

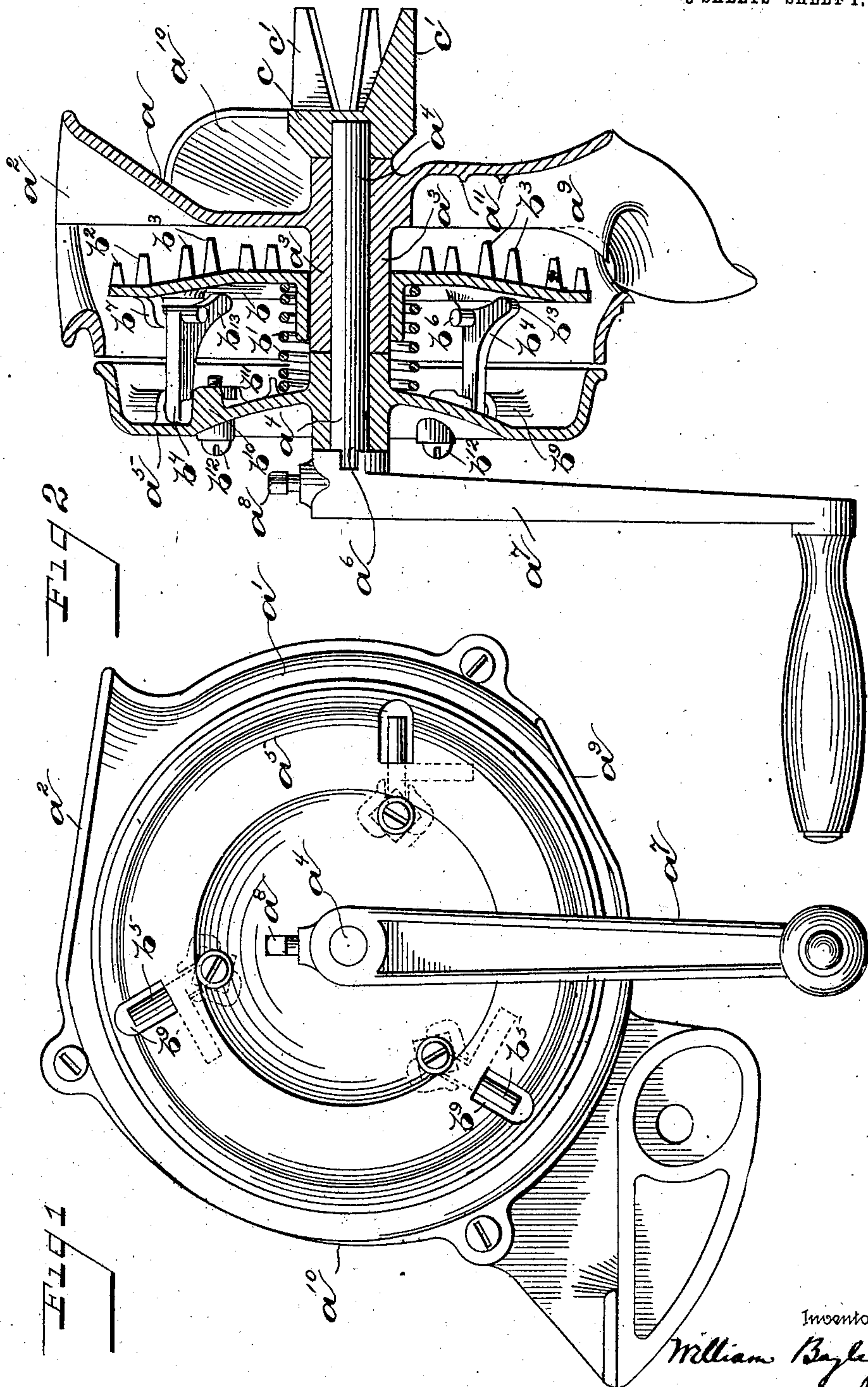
No. 840,466.

PATENTED JAN. 8, 1907.

W. BAYLEY.
CORN SHELLER.

APPLICATION FILED JAN, 31, 1906.

