

(Model.)

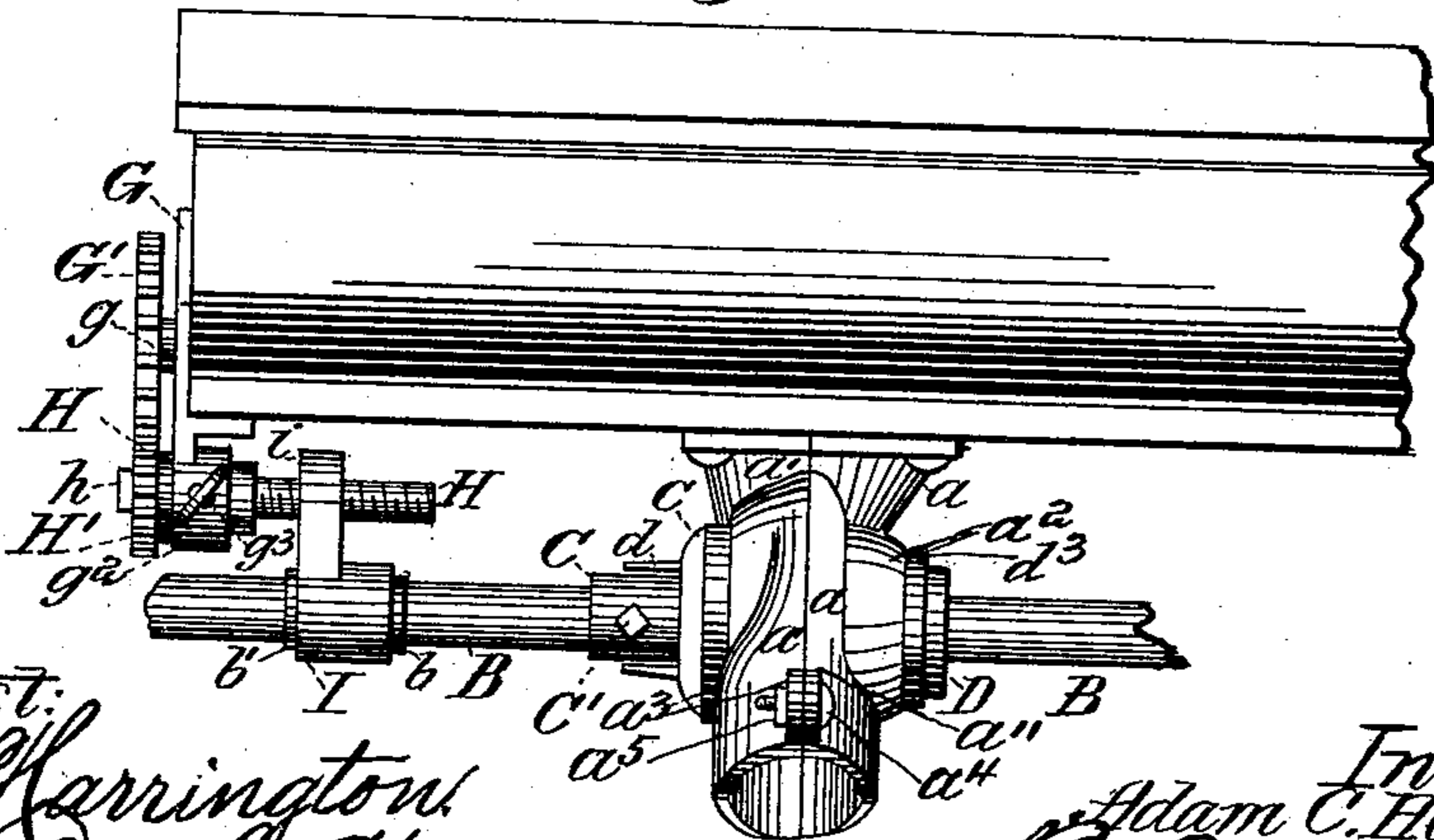
