

No. 833,947.

PATENTED OCT. 23, 1906.

W. H. THOMPSON.
SMUT MACHINE.
APPLICATION FILED MAR. 9, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

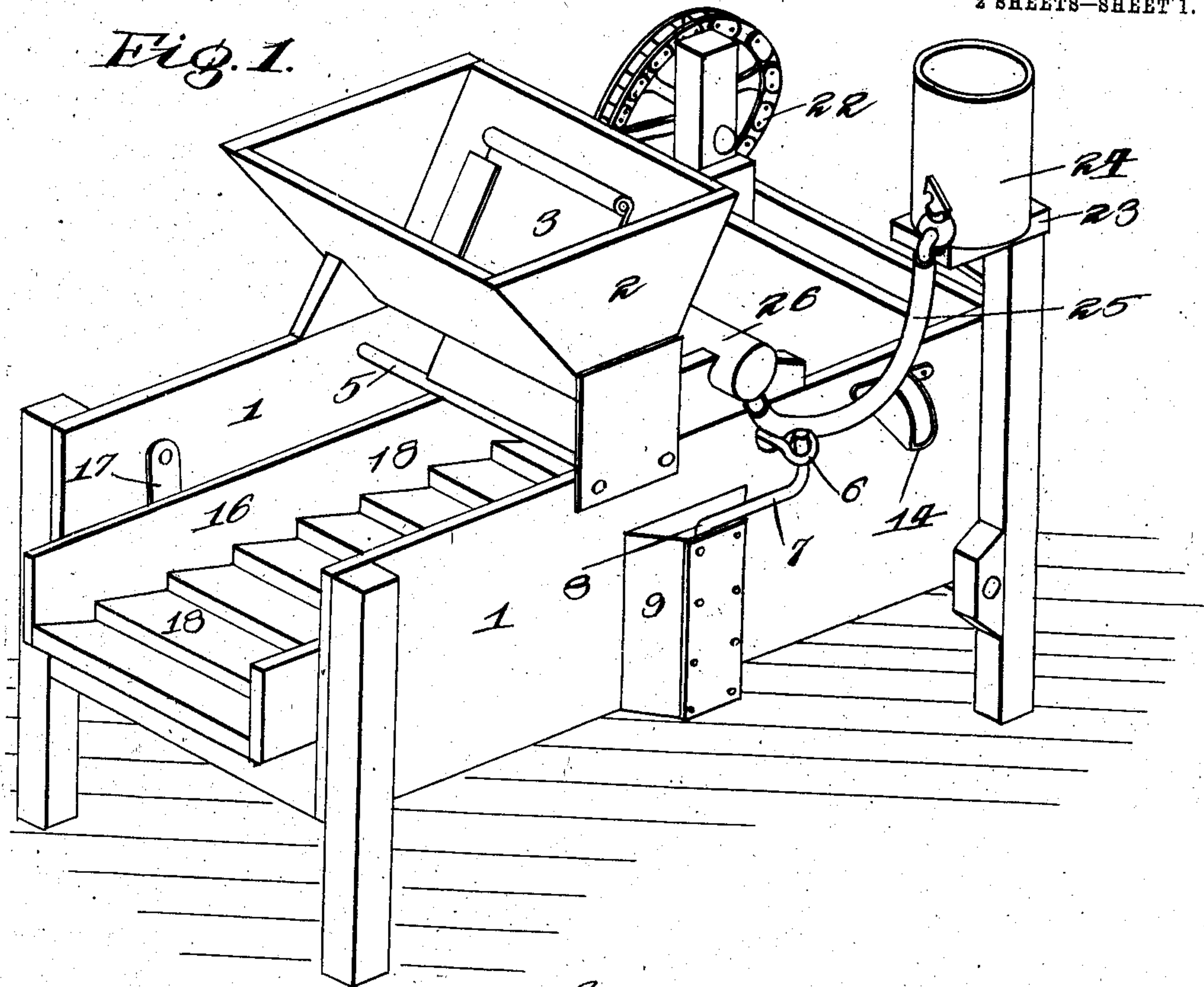
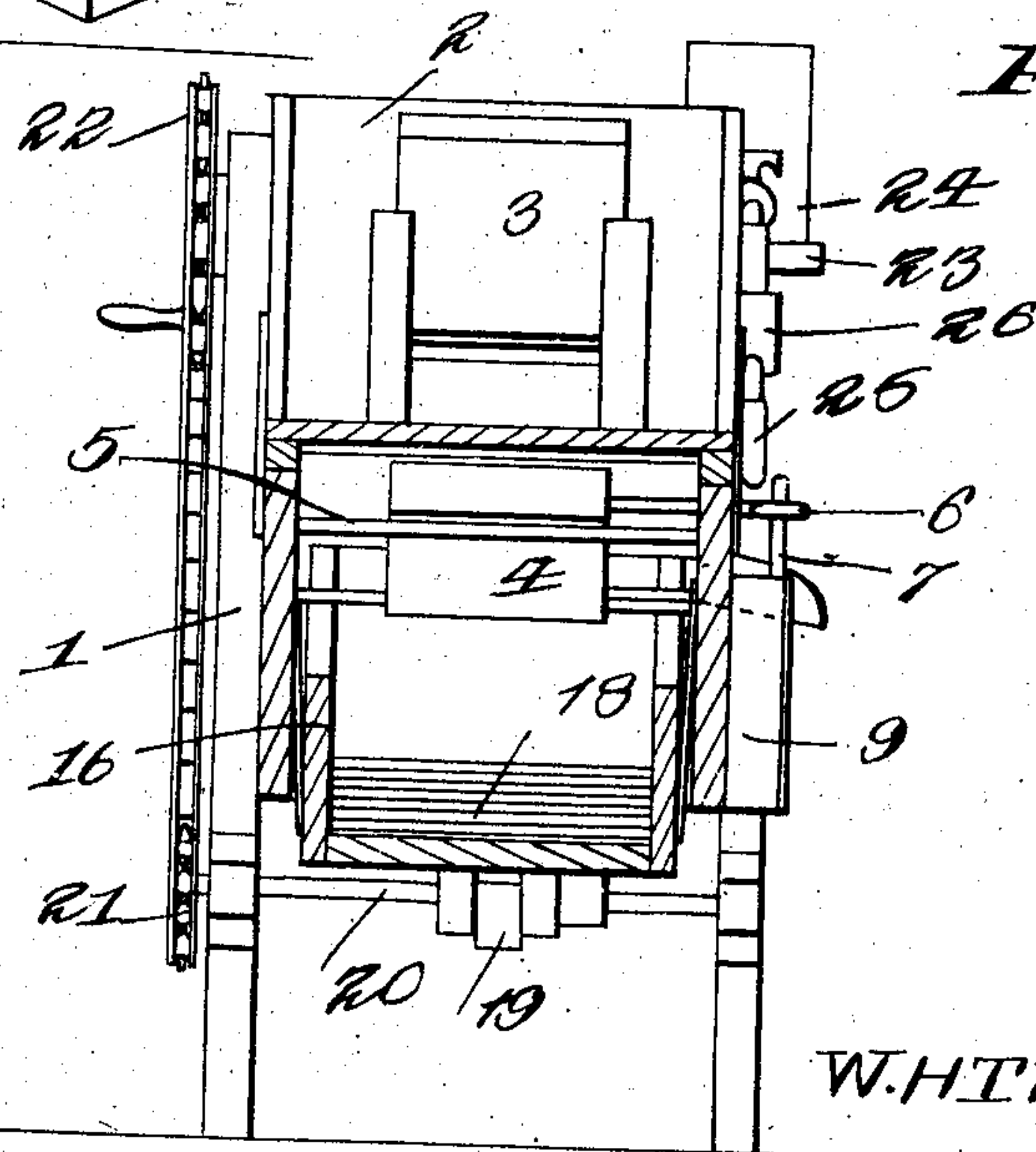