3 SHEETS—SHEET 1.



Witnesses
J. D. Dwellman Walker
Chas. D. Mitch

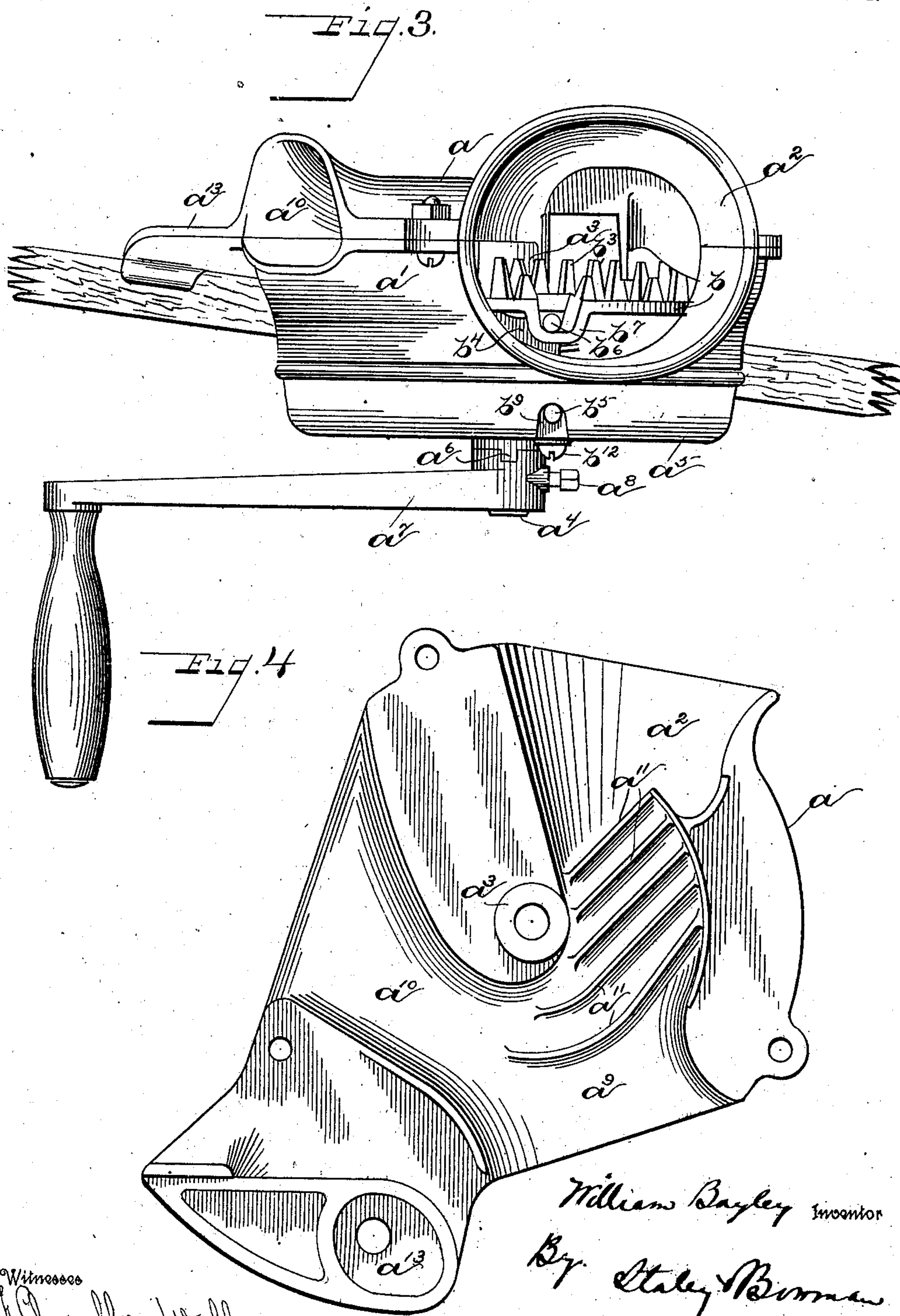
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William Bayley
By
Haley Boman
His Attorney