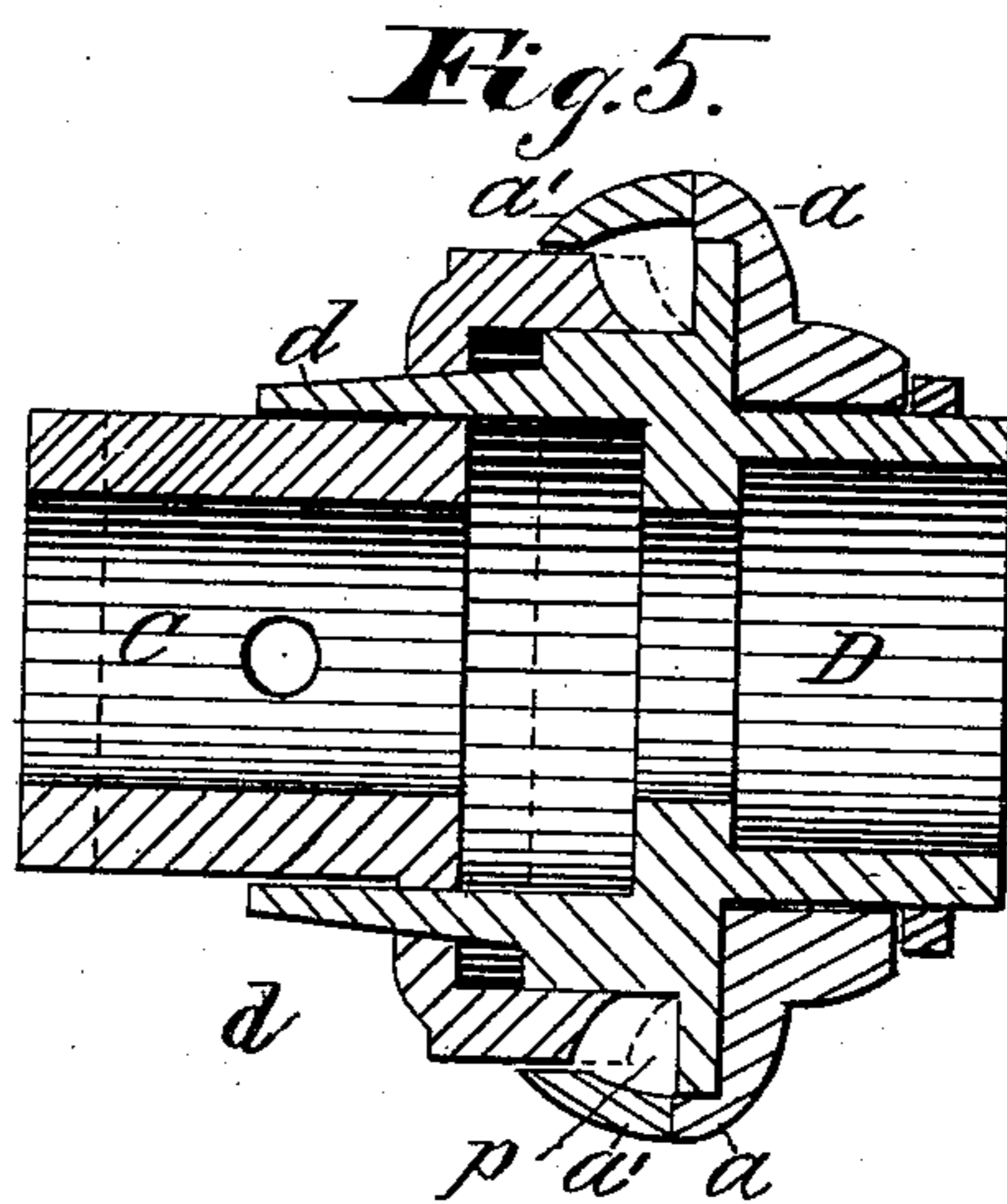
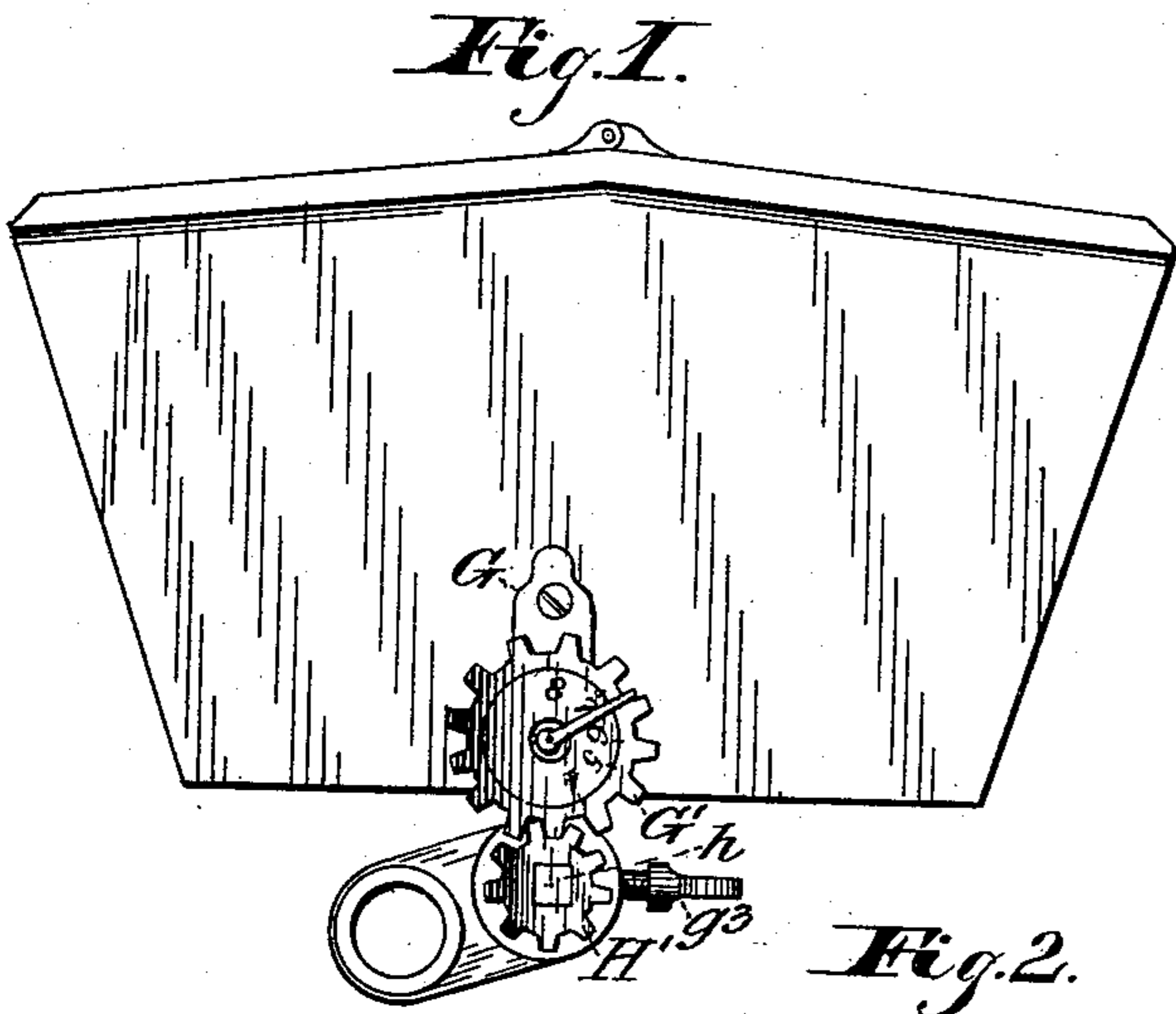
