

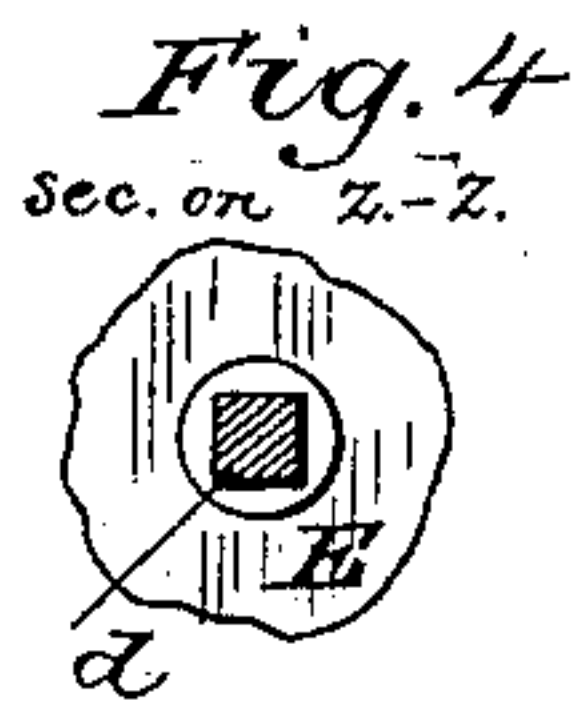