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Witnesses
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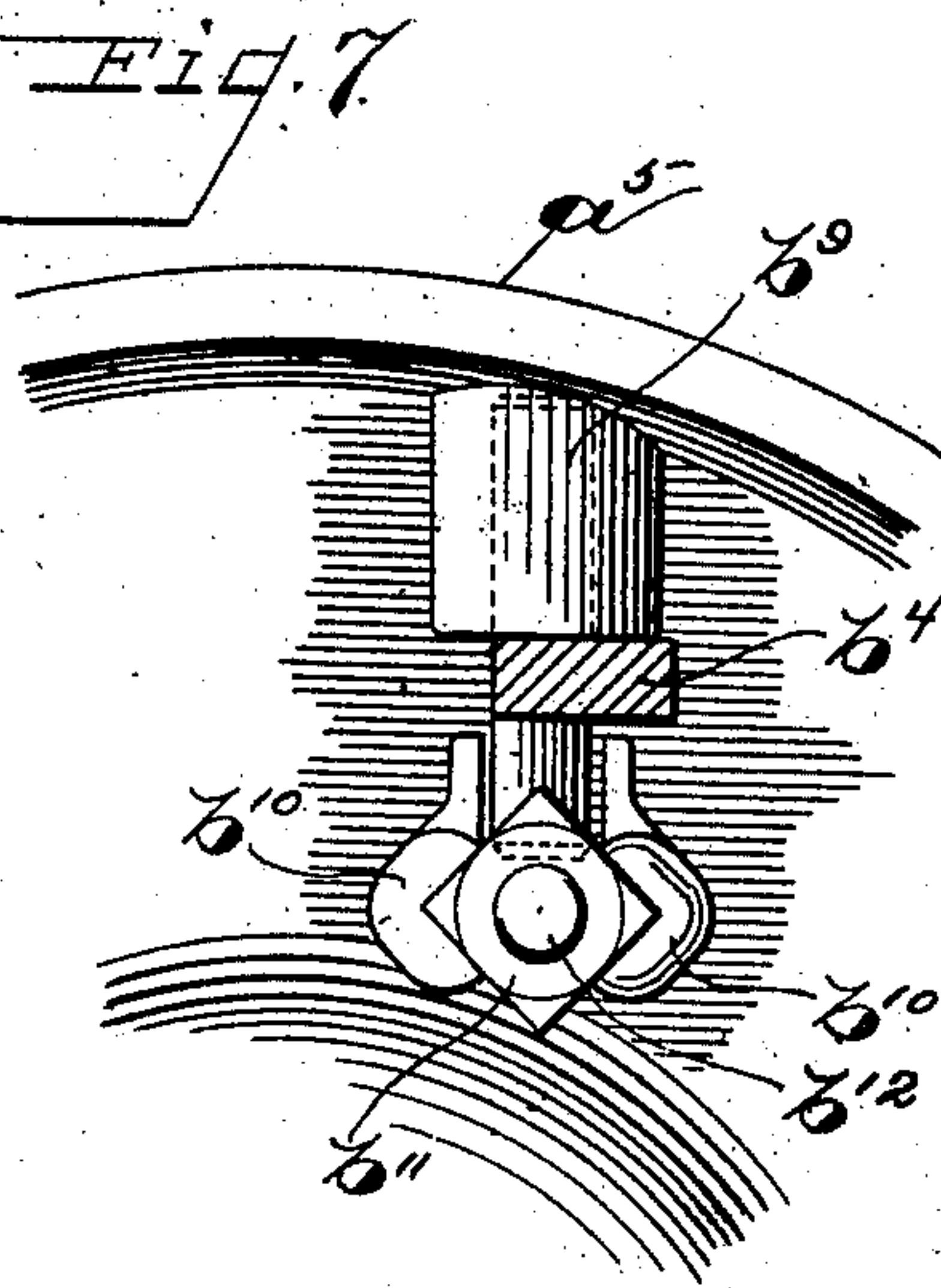