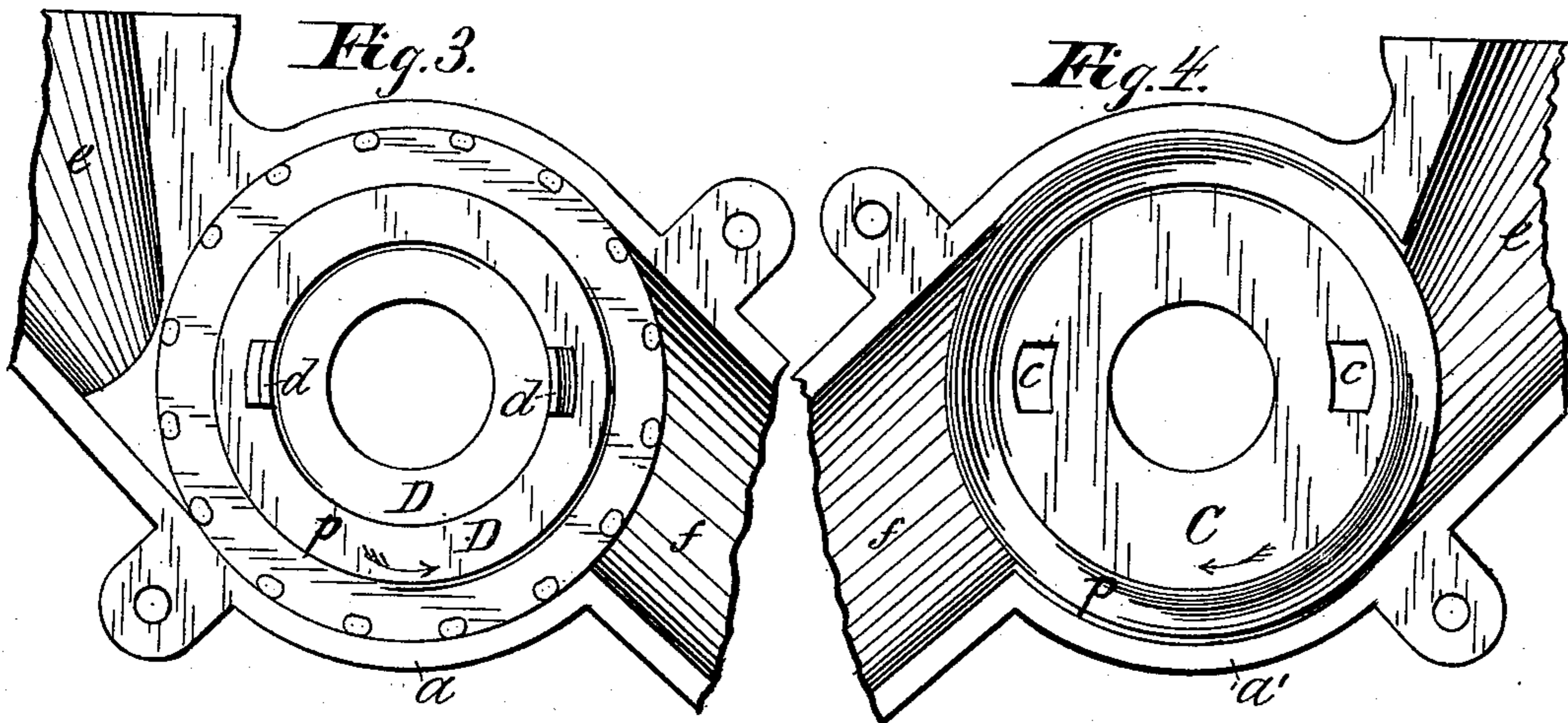
A. C. HENDRICKS.

