

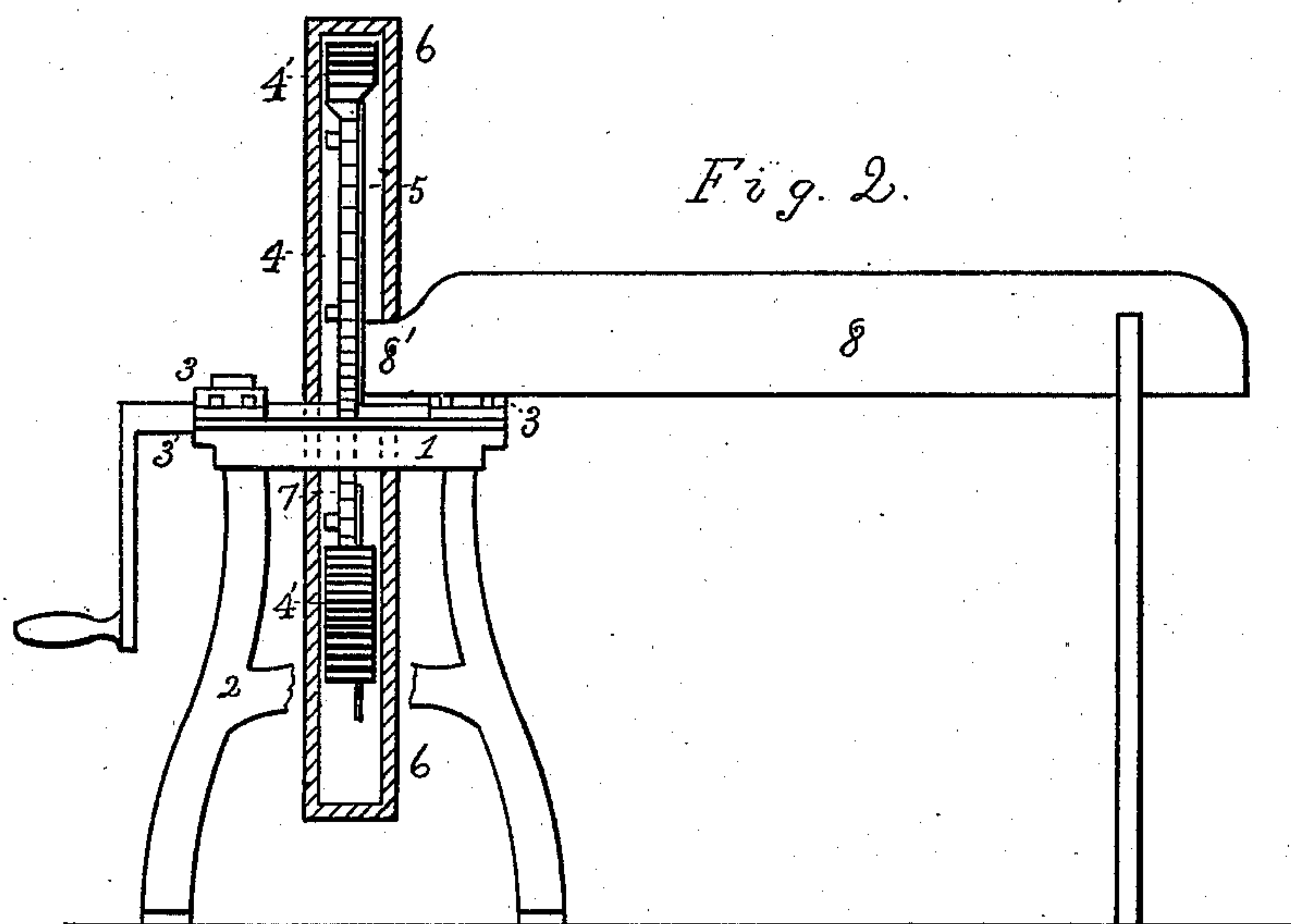
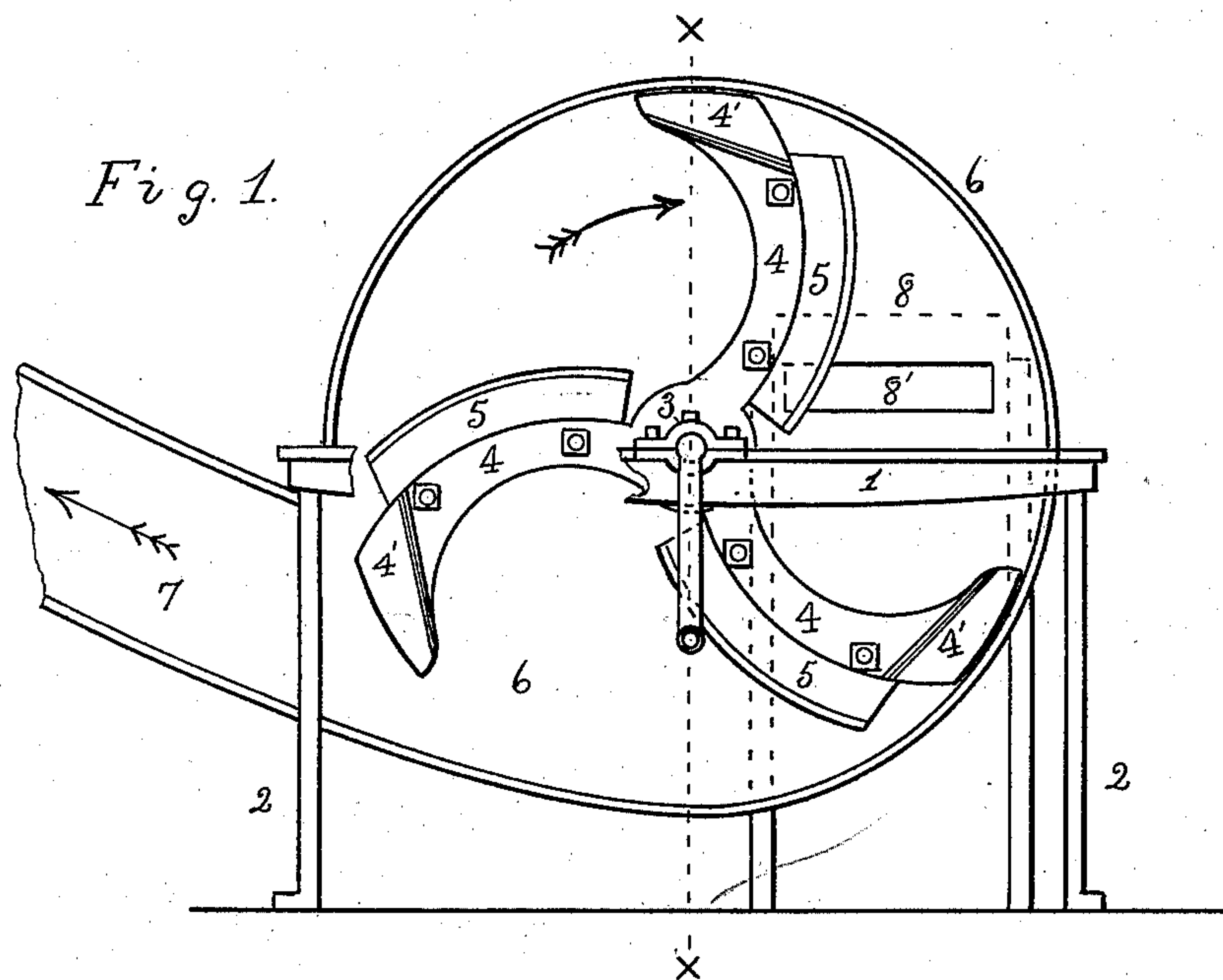
(No Model.)