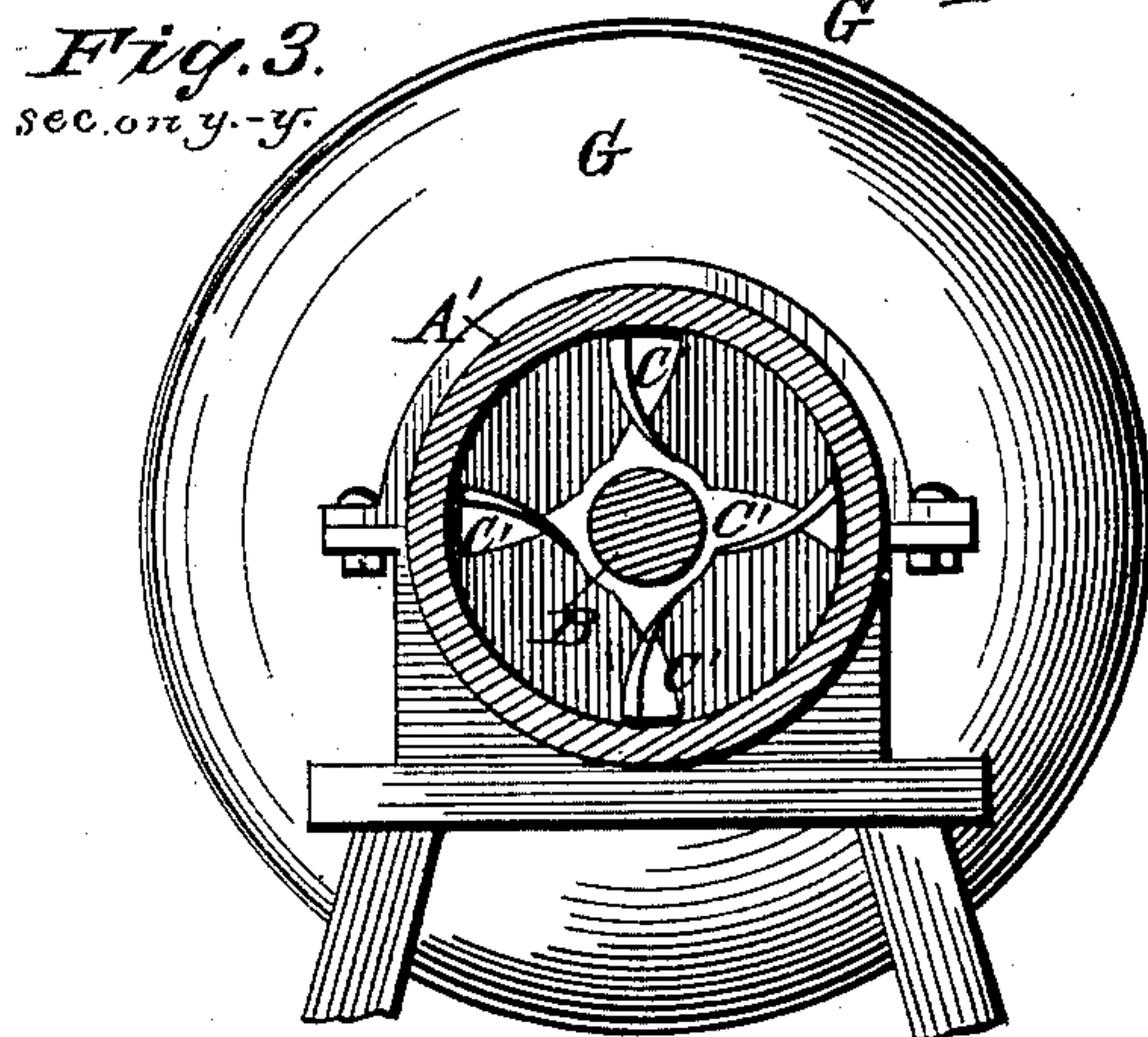
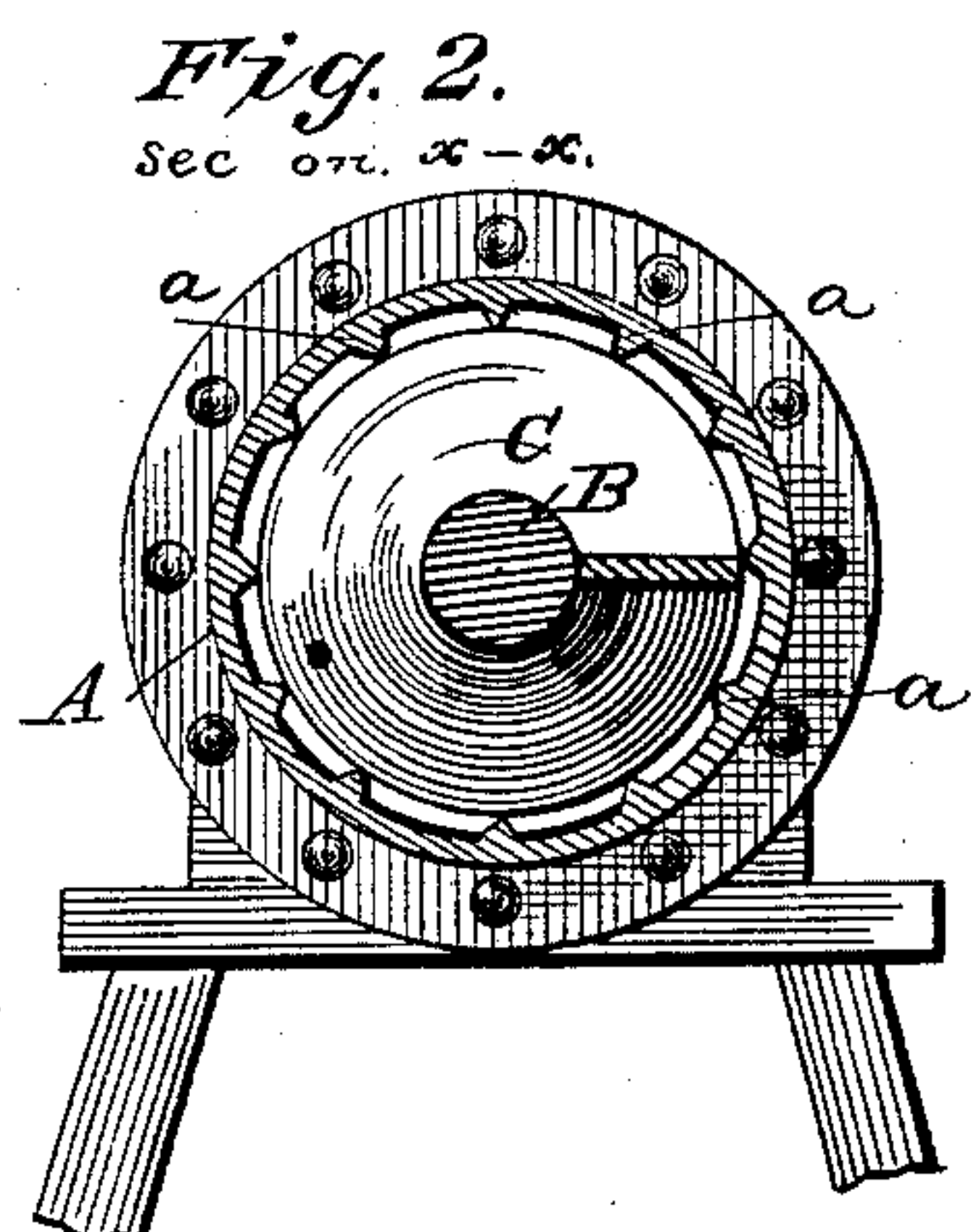