2 Sheets—Sheet 1.

GRAIN DRILL.

No. 324,110.

Patented Aug. 11, 1885.



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(Model.)

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2 Sheets—Sheet 2.

GRAIN DRILL.

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Fig. 6.

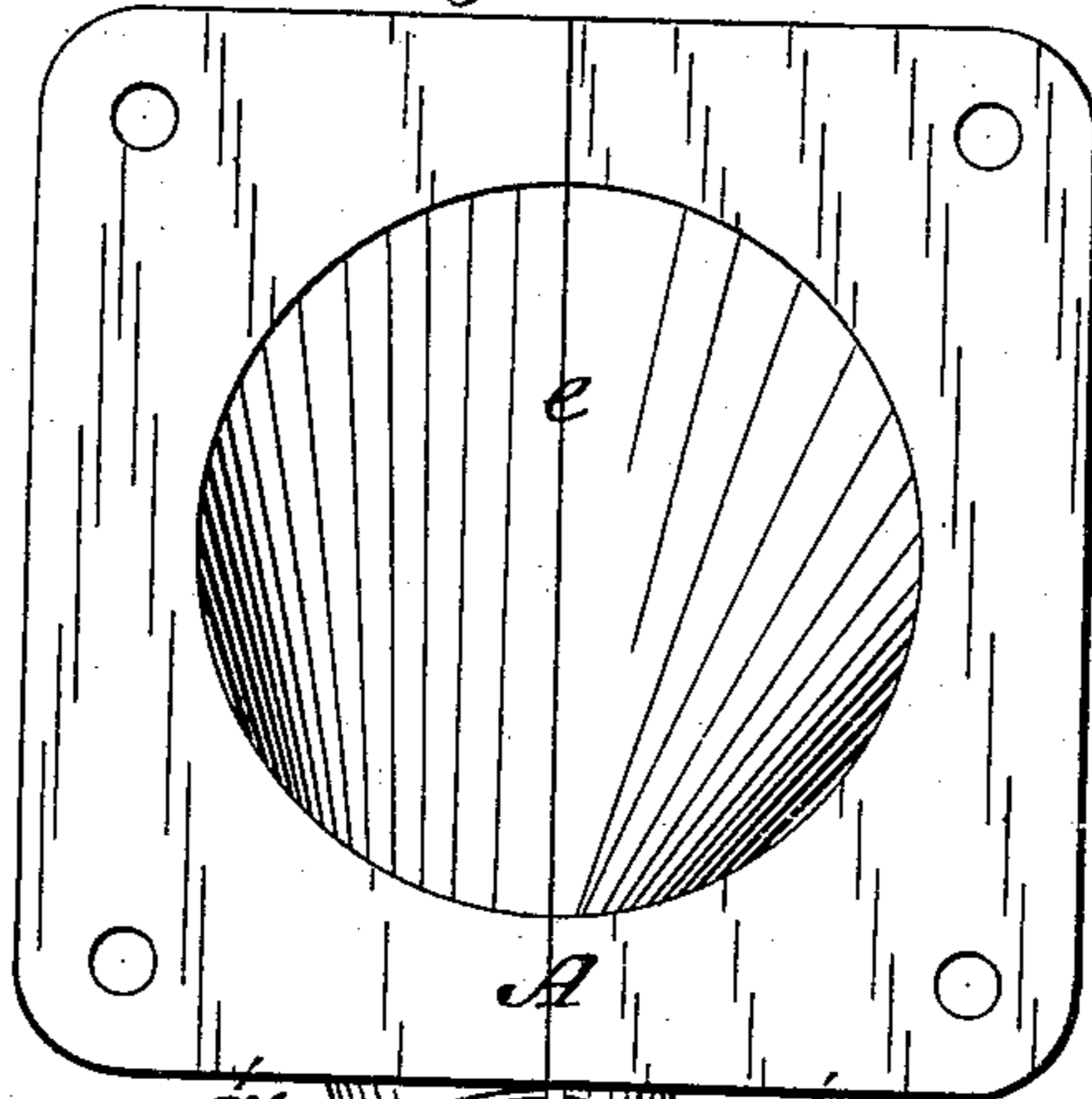


Fig. 7.

