing the
60 wires through the press, one from each side, as shown in Figs. 2, 3, 4, and 11. The form of instrument shown in Fig. 7 consists of a head, F, from which project a number of arms
65 or needles, having eyes H at their outer ends or points, the number of needles corresponding to the number of slots in the sides of the press and the number of bands to be applied to the bale. The wire is drawn from the spools
70 and passed through the eyes of the needles of two instruments, one on each side of the press, and the needles are then run through the press from opposite sides, as will be presently explained.
75

Small anti-friction rollers may be inserted in the eyes of the needles, if preferred, to reduce the friction, but a smooth steel eye will be found sufficiently durable.

Instead of forming an eye on the points of
80 the instrument, the points may be bifurcated, as shown in Fig. 9, or hooks may be formed on the sides of the needles, as shown in Fig. 8, so that the wire can be pulled instead of pushed through the press, as illustrated in Fig. 4; but
85 I preferably employ the needle with the eye in its point, as the wires cannot become detached and displaced. Any other form of needle may be used than those shown, if preferred, it being only essential that they be adapted to pass
90 the wire through the press from opposite sides. The wire, after leaving the spools, may be made to run over anti-friction rollers G, arranged on the sides of the press, and thence through the eyes of the needles, or they may be passed
95 through simple holes or guide eyes in the press sides.

In Fig. 3, L represents a bale just completed, but not fully tied off. K represents a bale that has been previously completed and tied
100 off, while O represents a section of loose material about to be pressed forward by the trav-

5 erser P to make up a new and third bale. When
 the bale L is completed, and before the traverser
 makes its next forward movement, the needles
 F F are passed into the press, as shown in Fig.
 10 2, from opposite sides, so as to cross the wires,
 and the partition R for separating the bales is
 then passed into the loop formed by the cross-
 ing of the wire, as shown in Fig. 3, after which
 the needles are withdrawn, leaving the parti-
 15 tion within the loop and a new portion of the
 wires in the eyes of the needles. The needles
 may work in guide-holes or in longitudinal
 slots in the press, and may move in at right
 angles to the press or with a sweep in a curve.
 20 They also may be pushed in by hand, or they
 may be connected with the power mechanism
 of the press in such a manner as to be operated
 by the same automatically. The friction on
 the wire-spools E is sufficient to draw the wire
 25 tight around the partition R when the needles
 are withdrawn. During this last-named oper-
 ation the needles slip along the wire, and after
 it is accomplished the traverser forces the par-
 tition into the bale chamber, where it is re-
 30 tained by the retainers S, which are normally
 held projected into the press by springs T be-
 hind them, as shown in Fig. 10, or by station-
 ary retaining-shoulders, as shown in Figs. 2
 and 3 at U. Where the stationary retaining-
 35 shoulders are employed, however, the partition
 is not held directly by them, but the section of
 material behind the partition, which is carried
 forward with the latter, expands into the space
 in front of the stationary shoulders, and this
 40 holds the said section from backward move-
 ment, and the partition in front of it also.

Rollers may be employed at the forward
 corners of the traverser to reduce the friction
 of the wires on the traverser; but I ordinarily
 45 deem this unnecessary.

The partition may be of a size to fill the
 cross-section of the chamber or may extend
 only partly across the width of the chamber,
 as desired; but in the latter case a little less
 50 wire will be consumed. When the partition
 is forced into the bale-chamber behind the re-
 tainers the wires crossed on each side of it, as
 shown at V V, are drawn tight and enter the
 grooves g in the partition, as shown in Figs.
 55 5 and 6. It therefore only becomes necessary
 to twist the wires at or near their points of
 crossing to effect the secure and permanent
 binding of the bales. This may be done in
 the following manner:

60 The partition may be formed with simple
 grooves on its sides, while its ends, beside be-
 ing simply grooved, are beveled or forked, as
 shown in Figs. 5 and 6, to enable the wires to
 be conducted into the grooves at all times

65 At every groove on each side of the follower
 there is arranged a slotted wheel, provided
 with bearings, which are also slotted, as shown
 in Fig. 15, and the slots of the wheels are so
 arranged with respect to the groove g in the
 partition that the wire, when drawn into the

70 latter, also passes into the said wheel-slots at
 or near the point of crossing of said wires, and
 all that is required is to revolve the slotted
 wheels and the wires will be firmly twisted to-
 75 gether. This operation may be effected by
 gearing the wheels all together, as shown in
 Fig. 6, 1 being a gear which works into a rack,
 r, in the bottom of the bale-chamber; 2 2, the
 slotted wheels or twisters, and 3 an interme-
 80 diate gear; or it may be effected by the em-
 ployment of an upright shaft having bevel-
 gears to drive the twisters, as shown in Fig. 5,
 4 being the shaft, 2 and 2 the slotted gears
 or twisters, and 5 the bevel-wheel which drives
 an intermediate gear, as shown. The twist in
 the wire formed by these devices will be such
 as shown in Fig. 12.

The wires may be secured together in vari-
 85 ous ways and by a variety of devices, many of
 which I shall set forth in future applications
 for patents. They may be drawn through by
 the hooks represented in Fig. 8, as illustrated
 in Fig. 4, in which case no partition. but the
 90 wires is used, and the next bale is commenced
 against them, after which the wires for each
 bale may be secured in any suitable manner,
 either by twisting together or otherwise. The
 bales are cut apart as they are ejected from
 the press.

In Fig. 11 the bights of the wires are brought
 from each side to the middle without cross-
 ing, so that they can be twisted together, as
 shown in Fig. 13, by devices adapted for the
 purpose.

Fig. 14 illustrates a mode of making a simi-
 lar form of fastening; but in this case the wire
 is brought from one side only, and is secured
 to a wire running along the other side of the
 press.

105 The partitions themselves may be employed
 to pass the bight of the wire either from one
 or both sides of the press, suitable openings
 being provided in the latter for their passage.
 In this way the needles may be dispensed with.
 110 Where the partitions thus perform the func-
 tion of passing the wires, and they are them-
 selves automatically operated by the power
 mechanism of the press, as hereinbefore indi-
 cated, a complete automatic band applying
 and tying device will result.

Having thus described my invention, what
 I claim as new is—

1. The herein-described method of binding
 bales in a continuous baling-press, consisting
 120 in forming the bale within a bight of wire ex-
 tending from in front of the bale along its
 sides, and then bringing the two wires together
 in rear of the bale and twisting them by auto-
 matic twisting devices, substantially as de-
 125 scribed, the whole operation being performed
 while the bale is on its way through the press,
 substantially as described.

2. In a continuous baling-press, the combi-
 nation, with wires adapted to extend along the
 130 sides and front of the bale in the bale-chamber,
 of wire-carriers for bringing the wires together

at the rear of the bale and automatic twisting-gearing for securing said wires together, substantially as described.

3. In a continuous baling-press, the combination, with wires adapted to extend along the front and sides of the bale in the bale-chamber and fed from reels or spools on opposite sides of the press, of the wire-carriers for crossing the wires behind the bale and the follower, provided with twisting-gearing for twisting the crossed wires, substantially as described.

4. In a continuous baling-press, the combi-

nation, with wires adapted to extend along the front and sides of the bales in the bale-chamber, of the needles for crossing the wires behind the bale, the followers provided with the slotted wheels or twisters, the intermediate connecting-gearing, and the rack in the bale-chamber, the whole constructed and arranged substantially as described.

PETER K. DEDERICK.

Witnesses:

R. J. VAN SCHOONHOVEN,
WILL A. ALEXANDER.