No. 680,755. Patented Aug. 20, 1901.

J. S. BLOOM.

MACHINE FOR CRUSHING AND CUTTING CORN.

(Application filed June 19, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

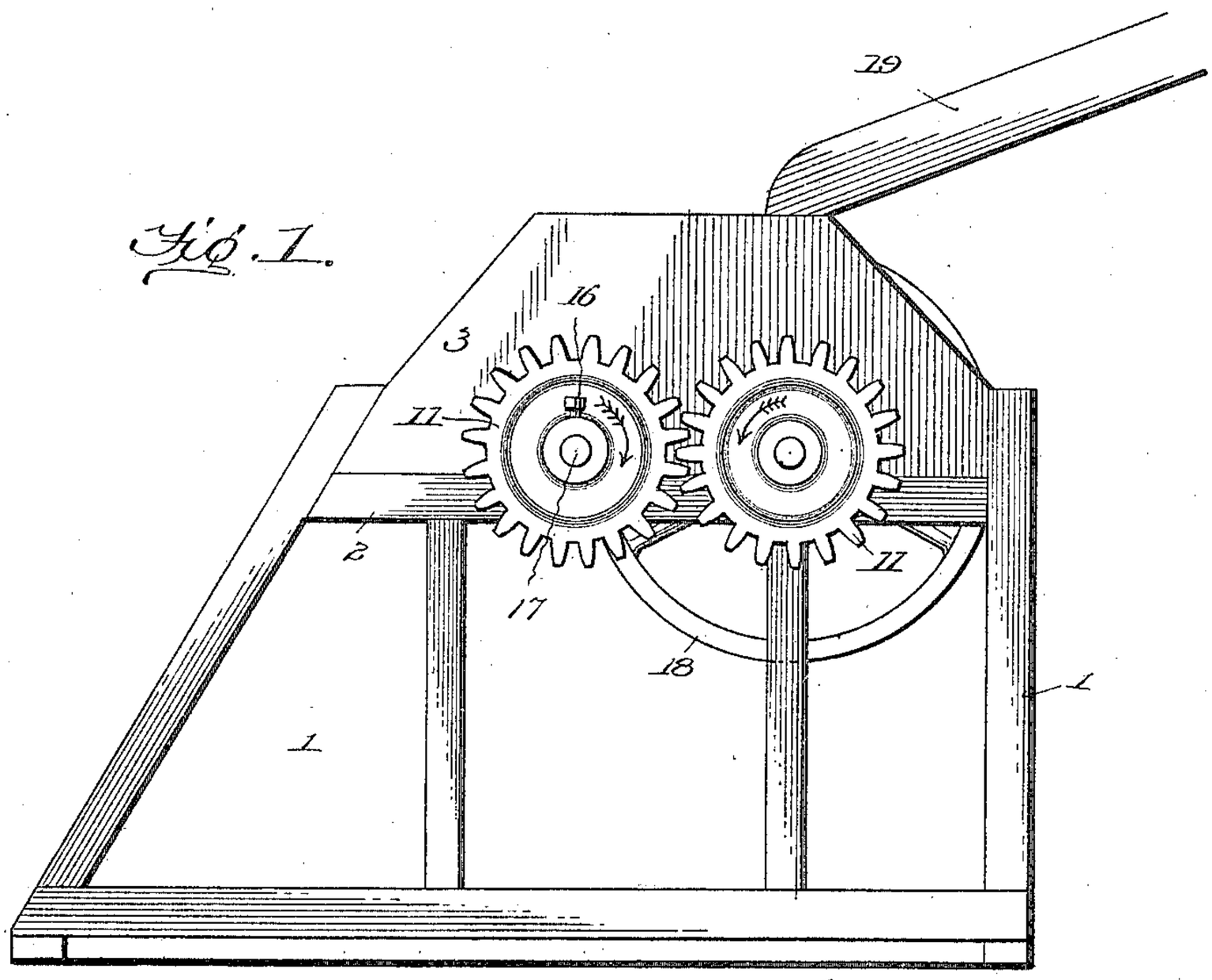

Fig. 2.