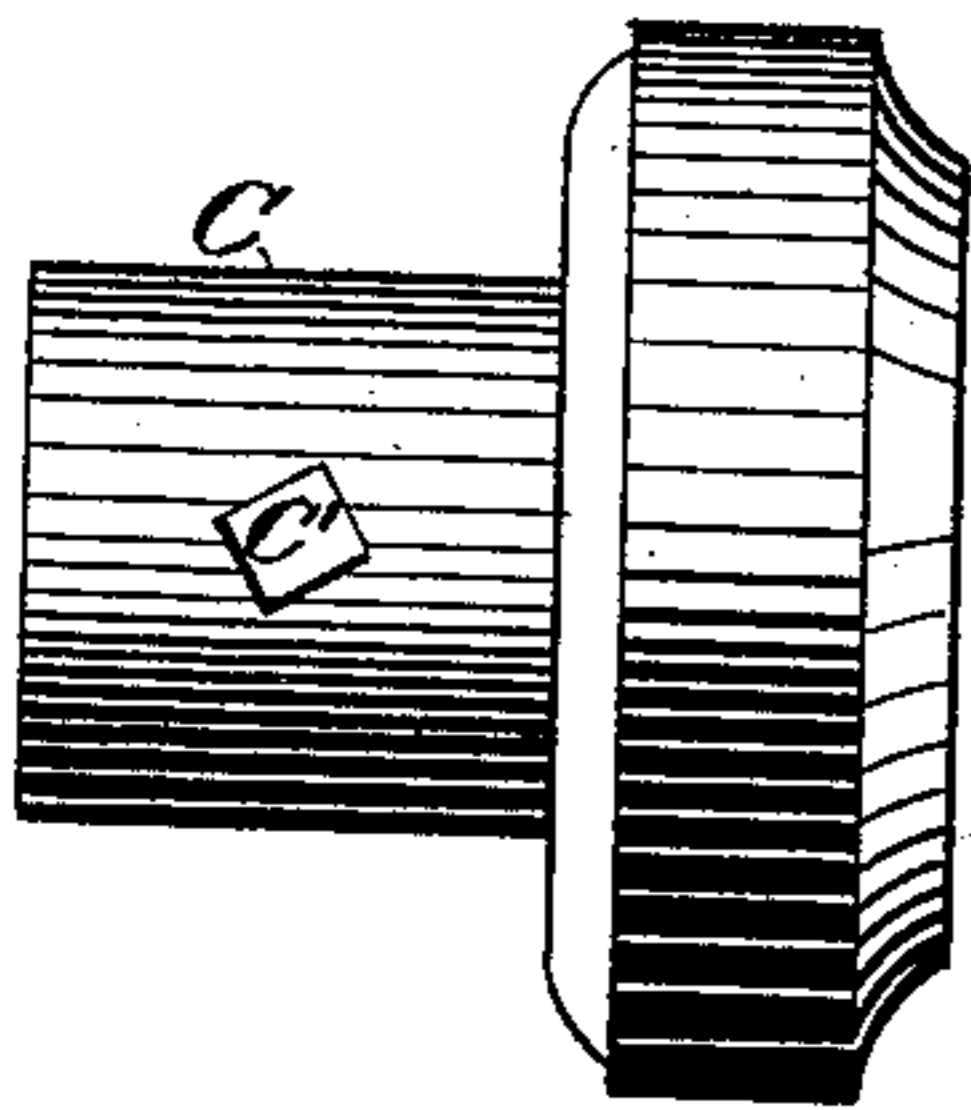