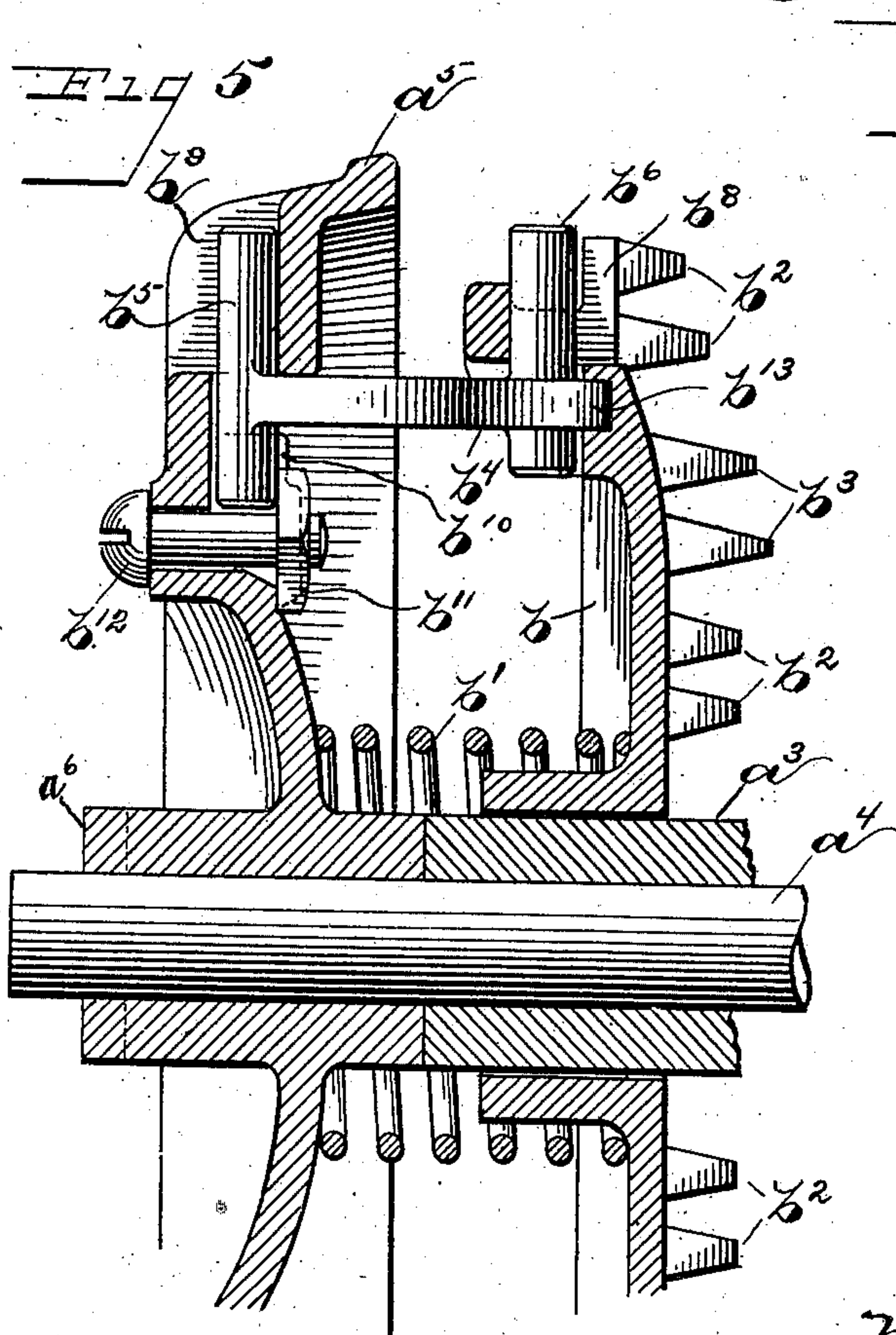
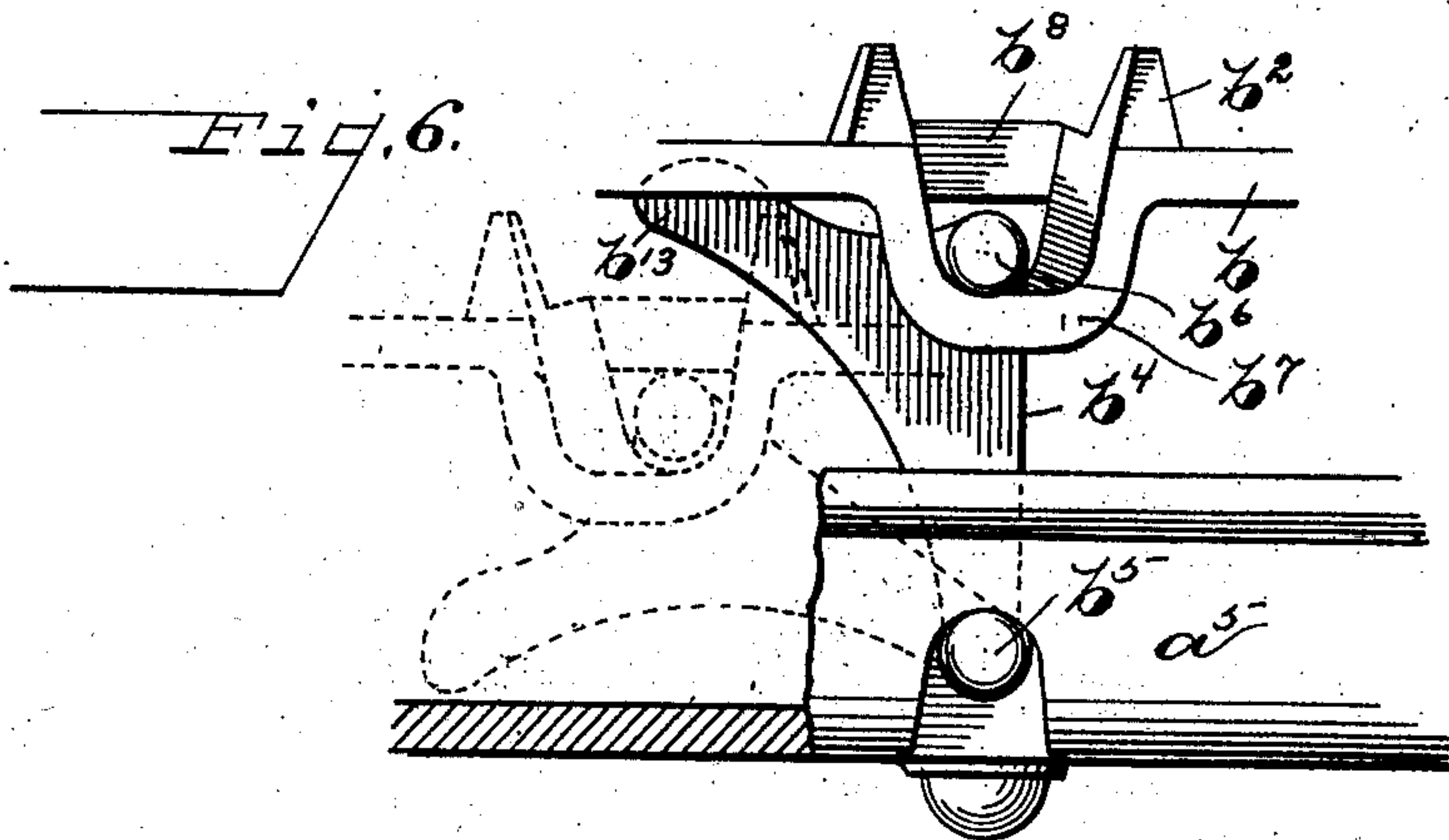
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3 SHEETS—SHEET 3.



