

No. 751,696.

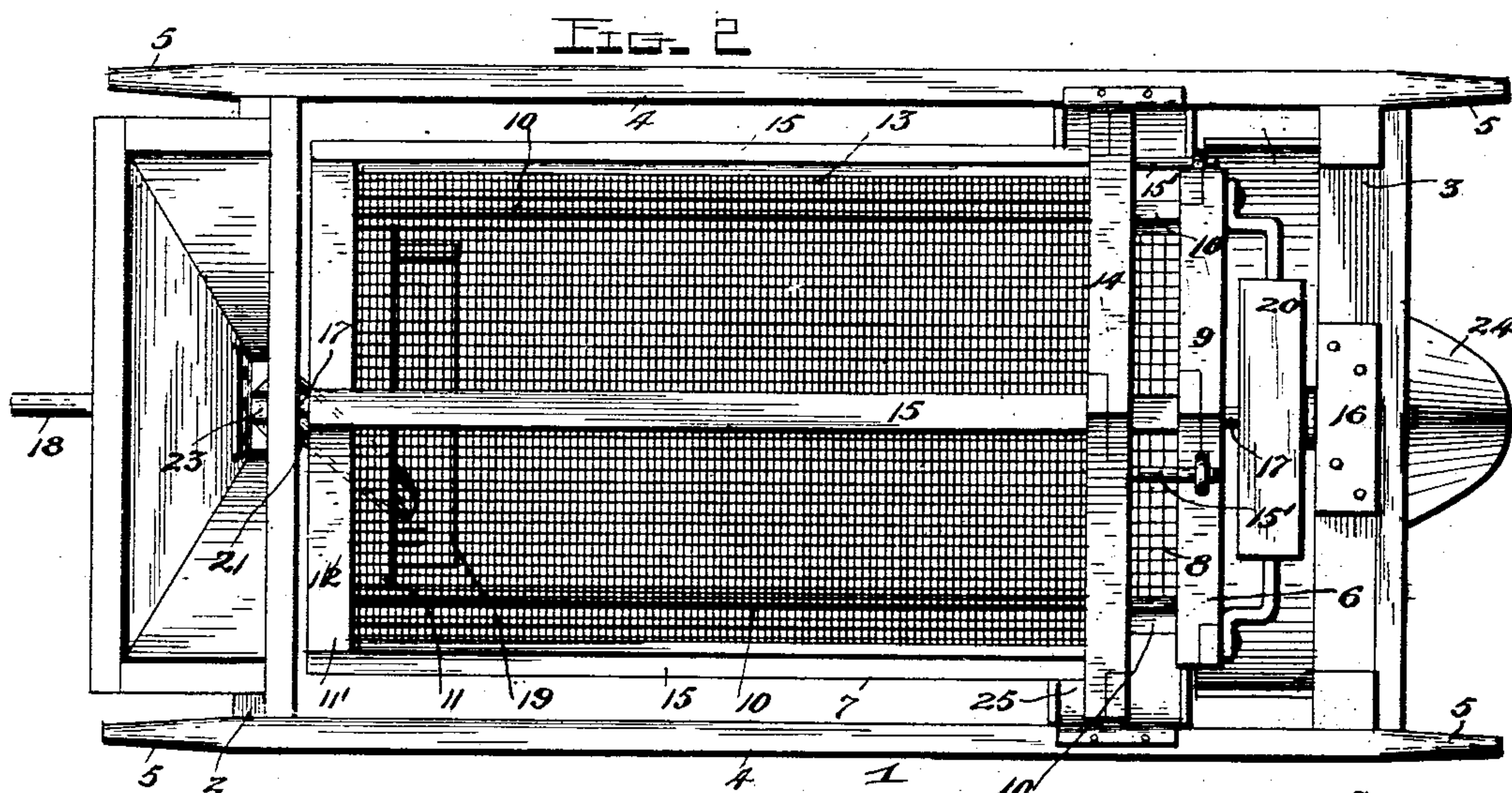