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

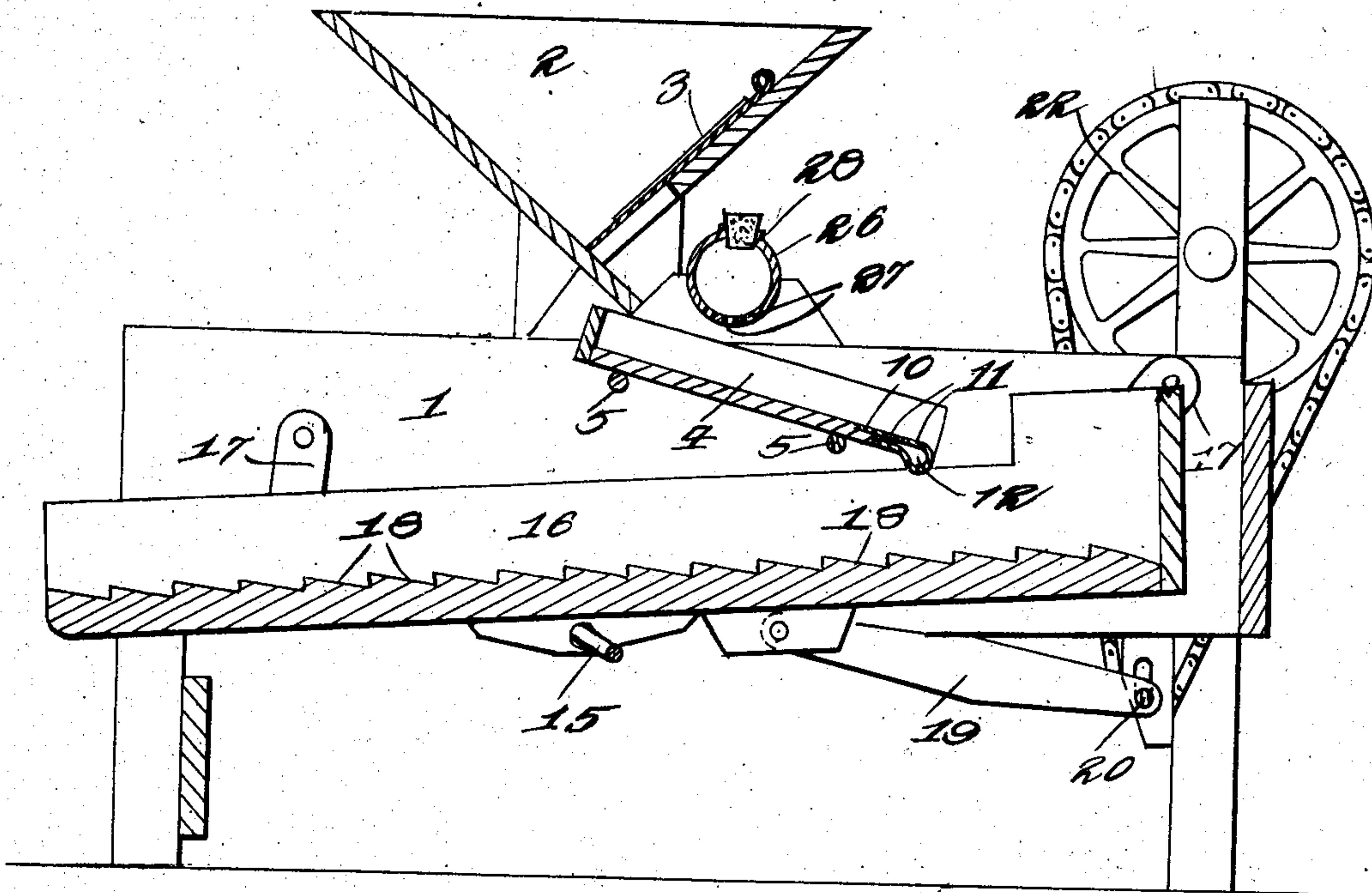
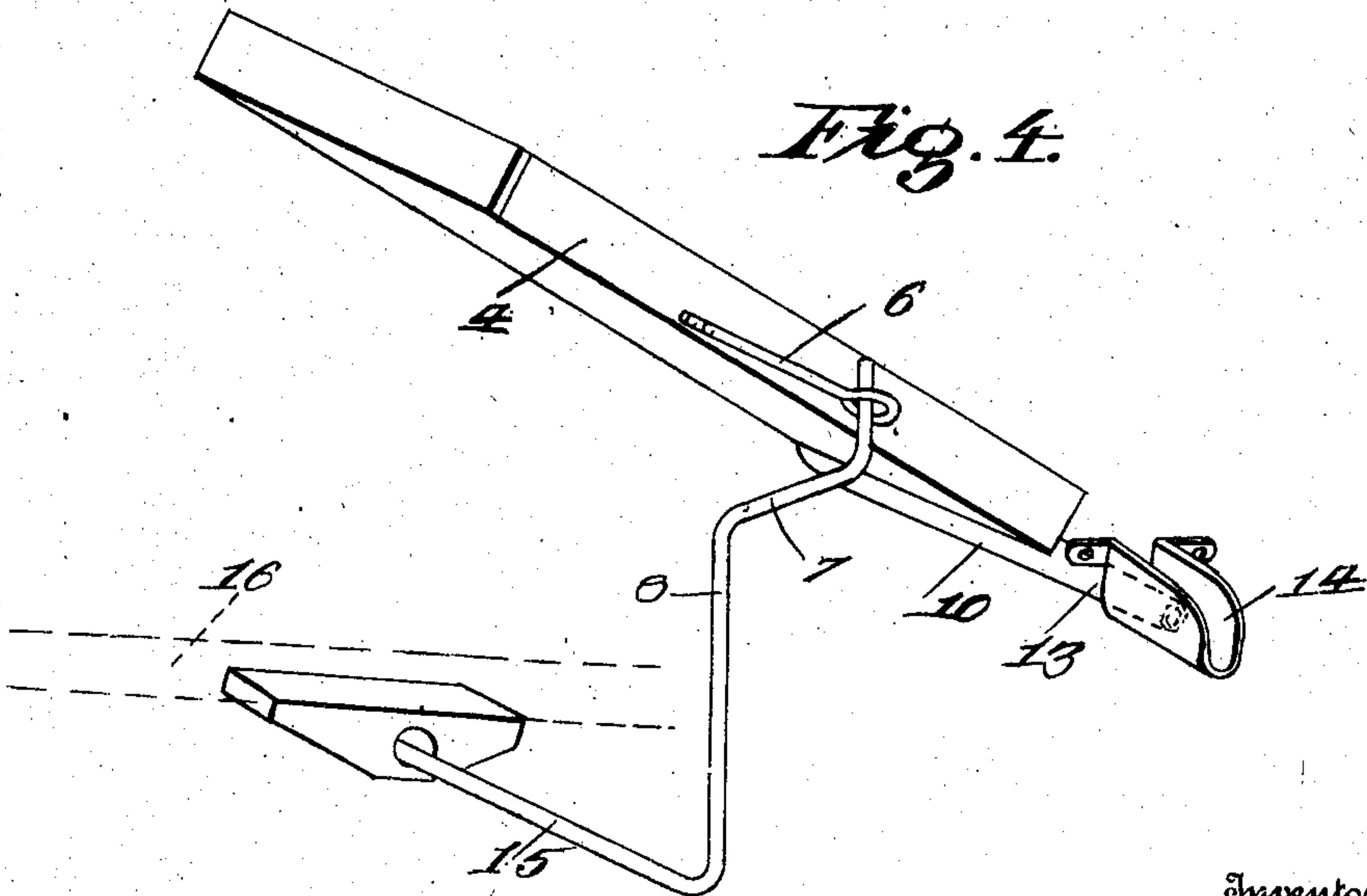