Witnesses
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William Bayley Inventor

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His Attorney

UNITED STATES PATENT OFFICE.

WILLIAM BAYLEY, OF SPRINGFIELD, OHIO.

CORN-SHELLER.

No. 840,466.

Specification of Letters Patent.

Patented Jan. 8, 1907

Application filed January 31, 1906. Serial No. 298,876.

To all whom it may concern:

Be it known that I, WILLIAM BAYLEY, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Corn-Shellers, of which the following is a specification.

My invention relates to corn-shellers, such as are employed for domestic use, and more particularly to hand-operated devices as distinguished from power-driven machines.

The object of the invention is to provide a simple, light, and inexpensive machine for shelling corn and automatically separating the cobs from the shelled corn.

A further object is to provide a construction employing a minimum number of parts so shaped as to be readily cast and which may be assembled without the necessity of machine-work, thereby greatly facilitating the manufacture.

A further object is to provide a device which will readily and automatically accommodate itself to varying sizes of ears of corn. With the above primary and other incidental objects in view the invention consists of the means, mechanism, construction, and mode of operation, or their equivalents, hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a front elevation of the assembled machine. Fig. 2 is a vertical sectional view. Fig. 3 is a plan view of the device, showing its relation to the side of the box or receptacle to which it may be attached. Fig. 4 is an interior view of the shell or frame. Figs. 5, 6, and 7 are details of the driving connection for the toothed shelling-wheel.

Like parts are indicated by similar characters of reference throughout the several views.

Referring by letter to the drawings, a a' represent the respective parts of the main frame:

a is a hopper formed in the upper part of the frame.

Projecting inward from the shell portion a of the main frame is a hub a^3 forming the bearing for a shaft a^4 . The open front side of the main frame is covered by a dish-shaped disk a^5 mounted on the shaft a^4 . The disk a^5 may be secured directly to the shaft a^4 but is preferably formed with clutch-teeth as at a^6 , Fig. 3, to engage similar teeth in the hub portion of a handle a^7 ,

by which the shaft a^4 and connected parts are revolved. The handle a^7 is secured to the shaft a^4 by a set-screw a^8 . However, it is obvious any other suitable means might be employed for connecting the handle a^7 and the disk a^5 with the shaft a^4 .