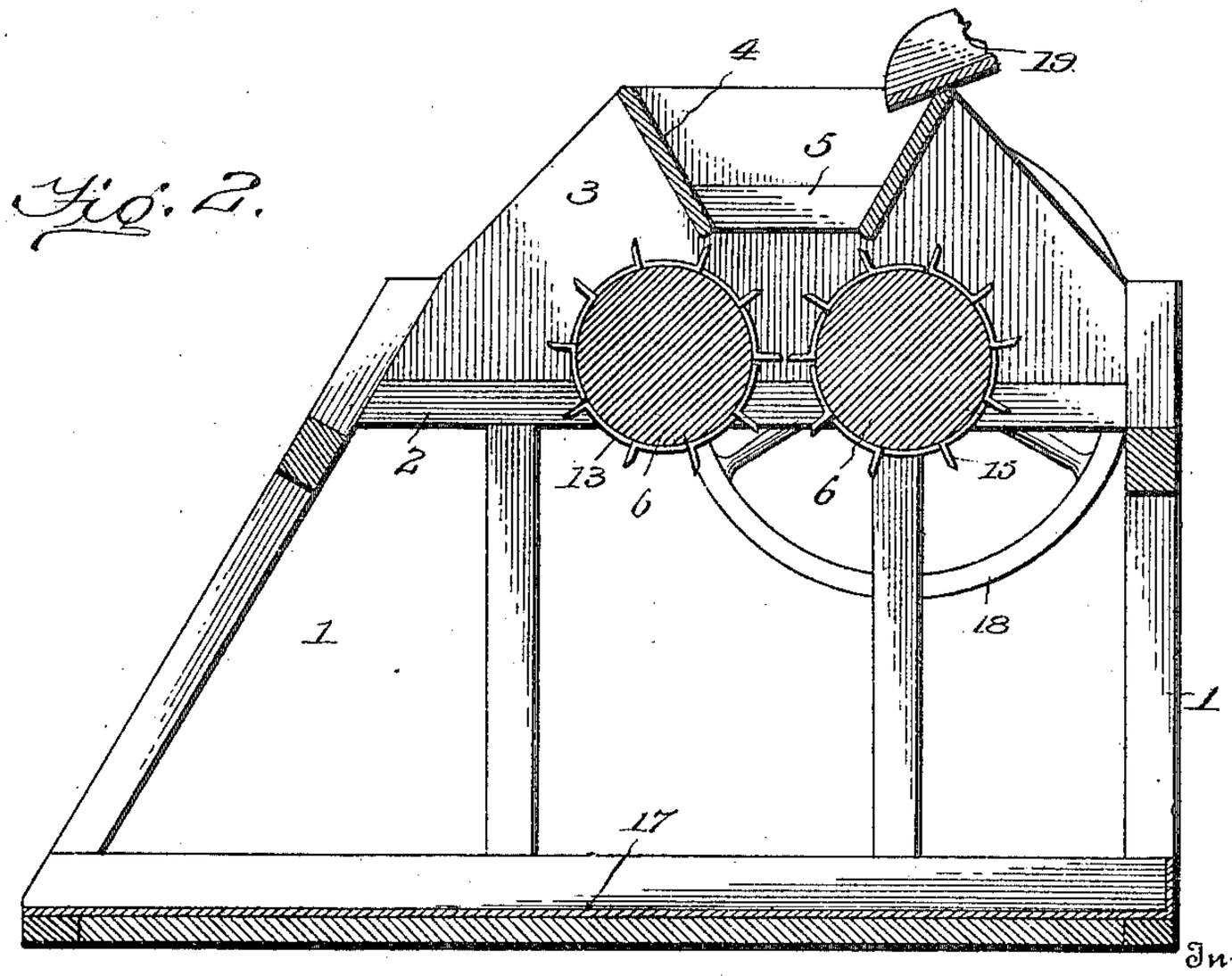

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Fig. 3.