O. C. LITTLE.

FEED CUTTER.

No. 384,208.

Patented June 5, 1888.



Witnesses:
M. M. Schoetz.
J. W. Pleasant.

Inventor:
Orton C. Little,
per G. H. Albee,
his Attorney.

UNITED STATES PATENT OFFICE.

ORTON C. LITTLE, OF MENASHA, WISCONSIN.

FEED-CUTTER.

SPECIFICATION forming part of Letters Patent No. 384,208, dated June 5, 1888.

Application filed May 10, 1886. Serial No. 201,646. (No model.)

To all whom it may concern:

Be it known that I, ORTON C. LITTLE, a citizen of the United States, residing at Menasha, in the county of Winnebago and State of Wisconsin, have invented a new and useful Improvement in Feed-Cutters, of which the following is a specification.

My invention relates to an improvement in the devices used in removing the feed from the immediate vicinity of the cutter after it has passed through it and been subjected to the action of the cutters and made fine, and also in the mechanism for the separation of the dust and light foreign substances from the cut material; and the object of it is to diminish the labor required for its removal and separation incident to the use of feed-cutters as heretofore made, to leave the feed in the desired location in a comparatively clean and dustless and consequently more valuable condition for feeding purposes, and, furthermore, to protect the operators from the dangers incident to feed-cutters having rapidly-revolving knives. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an end elevation of a feed-cutter, viewing it from the left hand of Fig. 2, and having one side of its circular case removed, showing the spider to which the knives are secured, their form, &c. Fig. 2 is a side view of the same as seen from the right hand of Fig. 1, the circular case 6 being in section and taken upon the line $x x$ of Fig. 1.