The interior of the main frame parts a a' are so shaped as to form in general outline a three-way conduit, of which the hopper or intake a forms one arm, the discharge-conduit a^9 for shelled corn, located on the under side of the device, forms the second arm, and the discharge-conduit a^{10} for cobs, located to the right-hand side in Figs. 1, 3, and 4, forms the third arm. Within the shell portion a of the main frame, immediately below the hopper a^2 , is a series of inclined ribs a^{11} , which act upon the ear of corn in the nature of internal screw-threads, as will be explained.

Loosely journaled on the hub a^3 and spring-pressed in the direction of the shell a by a spring b' is a toothed shelling-wheel b . The toothed wheel b is slightly convex on its inner surface, as shown in Figs. 2 and 5, and is provided with a series of projecting studs or teeth b^2 , adapted to engage the grains of corn and disengage them from the cob. It is further provided with a series of elongated teeth b^3 , which are arranged, preferably, about midway from the center of the said wheel to the periphery and in staggered rows. These teeth are longer than the shelling-teeth and somewhat pointed, so as to engage between and project through the kernels and engage with the cob, and thus insure the rotation of the ear in shelling, in a manner hereinafter more fully described. The toothed wheel thus described is caused to revolve upon rotation of the handle a^7 by means of flexible connections with the disk a^5 , which consist of a plurality of links b^4 , hinged at opposite ends to the disk a^5 and the toothed wheel b .

The links b^4 are hinged to both the disk a^5 and the toothed wheel b by a peculiar method, the object of which is to facilitate the manufacture and assembling of the device. Referring particularly to Figs. 5, 6, and 7, it will be seen that in general outline the links b^4 are L-shaped. At each end of the link, perpendicular to the plane thereof and extending beyond the link in both directions, is a stud or trunnion b^5 b^6 . Located at intervals about the periphery of the toothed wheels b are perforated bosses b^7 . The portion of toothed wheel immediately adjacent to said bosses is preferably cut away or re-

cessed, as at b^8 , Figs. 5 and 6, in order to facilitate the engagement of the trunnion b^6 with the boss b^7 . The disk a^5 is indented, as at b^9 , at points in corresponding relation with the bosses b^7 of the toothed wheel. The inner end of said indent is perforated for the reception of the upper portion of the trunnion b^5 , as shown in Fig. 5. Immediately below the indent b^9 upon the inner surface of the disk a^5 are bosses b^{10} , arranged in pairs, having angular recesses in their adjacent sides, whereby they will be adapted to receive and hold the nut b^{11} of the bolt b^{12} , extending through the disk a^5 . After the link b^4 has been placed in engagement with the disk a^5 by extending the upper portion of the stud b^5 through the perforation in the indent b^9 the bolt b^{12} is inserted, and the nut b^{11} prevents the accidental withdrawal of the stud b^5 from its engagement with the disk. The toothed wheel b is capable of a limited movement independent of the disk a^5 , but when so rotated, on account of its linked engagement with the disk a^5 , it will be moved in the direction of said disk, as shown in dotted lines in Fig. 6, or when an ear of corn of larger size is inserted in the device the toothed wheel will be forced back against the tension of the spring b' and at the same time will be slightly rotated upon the hub a^3 to the position as shown in Fig. 6. However, this limited movement is only permitted in one direction, movement in the opposite direction being prevented by the bearing of the foot b^{13} of the lever b^4 upon the outer surface of the toothed wheel b , as shown in Figs. 2 and 6.

In operation the device as thus far described is secured to the edge of a box or bin or other suitable receptacle by means of a bolt extending through a lug a^{13} , projecting from the shell portion a of the main frame. The handle is turned while the respective ears of corn are fed into the hopper a^2 , where they are engaged by the revolving toothed wheel and caused to revolve therewith, in which movement they are assisted by the inclined ribs a^{11} . The kernels of corn are shelled therefrom at the same time by the toothed projection on said wheel, which move at different speeds with reference to the ear of corn, owing to their relative positions between the center and periphery of said wheel. The teeth also assist in feeding the corn downwardly as the ear is moved, thus causing every part of it to be brought into contact with the toothed wheel until the upper end of the cob is brought opposite the lower end of the conduit a^{10} , and by further revolution of the wheel and the engagement of the teeth thereof with said cob it is carried upward again and discharged from the mouth of said conduit.