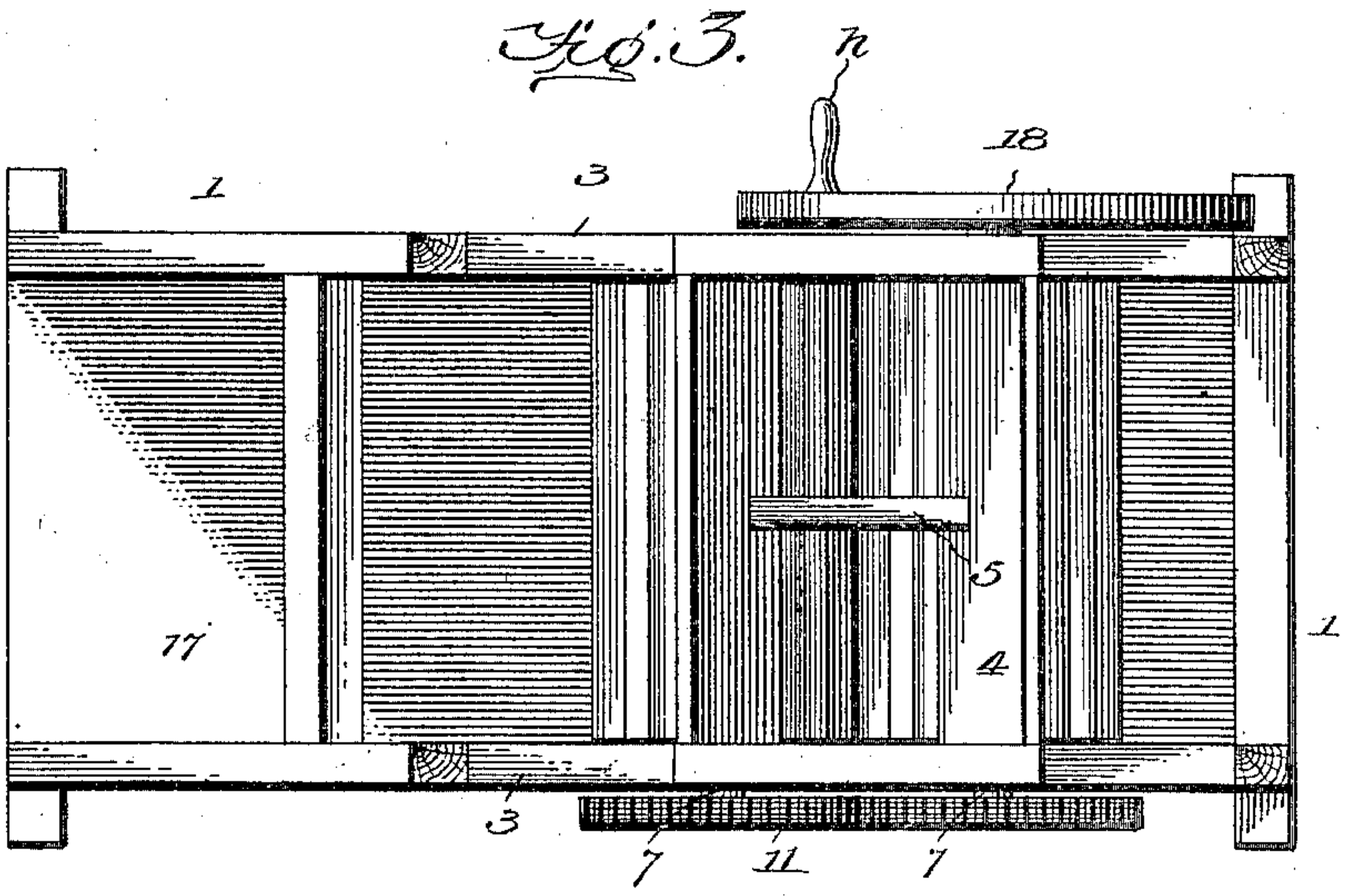


Fig. 4.