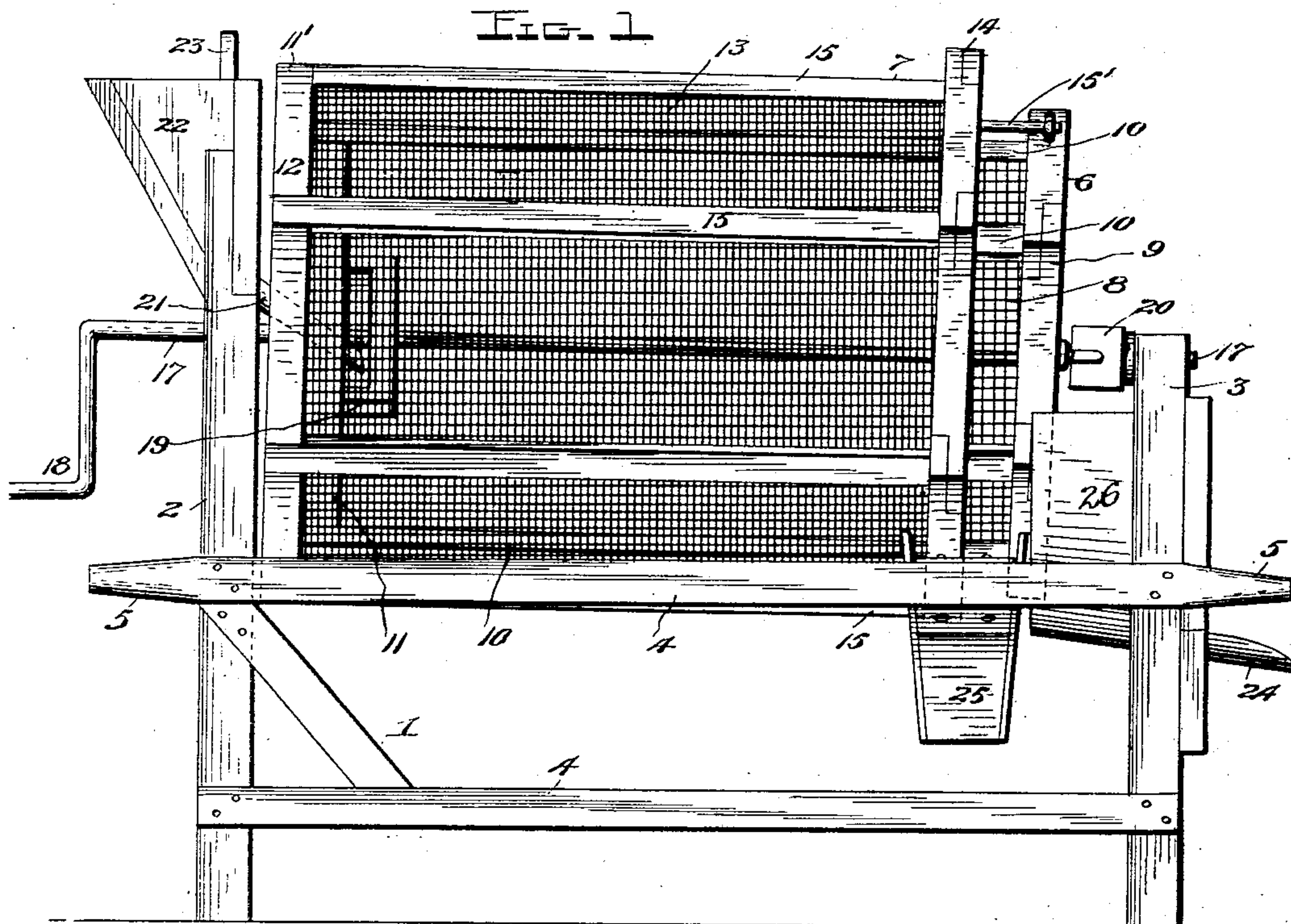
PATENTED FEB. 9, 1904.