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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SMUT-MACHINE.

No. 833,947.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed March 9, 1906. Serial No. 305,155.

To all whom it may concern:

Be it known that I, WILLIAM H. THOMPSON, a citizen of the United States, residing at Fairmount, in the county of Richland and State of North Dakota, have invented certain new and useful Improvements in Smut-Machines, of which the following is a specification.

My invention contemplates certain new and useful improvements in grain-scouring machines, and is particularly designed as a smut-machine for treating seed-grain.

The object of the invention is to provide an improved machine of this character embodying a hopper for the grain designed to discharge the same onto a transversely-vibrating and inclined sluice or shoe upon which the grain-treating solution is sprayed and said shoe being provided in its lower edge with a draw-off device for surplus solution and the grain then passing over the lower edge of the shoe onto a longitudinally-vibrating shoe formed with a succession of steps down which the grain is shaken to its final discharge from the machine.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a perspective view of my improved grain-scouring machine. Fig. 2 is a transverse sectional view thereof. Fig. 3 is a longitudinal section. Fig. 4 is a detail perspective view illustrating particularly the inclined sluice and the means for actuating the same.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The framework of the machine embodies side bars 1, preferably held in an elevated position on suitable legs or standards and supporting a hopper 2, which extends across the machine from one side bar to the other and is provided with a discharge-opening governed by any desired form of gate 3. Underneath the discharge end of the hopper 2 is located an incline 4, supported by cross-bars 5 and secured, by means of a laterally-extending arm 6, to the crank 7 of a vertical shaft 8, mounted in a boxing 9 on the outer side of one of the side bars 1. The lower end of the incline 4 is provided with a preferably

metallic plate 10, containing any desired number of apertures 11, leading to a laterally-extending chamber 12, and the lower edge of the plate 10 is provided with a lateral tubular extension 13, forming a side continuation of the chamber 12. The tubular extension 13 rests loosely in a spout 14, mounted in one of the side bars 1 of the framework. The incline 4 constitutes a sluice and is intended to have a lateral vibratory or reciprocating motion. This motion is imparted to it by means of the arm 6 and crank 7 of the shaft 8, the latter extending below its boxing 9 and provided with a lateral 15, secured in any desired manner to the under side of a longitudinally-reciprocating shoe 16. Hence it will be seen that as the said shoe reciprocates it will rock the shaft 8 and impart the before-mentioned transverse vibrations to the incline or sluice 4.