The shaft a^4 is extended entirely through the main frame of the device and secured to the end thereof. Opposite the handle a^7 is a

head c , having thereon a plurality of projecting figures c' inclined on their inner or adjacent edges to form a conical interior. It has been found in practice that machines of the type described, while separating the greater part or all the well-formed kernels of grain from the cob, will leave the small or malformed kernels adhering to one or both ends of the cob. To prevent this waste and provide means for shelling such adhering kernels is the object of the head c . After the ear of corn has been passed through the device if kernels of the grain still adhere to the end of the cob said ends are inserted within the figures c' of the head c , which as it revolves will effectually disengage said kernels.

From the above description it will be apparent that I have produced a corn-sheller possessing the features of advantage enumerated as desirable and which obviously is susceptible of modification in its form, proportion, detail construction, and arrangement of the parts without departing from the principle of construction involved or sacrificing any of its advantages.

Having thus described my invention, I claim—

1. In a corn-sheller as described, the combination with a main frame, a revoluble shaft a toothed shelling-wheel flexibly connected to and adapted to revolve with said shaft, and capable of lateral movement and a limited revoluble movement independent of said shaft while at all times maintaining its driving connection with the shaft, substantially as and for the purpose specified.

2. In a device for shelling corn, the combination with the frame, a shaft, and means for revolving the shaft, a disk, and an intermediate member between the disk and shaft, articulate connections between said intermediate member and said disk, substantially as specified.

3. In a device for shelling corn, the combination with a main frame, of a revoluble shaft, a revoluble member connected to and revolving with said shaft, a toothed shelling-wheel independent of said shaft, links pivotally connected to said revoluble member and said toothed wheel respectively, substantially as specified.

4. In a device for shelling corn, the combination with a main frame, of a revoluble shaft, a toothed shelling-wheel capable of both a lateral and a revoluble movement independent of said shaft, and means for causing said toothed wheel to normally revolve with said shaft.

5. In a device for shelling corn, the combination with a main frame of a revoluble shaft, a toothed wheel, a revoluble member secured to said shaft, a spring pressing said toothed wheel away from said revoluble member, links connecting said toothed wheel and said revoluble member and opposing the

tension of said spring, substantially as specified.

5 6. In a device for shelling corn, the combination with a main frame, of a revoluble shaft, a revoluble member secured to said shaft, a toothed wheel, a plurality of links hinged connections between said toothed wheel and said revoluble member, and a spring interposed between said revoluble member and said wheel, substantially as specified.

15 7. In a device for shelling corn, the combination with a main frame of a revoluble shaft, a revoluble member secured to said shaft, a toothed shelling-wheel, a perforated boss on said wheel, a link, a trunnion on said link engaging said perforated boss, and a hinged connection between said link and said revoluble member, substantially as specified.

20 8. In a device for shelling corn, the combination with a main frame of a revoluble shaft, a revoluble member secured to said shaft, a toothed shelling-wheel, an inward-projecting portion on said revoluble member having a perforation therein, a link, a trunnion on said link engaging in said perforation, and a hinged connection between said link and said toothed wheel, substantially as specified.

30 9. In a device for shelling corn; the combination with a main frame, of a revoluble shaft, a revoluble member secured to said

shaft, a toothed shelling-wheel, a link hinged to said toothed wheel, an indenture in said revoluble member having a perforation therein, bosses on said revoluble member adjacent to said indenture, having their adjacent faces so shaped as to engage a bolt-nut, trunnions extending in opposite directions from said aforementioned link, one of said trunnions extending through the aforementioned perforation and the other trunnion extending between said bosses, a bolt extending through said revoluble member and having the nut thereof located between said bosses and beyond said last-named trunnion, substantially as specified.

10. In a device for shelling corn, the combination of a main frame, inclined ribs formed in said main frame, a revoluble shaft, a toothed shelling-wheel, a spring pressing said toothed wheel toward said inclined ribs, a driving connection between said toothed wheel and said shaft, whereby said toothed wheel is permitted a helical movement independent of said shaft, substantially as specified.

In testimony whereof I have hereunto set my hand this 29th day of January, A. D. 1906.

WILLIAM BAYLEY.

Witnesses:

CHAS. I. WELCH,

CLARA GALLAGHER.