F. S. & C. T. SNAVELY.
GRAIN GRADING AND SEPARATING MACHINE.

APPLICATION FILED DEC. 12, 1901.

NO MODEL.

2 SHEETS—SHEET 1.



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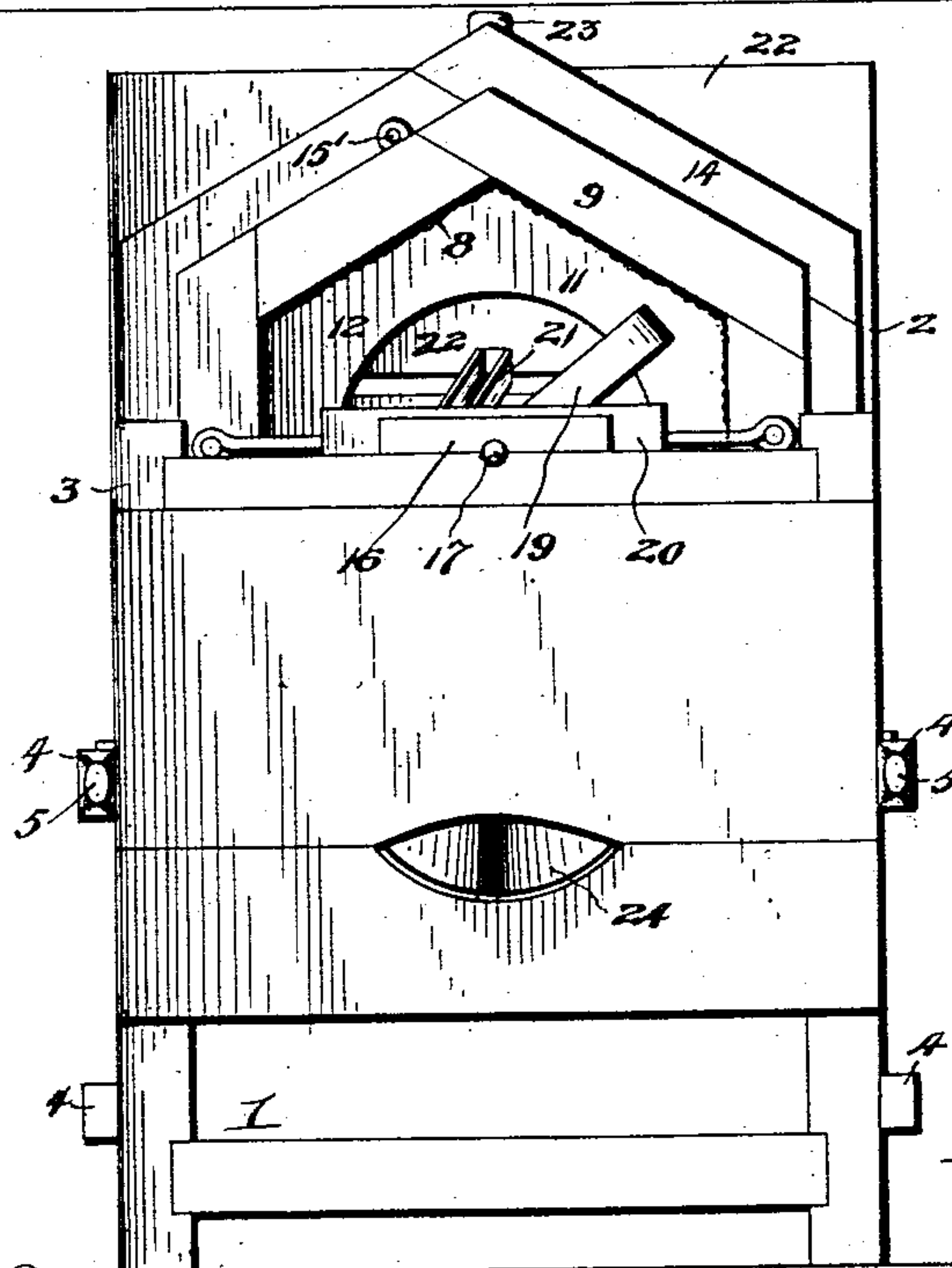
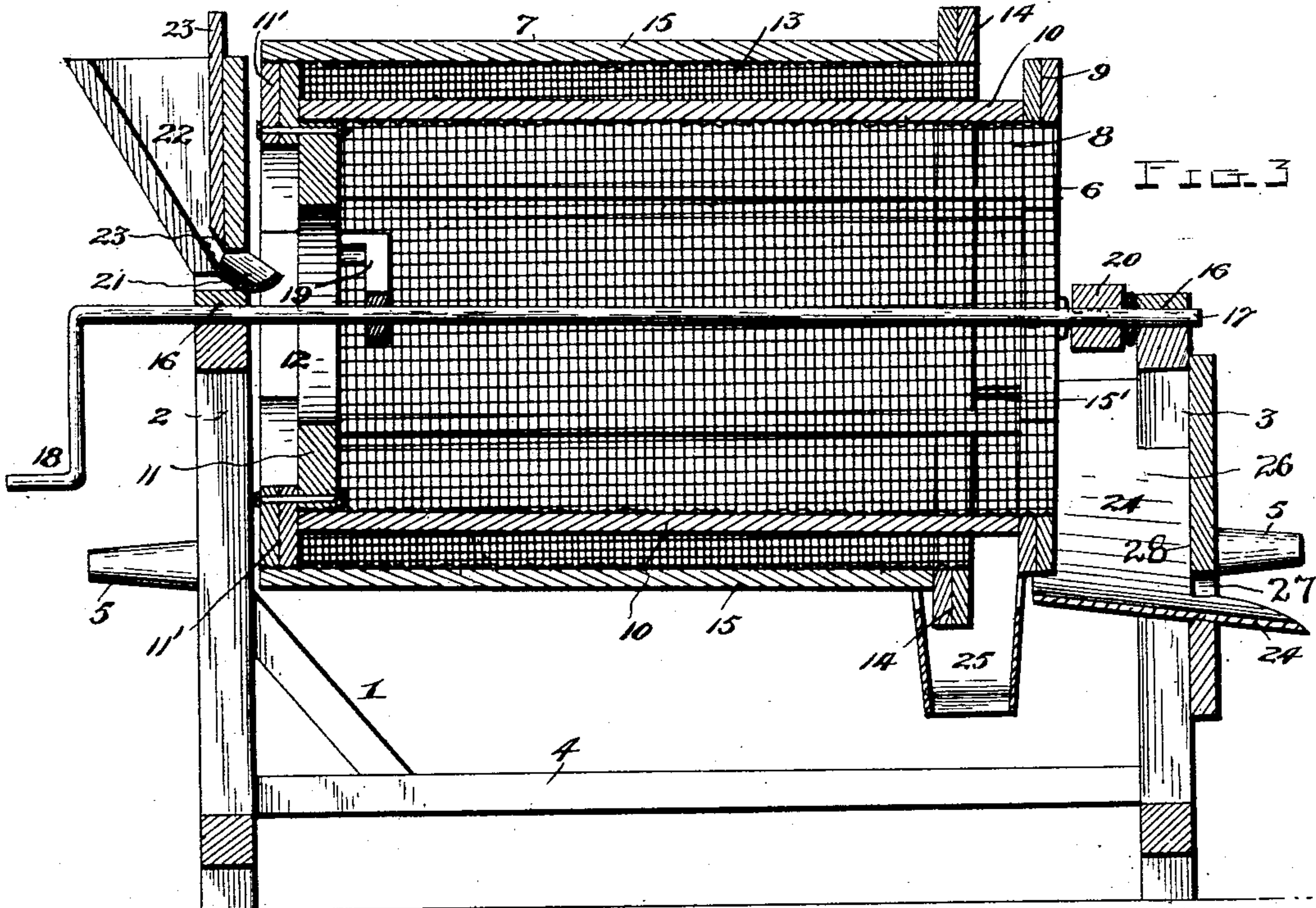