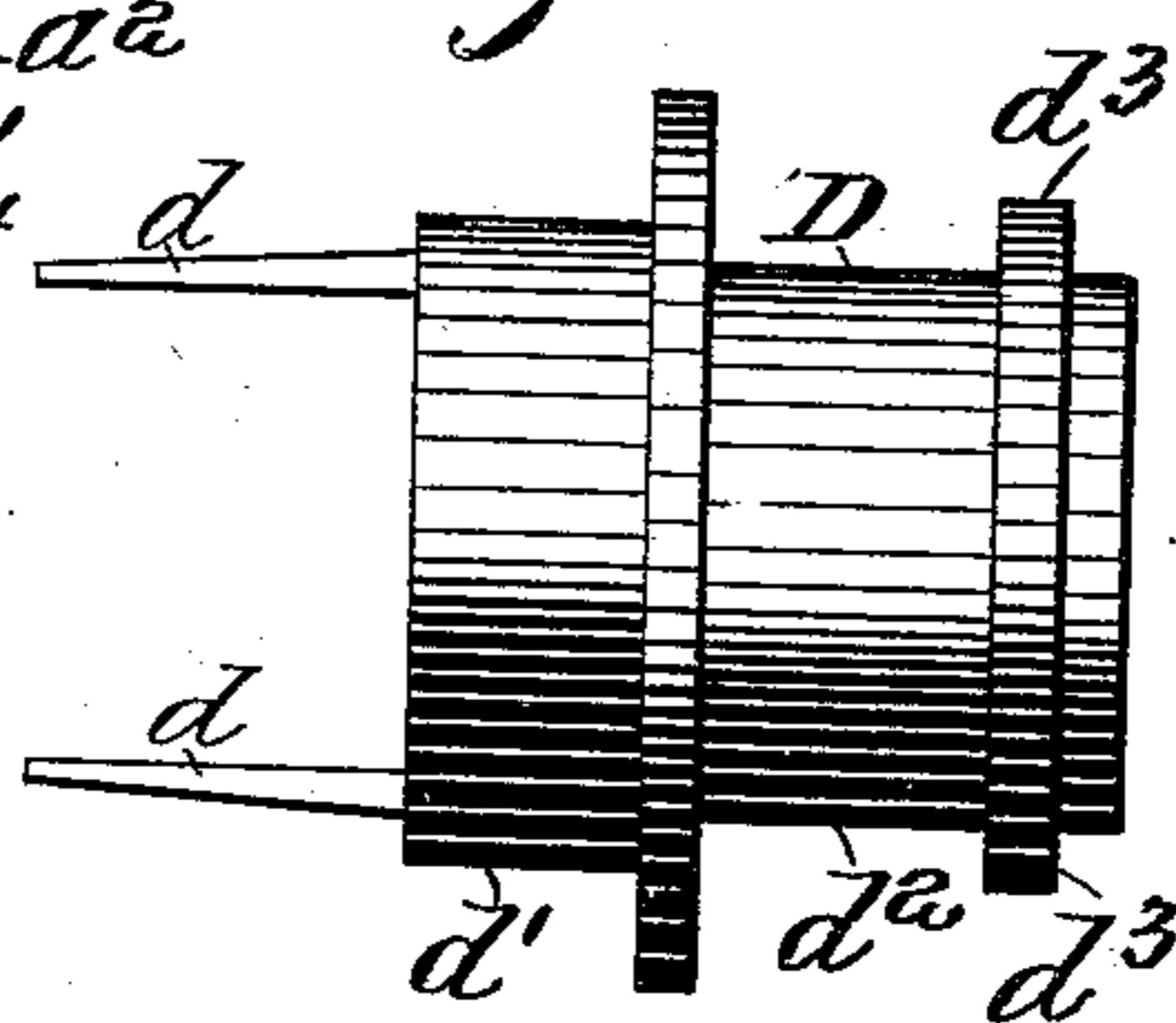