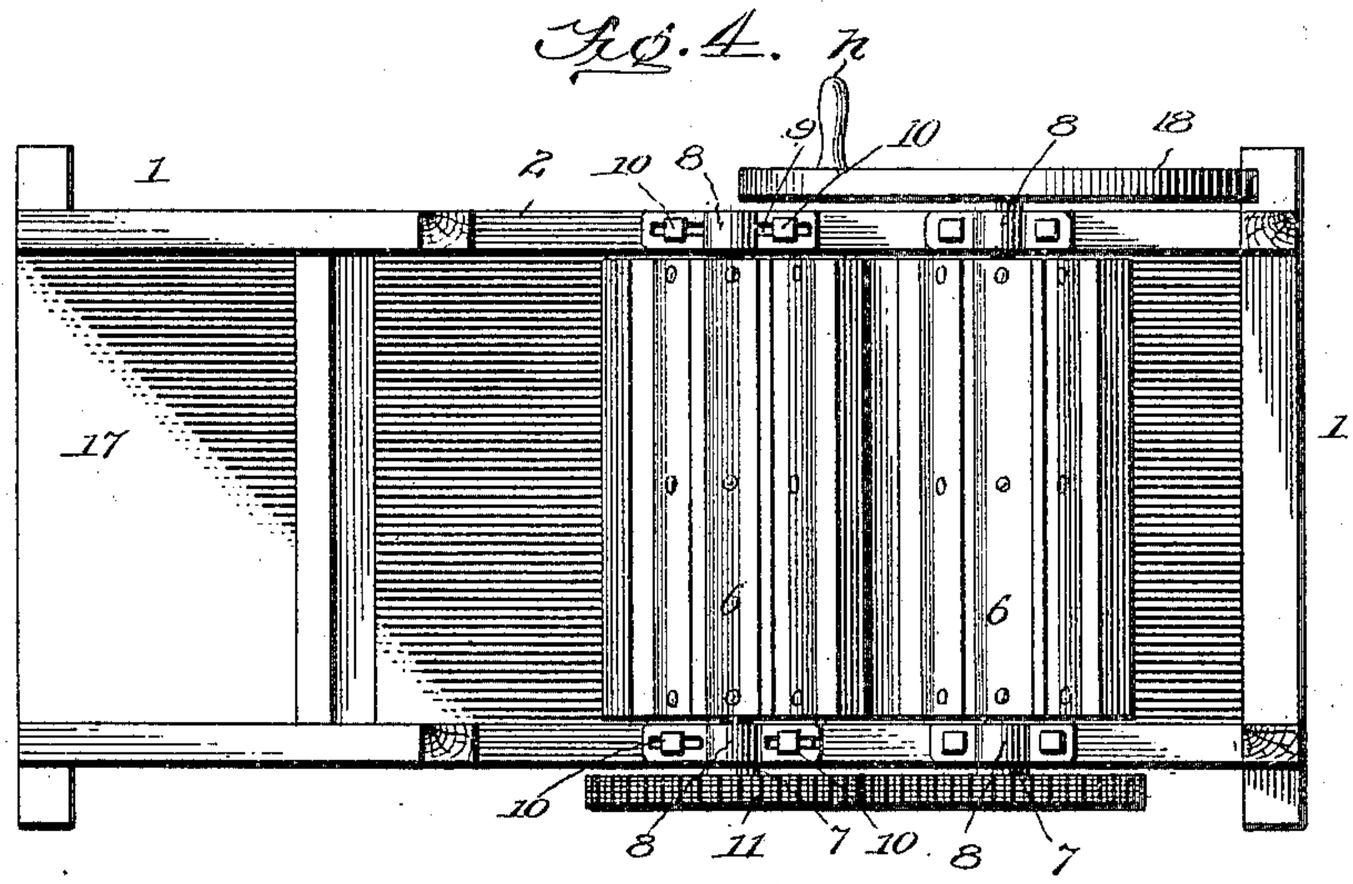
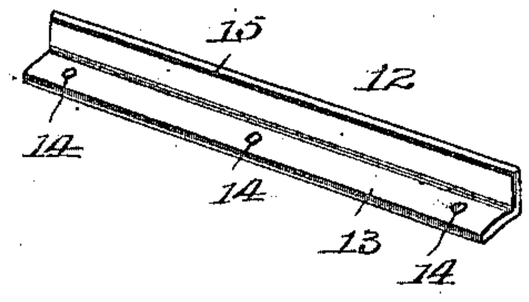


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN S. BLOOM, OF WINTHROP, IOWA.

MACHINE FOR CRUSHING AND CUTTING CORN.

SPECIFICATION forming part of Letters Patent No. 680,755, dated August 20, 1901.