Similar figures of reference indicate like parts in the several views.

1 is the frame of the cutter, supporting the revolving cutting mechanism, and rests upon the legs 2 2. In the bearings 3 3 is a revoluble shaft, 3', upon which is firmly secured a rimless wheel or spider, to each of whose arms 4 4 4 are bolted the knives 5 5 5, which approach in form the section of a ring. Inclosing the spider is a circular casing, 6, having at its side an opening for the admission of the material to be cut, and at one side of its circumference one for its discharge leading to the spout 7, which spout may extend to the height and distance required by its particular location and the material to be cut. The arms of the spider project from the axial line of the shaft 3' at a

right angle, the body of the arm, the length of that portion upon which the cutting-knives are secured, being thin in a direction parallel with said shaft. Both arms and cutters are curved in the plane of their rotation, the outer curve of which precedes in their revolution.

Upon the extremity of the arms 4, integral with them, are enlargements 4', which both give the necessary momentum or force to the knives when rapidly revolved to withstand the shock caused by their cutting action, and serve as beaters to separate the dust from the material being cut, and also produce a strong current of air within the case 6, which, with the force given to the cut material by the rotary motion of the knives, carries both the feed and dust in the direction the knives are revolved and out through the spout 7, depositing the feed at a distance from the machine proportionate to the speed at which the cutters are revolved, and the dust and lighter foreign substances at a distance beyond, and leaving the feed comparatively clean.

The superiority of a spider for carrying the cutters over a wheel having a rim in a feed-cutter within a circular case lies in the absence of any obstruction to the free exit of the cut material, there being no corners or obstructions caused by the rim to prevent the ready escape of all the cut material. The hay or straw cannot accumulate around its circumference, producing friction upon the walls of the case and retarding its speed. It also has the advantage of producing an equally strong current of air within the case with a less amount and weight of material, thus diminishing the cost of its construction and the friction on bearings 3 3.

The circular case 6 not only confines the air for the formation of a powerful current necessary for the separation of the dust from the material being cut and their deposition in the desired locality, but also serves as a complete protection against injuries from the revolving cutters to the operators while in the performance of their duties about the machine. The revolving and cutting mechanism being completely incased within the case 6, no part is exposed by which the operator may receive injuries by coming in contact therewith.

The shaft 3' may be revolved by a person

turning it with a crank on its extremity, another person feeding the hay or straw to the cutters through the opening 8' in the box 8; or it may be driven by horse, steam, or other power applied in any convenient manner, and the hay or straw assisted to enter the opening 8' by means of feeding devices in the box 8, which are operated in any of the numerous methods in use, or may be adapted to the particular conditions of their constructions, or to the material to be cut. It is more particularly designed for what is termed a "power" feed-cutter, and where large quantities are to be cut, the feed when cut being then piled in a large pile at a considerable distance from the cutter, and obviating the necessity of an attendant for that purpose. It thus substitutes steam or animal power for manual labor, adds to the rapidity with which the work may be accomplished, to the safety of the limbs and lives of the operators, to the convenience in being able to accumulate a large quantity in a place, to the purity and value of the feed, and lessens the cost of producing these results.

I am aware of the inventions—the English patents, Johnson's of 1883, April 20, No. 2,010; Sawdon's of 1802, July 23, No. 2,637; Archer's of 1851, January 11, No. 13,443, and Ameri-

can patents, N. McLeod of February 15, 1870, No. 99,931, and R. B. Humphrey of June 9, 1885, No. 309,928—and do not claim, broadly, a revoluble spider or rimless wheel having cutters secured to its arms; neither do I claim a wheel having a rim and cutters secured to its arms and running within a circular case, it having openings for the admission and discharge of the material being operated upon; but

What I do claim is—

In a feed-cutter, the combination of a revoluble spider having the curved arms 4, and curved knives 5, secured upon the outer curve of the arms, said arms being thin the length of the knives in a direction transverse to their plane of rotation, and having their outer extremities extending beyond the knives and enlarged in the aforesaid direction and forming the fan-wings 4', surrounding said spider, with the circular case 6, having the opening 8' in its side and the elevating discharge spout 7 in its circumference, all arranged and operating substantially as described.

ORTON C. LITTLE.

Witnesses:

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