Fig. 8.



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UNITED STATES PATENT OFFICE.

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SIGNOR OF ONE-HALF TO HENRY ST. JOHN SHEPHERD, OF SAME PLACE.

GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 324,110, dated August 11, 1885.

Application filed March 14, 1885. (Model.)

To all whom it may concern:

Be it known that I, ADAM C. HENDRICKS, a citizen of the United States, and a resident of Shenandoah Junction, in the county of Jefferson and State of West Virginia, have invented certain new and useful Improvements in Grain-Drills, of which the following is a description.

The invention relates, particularly, to the mechanism which is employed, in connection with the seed-hopper, for regulating the flow of grain from the hopper to the drill-boot and for indicating the rate of such flow; and it consists in certain novel features or elements in the construction of such mechanism and in certain novel combinations of such features or elements, as will be hereinafter described and claimed.

In the drawings, Figure 1 is an end elevation of the seed-hopper of a grain-drill to which my improved mechanism is applied. Fig. 2 is an elevation of a portion of a seed-hopper, which has my improved seed-discharge mechanism applied thereto. Fig. 3 is an elevation showing the interior face of one of the two main exterior sections of the discharge-spouts. Fig. 4 is an elevation showing the interior face of the other of the two main exterior sections of the discharge spouts. Fig. 5 is a vertical longitudinal central section of the discharge-spout at right angles to the line xx of Fig. 6, the bearing-shaft being removed. Fig. 6 is a plan view of one of the discharge-spouts detached from the hopper and from the revoluble supporting-shaft. Fig. 7 is a side elevation of the ring-cap, and Fig. 8 is a side elevation of the shouldered ring.

To the lower face of the seed-hopper A are securely attached a series of discharge-spouts, A', corresponding in number to the orifices in the bottom of the hopper. The discharge-spouts A' are each composed of two distinct outer sections or shells, a and a' , an irregular ring or cylinder, D, and a recessed ring-cap, C, the ring and the ring-cap being received within circular openings in the sections or shells a and a' , and the spouts, as thus constructed, encircling the revoluble actuating shaft B, the shells being secured together by their perforated lugs a'' a''' , bolts a^4 , and nuts

a^5 . The recessed ring-cap C is of such diameter as to adapt it to fit within the opening in the shell a' , and to embrace the inner shouldered portion, d' , at the base of the flange d of the ring D in such a manner as to leave between the ring on the one side and the ring-cap and its shell upon the other side a passage, p , through the lower portion of which the seed is carried from the inlet portion to the outlet portion of the spout. In assembling the parts the ring D is placed within the opening in the shell a from the larger side thereof, and it is then retained in its position by the securing ring or collar d^3 , which is fitted closely upon the cylindrical portion d^2 , and against the end of the tapering extension a^2 of the shell a . The ring D is provided with arms or prongs d d , which project from it in a direction parallel with the revoluble actuating shaft B, and are received within corresponding perforations, c c , formed in the adjustable ring-cap C. The ring-cap or slidable valve C is provided with a set-screw, C', by which it is adjusted upon the shaft B; and it will be perceived that the ring and the ring-cap thus locked together and to the revoluble shaft, will all rotate together within the two fixed shells a and a' .