Application filed June 19, 1900. Serial No. 20,862. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. BLOOM, a citizen of the United States, residing at Winthrop, in the county of Buchanan and State of Iowa, have invented new and useful Improvements in Machines for Crushing and Cutting Corn, of which the following is a specification.

This invention relates to new and useful improvements in machines for cutting and crushing corn; and its primary object is to provide a device of this character which is simple and durable in construction, which may be readily operated, and which is effective in use.

The invention consists in a hopper having a transverse grinding-partition and in its lower end a pair of rollers provided with longitudinal radial blades having peripheral cutting edges and an L flange or base, whereby the blade is secured to the roller, the flange covering the roller between the blades and the edge of the flange abutting against and aiding to support the next blade, and equal engaging gear-wheels arranged so that the rollers revolve with the opposing blades always in register.

I have fully and clearly illustrated the improvements in the accompanying drawings, wherein—

Figure 1 is a side elevation showing the interior construction of the frame and the coacting cutting and crushing rollers. Fig. 2 is a central longitudinal section. Fig. 3 is a plan view. Fig. 4 is a similar view thereof with the hopper detached, and Fig. 5 is a detail view of a cutting-blade.

Referring to said figures by numerals of reference, 1 is the frame of the device, upon the cross-strips 2 of which are mounted suitable side pieces 3, between which is mounted a hopper 4, which extends transversely of the machine. This hopper is provided at its center with a strip 5, extending thereacross, and at points below the same are journaled cylinders 6 of particular construction. These cylinders are preferably formed of wood and have trunnions 7, which are journaled within boxes 8, secured to the cross-strips 2, heretofore referred to. The boxes of one of the cylinders are slotted at 9 for the reception of the securing-bolts 10, whereby the cylinder mounted in the slotted bearings may be moved to and from its mate, as desired. A gear 11 is secured to the end of a trunnion 7 of each cylinder 6, and these gears mesh, and thereby cause the cylinders to rotate in unison and the blades thereon to always register.

Each cylinder 6 is provided with a desired number of longitudinally-extending blades 12. These blades are substantially L-shaped in cross-section, one portion 13 thereof being made convex-concave to fit the circumferential face of the wooden cylinder, and is provided with a suitable number of perforations 14 for the reception of suitable securing means, as bolts. The other part 15 of the blade is sharpened and is adapted to project radially from said cylinder, as shown. It will be seen that the section 13 of the blade is slightly curved, so as to conform to the curvature of the cylinder to which it is attached, and these blades are all arranged, preferably, as shown in Fig. 2, with the edge of the flange abutting against the next blade, and it will thus be seen that the sections 13 thereof form a continuous metallic casing about the cylinder.

The gears 11 are preferably secured to their trunnions by means of set-screws or in any other suitable manner, and it will be understood that the same may be detached and smaller or larger gears substituted therefor. The gears, it will be perceived, are so arranged that the rollers will be revolved with the blades always in register.

A suitable trough, as 17, is arranged within the frame 1 at a point below the cylinder 6 for the reception of the corn after the same has been operated upon by the machine. A hand-wheel 18, having a handle *h*, is mounted upon the trunnion of one of the cylinders 6, and it will thus be seen that the device may be readily operated manually.

Corn is fed to the hopper in any suitable manner, as through a trough 19, and will, as is obvious, be turned into an upright position by the cross-strip 5. The ears will therefore be fed between the cylinders end first, and the blades thereof are so arranged as to cut in unison.

It will be seen that by adjusting the boxes 8 so as to carry the roller mounted therein toward its mate the blades 15 may be made to

overlap, and the cylinders will thus be brought closely together and the crushing action thereof will be greater. The material after leaving the cylinders will, as is obvious, fall into the trough 17.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination in a machine for cutting corn-ears into pieces, of a hopper, a transverse grinding-partition in the lower end of the hopper, a pair of rollers each provided with longitudinal radial blades presenting peripheral cutting edges, each blade having an L flange or base, whereby it is secured to the perimeter of the roller, said base covering the interval between the blades, and abutting against, and aiding to support the next blade, and the equal engaging gear-wheels whereby the rollers are caused to revolve with their opposing blades always in register.

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

JOHN S. BLOOM.

Witnesses:
WILLIAM KIRKPATRICK,
WILLIAM M. FERRIN.