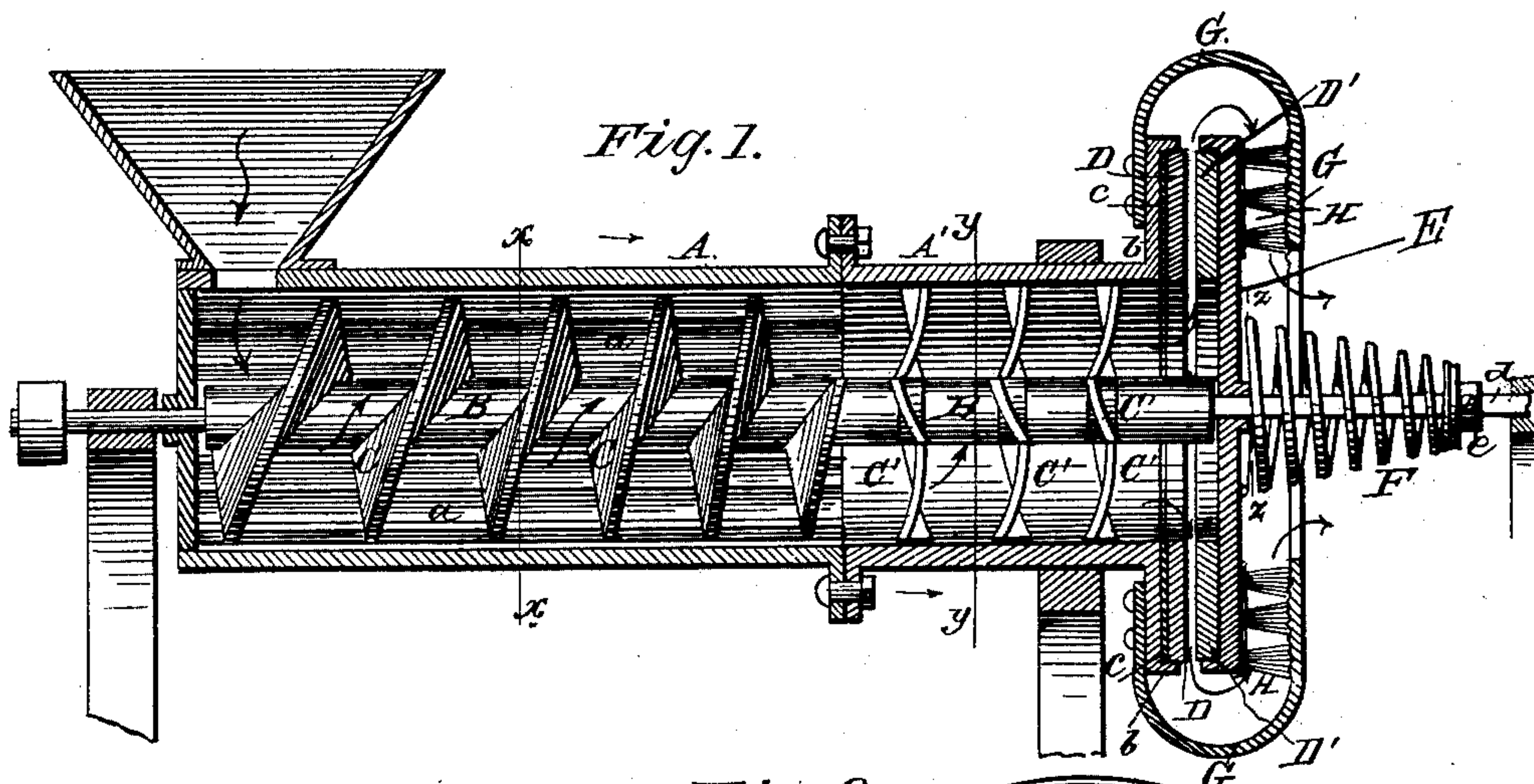
(No Model.)