The shoe 16 is supported, by means of hangers 17, between the side bars 1 of the framework and extends, preferably, through nearly the length of the machine, with its receiving end adjacent to and underneath the discharge end of the incline or sluice 4. The shoe 16 is preferably inclined in a direction opposite to the sluice 4 and is formed on its upper face or bed with a series of steps 18.

The shoe 16 receives its longitudinally-reciprocating motion by means of a pitman 19, connected to it and connected to a crank-shaft 20, extending transversely across the machine at one end and carrying a pulley, sprocket-wheel, or the like 21. In the present instance a sprocket is shown. The sprocket 21 is connected by a chain to a similar though larger sprocket 22, mounted at one upper corner of the framework and designed to be driven by any suitable power.

At the opposite corner of the machine is located a standard 23, designed to support a supply-tank 24 for the solution that is intended to treat the grain. The supply-tank 24 is provided with a valve and is connected in any desired manner, as by a hose 25, to a cylindrical reservoir and spray devices 26. The latter is preferably detachably supported in brackets on the upper edges of the side bars 1 and is provided with any desired number of jets or spray-apertures 27, designed to spray the solution onto the sluice 4. The cylindrical reservoir 26 is also formed with a larger opening 28 opposite the spray-apertures or jets, said opening being closed in any desired manner and when open serving

as either a means for emptying the reservoir bodily or as a means for inserting any tool into the cylinder for the purpose of cleaning out the apertures 27.

5 In the practical operation of my improved smut-machine the grain to be treated is deposited in the hopper 2 and upon the gate 3 being opened will flow through the discharge-opening in the hopper to the upper end of the
10 sluice 4. As the grain flows down the sluice 4 the solution for treating it will be sprayed from the reservoir 26, while at the same time the sluice 4 will be receiving a transverse vibratory motion and the shoe 16 will be re-
15 ceiving its longitudinally-vibratory motion. The grain will thus be shaken from side to side on the sluice and the solution will thereby act to the best advantage on all the particles of the grain, any surplus of the solution
20 passing through the apertures 11 into the chamber 12 and thence out through the spout 14, while the treated grain will pass off the lower end of the sluice 4 onto the upper end of the shoe 16 and thence be jarred down the
25 steps of the shoe and finally out of the discharge end of the machine.

In the preferred operation of my improved invention the seed-grain is sprayed with a formaldehyde solution as it passes down the
30 sluice 4 and is thoroughly and evenly wet as it passes on down the spout of the shoe 16 by the vibratory motion. The formaldehyde is used as a germ-killer, and the spout 14 is for the discharge of the surplus of the solution,
35 which might come down too rapidly in case the operator did not draw up the slide in the hopper and allow a sufficient amount of grain to pass down the sluice.

Having thus described the invention, what
40 is claimed as new is—

1. In a machine of the character described, the combination of a framework embodying side bars, a longitudinally-vibrating inclined shoe, a transversely-vibrating inclined sluice
45 above said shoe and designed to discharge

thereon, a grain-hopper adapted to discharge onto the upper end of the sluice, means for actuating the sluice and shoe, means for spraying the grain as it passes down the
50 sluice, the sluice being provided at its lower end with an apertured plate, and a chamber into which the apertures lead, said chamber being provided with a lateral extension, and a spout secured to and projecting outwardly
55 from one side bar of the framework and in which said lateral extension loosely rests.

2. A machine of the character described, comprising a framework, a hopper mounted thereon, cross-bars 4 secured to the side bars of the framework, an inclined sluice support-
60 ed on said cross-bars and mounted to slide thereon, a spray-reservoir mounted in the framework above the sluice, the sluice being provided at its lower end with an apertured
65 plate and a chamber into which the aperture of the plate leads, said chamber being provided with a lateral extension, a spout secured to and projecting outwardly from one
70 side bar of the framework, the said lateral extension of the chamber resting in and adapted to slide in said spout, a reversely-inclined shoe mounted in the framework, hangers piv-
75 otally supporting said shoe to swing longitudinally, means for swinging said shoe, an arm 6 projecting laterally from the sluice and out beyond one side bar of the framework
and a vertical shaft 8 mounted in a boxing in the outer side of one side bar of the frame-
work, said shaft being provided at one end with a crank operatively connected to the
80 lateral arm 6 of the sluice and being provided at its other end with a lateral secured to the end side of the said shoe, as and for the purpose set forth.

In testimony whereof I affix my signature
85 in presence of two witnesses.

WILLIAM H. THOMPSON. [L. s.]

Witnesses:

PETER MERGENS,
L. N. ABBOTT.