In operation the seed received through the upper passage, e , of the spout is ejected through the discharge-opening f , passing immediately through the curved channel between the shells, through which it is moved by the revolution of the shaft, the ring-cap, and the ring, as already explained; and it will be observed that through the adjustability of the ring-cap upon the shaft the passage p may be enlarged or diminished at will.

To one end of the hopper is secured a plate, G, which is provided upon its outer face with a short journal, g , to receive a cogged index-plate, G', and with a lower annular unthreaded extension, g^2 , which receives an adjusting-screw, H, which terminates exteriorly in a squared end, h , upon which is fitted a gear-wheel, H', which engages with the index-plate G', the inner end of the screw engaging with a threaded arm, i , of a ring, I, which is loosely sleeved upon the shaft B, and secured against longitudinal displacement thereon by a should-

der, *b*, and an adjustable ring-collar, *b'*, or by other suitable means—such as a sliding ring and a set-screw upon either face of the ring I. The annular extension *g*² is perforated and threaded to receive a set-screw, *g*³, by which movement of the enlarged portion *h'* of the adjusting-screw H within the extension *g*² is prevented.

The ring-cap or regulating-valve C, being suitably adjusted at the outset for the discharge of any desired quantity of seed per acre, and the index-plate G' being fitted by its pointer G² to correspond, it is thereafter necessary only to change the adjustment of the gear-wheel H' actuating the screw H in order to alter the rate of discharge through all the spouts of the series, and at the same time and by the same movement to change the position of the pointer upon the index-plate so as to indicate the change in the rate of discharge. The adjustment of the screw H, actuating the ring I, the shaft, and its series of ring-caps or valves, may be effected by manipulation of the index-plate, or by means of a winch applied to the squared end *h* of the screw H.

It will be understood that the shaft B is made revoluble, as the vehicle advances, by any suitable gearing which connects it with the axle-tree of the machine.

I am aware that mechanism has before been provided in connection with a grain-drill in which a series of disks are secured upon a longitudinally-movable feed-shaft, so as to be adjustable toward or from a corresponding series of spouts or cases, which are secured to the bottom of the feed-hopper; and I am also aware that it is not new to provide, in connection with the discharge mechanism of the character described, means for indicating the rate at which the grain is being discharged, and for varying such rate by adjusting the feed-shaft, as before stated. I do not therefore broadly claim either regulating-valves upon a feed-shaft and operating in connection with discharge-spouts, or mechanism for imparting motion to a feed-shaft and its valves, or for indicating the rate of discharge.

Having described my invention, I claim as new—

1. The combination, in a grain-drill, of a seed-hopper, a discharge-spout which is provided with a circular perforation attached to the bottom of the seed-hopper, a ring which is provided with arms or prongs within the circular perforation, and an adjustable ring-cap or regulating-valve which is provided with perforations which correspond to and are engaged by the arms or prongs upon the ring.

2. The combination, in a grain-drill, of a revoluble shaft, and a discharge-spout which is composed of two vertically-arranged sections which are placed face to face, as described, one of the sections having combined with it a central horizontal ring or cylinder which is provided with projecting arms which extend through the opposite side of the discharge-spout, and the other section having within its central horizontal opening a regulating-valve which is provided with perforations which are engaged by the arms upon the horizontal ring, substantially as set forth.

3. The combination, in a grain-drill, of a revoluble shaft, a discharge-spout which is composed of two vertically-arranged centrally-perforated sections which encircle the revoluble shaft and are placed face to face, as described, one of these sections having combined with it a central horizontal ring or cylinder which is provided with arms which extend through the opening in the other section and project beyond the same, and the other section having within its central horizontal opening a regulating-valve which is provided with perforations which are engaged by the arms upon the horizontal ring, and mechanism, as set forth, for indicating the rate at which the contents of the feed-hopper are being discharged.

ADAM C. HENDRICKS.

Witnesses:

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