D. ETNIER, Jr.

GRAIN SCOURER.

No. 360,670.

Patented Apr. 5, 1887.



WITNESSES:

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UNITED STATES PATENT OFFICE.

DAVID ETNIER, JR., OF MOUNT UNION, PENNSYLVANIA.

GRAIN-SCOURER.

SPECIFICATION forming part of Letters Patent No. 360,670, dated April 5, 1887.

Application filed June 29, 1886. Serial No. 206,655. (No model.)

To all whom it may concern:

Be it known that I, DAVID ETNIER, Jr., of Mount Union, in the county of Huntingdon and State of Pennsylvania, have invented a
5 new and useful Improvement in Grain-Scourers, of which the following is a specification.

The construction and combination of devices constituting my invention are as hereinafter described and claimed.

10 In the accompanying drawings, Figure 1 is a central longitudinal section of my machine. Fig. 2 is a cross-section on the line xx , Fig. 1. Fig. 3 is a cross-section on line yy , Fig. 1. Fig. 4 is a cross-section on line zz , Fig. 1.

15 The cylinder of the scourer is formed in two sections, A and A', which are secured together by bolts passing through radial circular flanges, as shown. The interior surface of the section A has parallel longitudinal ribs a , Fig. 2; but
20 the other section, A', has a smooth interior, Fig. 3. The conveyer arranged within said cylinder consists of a shaft, B, provided with spiral flanges C and C', which are of different construction—that is to say, the shaft B, which
25 traverses the cylinder centrally from end to end, has a continuous spiral flange, C, within the ribbed cylinder-section A, while the other part of the shaft, surrounded by section A', has a series of disconnected or independent spirally-bent arms, C'.

30 The pitch of the spiral flange C gradually decreases as it approaches the cylinder-section A', so that the grain is fed through the section A with gradually-lessened rapidity. The result is that the density or compactness of the mass and the pressure of the kernels upon
35 each other are gradually augmented and the grain thereby scoured and cleaned more and more effectively as it moves along. In this
40 operation the ribs a obviously contribute materially to the desired result by adding to the area of frictional surface.

When the grain passes from cylinder-section A into section A' its progress is no longer hindered by friction with ribs, nor is there a variation of pressure and rapidity of feed; but the radial arms C' have all a like twist and are placed equidistantly on the shaft B, so as to act equally on the grain. The said arms
50 serve to continue the progress of the latter toward the discharge end of the cylinder, and

also incidentally rub and scour it; but the chief means I employ for rubbing and scouring the grain consists of devices I will now describe.

55 A radial flange, b , is formed on the outer end of cylinder-section A', and an annular piece, D, of leather or other material suitable to form a friction-surface, is applied to it, as shown in Fig. 1. A rubber strip, e , may be placed beneath it, to give it more elasticity. The end of the cylinder-section A' is opposed by a head, E, which serves as a yielding rubber for scouring the grain. The said head E consists of a disk mounted on the reduced poly-
60 gonal part d of the conveyer-shaft, and provided with an annular friction-piece, D', formed of leather or equivalent material. The head E is adapted to slide lengthwise on the shaft B; but the latter, being square or polygonal, the
65 head partakes of its rotation.

In rear of the head, and encircling the shaft B, I place a spiral spring, F, which supports the head with an elastic pressure. The tension of the spring, and thereby its pressure on the
70 the head, may be regulated at will by means of a collar, e , which slides on the shaft B, and is secured by a clamp-screw, as shown in Fig. 1.

It will now be understood that the spring F allows the head to yield sufficiently to permit
80 the grain to pass laterally between it and the fixed rubber, whereby it is scoured to the required degree. Such lateral discharge of the grain from the cylinder is of course effected by the rotation of the head combined with the
85 pressure exerted by the spiral conveyer.

Additional to the scourer proper I propose to employ a polisher, which is constructed as follows: An annular hood, G, is permanently attached to the cylinder-flange, and incloses
90 or surrounds both rubbers, and also projects a short distance over the back of the head E. To the outer side of the latter I attach an annular brush, H, which acts on a roughened portion of the hood G, as shown in Fig. 1. 95

The grain discharged from between the rubbers passes between this brush and the opposed roughened surface of the hood G, and is thereby polished by being freed from fuzzy or light particles that may by chance still adhere to it
100 after leaving the scourer proper, and is thus prepared for grinding.

The arrows indicate the course of the grain through the machine.

What I claim is—

1. In a grain-scourer, the combination, with
5 the conveyer and the cylinder having a rubbing-surface fixed on its discharge end, of a yielding rotating rubber which serves to close one end of said cylinder, and a spring which serves to hold said rubber with elastic pressure
10 against the end of the cylinder, as shown and described.

2. In a grain-scourer, the combination, with the conveyer, the cylinder, and the fixed and rotating rubbers, of an annular hood or case

surrounding said rubbers, and a brush fastened
15 on the movable rubber, substantially as shown and described.

3. In a grain-scourer, the combination, with the cylinder-section A, having interior longitudinal ribs, of the cylinder-section A', having
20 a smooth or ribless interior surface, a conveyer arranged as specified, and the fixed and rotating rubbers, as shown and described.

DAVID ETNIER, JR.

Witnesses:

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