FIG. 4

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UNITED STATES PATENT OFFICE.

FERDINAND S. SNAVELY AND CHARLES T. SNAVELY, OF MARION,
VIRGINIA.

GRAIN GRADING AND SEPARATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 751,696, dated February 9, 1904.

Application filed December 12, 1901. Serial No. 85,541. (No model.)

To all whom it may concern:

Be it known that we, FERDINAND SPRINKLE SNAVELY and CHARLES TAYLOR SNAVELY, citizens of the United States, residing at Marion, in the county of Smyth and State of Virginia, have invented certain new and useful Improvements in Grain Grading and Separating Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a grain grading and separating machine.

The object of the invention is to provide a machine of this character which is simple of construction, comparatively inexpensive of production, and by means of which wheat and other grains may be conveniently graded as to size and separated from cheat, cockle, and other refuse.

With this and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in certain features of construction and combination and arrangement of parts, which will be hereinafter more fully described, defined in the appended claim, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the machine. Fig. 2 is a top plan view. Fig. 3 is a vertical longitudinal section. Fig. 4 is a rear end elevation.

Referring now more particularly to the drawings, the numeral 1 represents a suitable frame comprising in its construction end portions 2 and 3, connected by longitudinal side bars 4, arranged in pairs, the upper bar of each pair being provided at its ends with hand-grips 5 for convenience in transporting the machine from place to place.

Mounted between the end portions of the frame is a grading and separating mechanism, the same comprising an inner rotary octagonal screen 6 and an outer similarly-shaped screen 7, the two screens being arranged concentric with each other and separated by an intervening space, forming a channel for the flow of the second-grade wheat or grain from one

end of the machine to the other and the discharge of the cheat, cockle, and other refuse.

The inner screen 6 is made up of a wire body portion 8, attached to a frame composed of an outer octagon-shaped head 9 and longitudinal bars 10, said bars being secured with the wire at their inner ends to the inner octagonal portion 11 of a duplex head 12. The outer screen 7 is similarly composed of a wire body portion 13, attached to a frame formed of an outer or rear end octagonal head 14 and longitudinal bars 15, the wire and bars being connected at the inner end of the screen or cylinder to the outer octagonal portion 11' of the said duplex head. As stated, the octagonal screens thus formed are separated to form between them a space or passage, and to maintain the parts in proper relation and support and brace the outer ends of the two screens braces 15' are provided to connect the two outer octagonal heads of the screens. The braces 15' are rigidly secured to the inner surface of the head of the outer screen and project longitudinally of the screens outward to and are secured by means of staples to the outer surface of the head of the inner screen, said heads being annular. By making the braces round or of rods and extending them outward in this manner they offer the least obstruction to the escape of the grain from the outer screen. The inner screen projects beyond the outer one to form a space or passage for the discharge of the second-grade wheat, and its body portion is composed of wire of comparatively coarse mesh, while the body portion of the outer screen is composed of wire of a relatively finer mesh. Journaled in bearings 16 in the end portions 2 and 3 of the frame is a shaft 17, which is provided at its forward end with a crank 18 or other suitable device for operating it and has fixed thereto two cross-bars 19 and 20, which are suitably attached at their ends to the smaller member of the octagonal duplex head and to the outer octagonal head of the inner screen, whereby the two screens are mounted to rotate with said shaft. The cross-bars 19 are also preferably formed from rods which will offer the least obstruction to the escape of the grain

from the inner screen, and by bending their outer ends into a double angle or crank form the cross-bar 20, which is preferably in a block form and supports their inner ends, can be located beyond the plane of the end of the inner screen, and thereby be out of the path of any grain or foreign substance which might be carried up by the rotating screen and let fall and lodge thereon.

10 The duplex head has formed therein an opening through which projects a spout 21, extending from a hopper 22, mounted upon the front end portion 2 of the frame and having a valve 23 for controlling the flow of wheat there-
15 from to the spout, which conducts it into the forward end of the inner screen. At the rear end of the frame are arranged two spouts 24 and 25, one of which is designed to receive the first-grade wheat from the inner cylinder
20 and the other the second-grade wheat from the outer cylinder.

The spout 24 comprises a semicylindrical main portion 26, which partially surrounds the end of the inner screen and the spout portion which projects through an opening 27 in the closed end 28 of the frame. This prevents the escape of the grain laterally or longitudinally and causes all of it from the inner screen to pass through the spout 24.

30 The spout 25 is substantially trough-shaped in cross-section and partially surrounds the end of the outer screen and has its ends secured to and supported by the side bars 4. The outer side of the trough extends out to
35 and lies substantially in the plane of the head of the outer screen, said head forming a flange which acts as an abutment and deflects any grain back into the spout 25 that would otherwise enter the inner end of the spout 24 and
40 be discharged with the better grade of grain.

In the operation of the apparatus the grain is fed from the hopper to the forward end of the inner cylinder, its flow being controlled by the hopper-valve, and the shaft is then rotated to communicate motion to the cylinders, which are arranged at a slight angle of inclination to cause the grain to feed from the forward end of the machine to the rear end thereof by gravity and the motion imparted thereto by the rotation of said screen. The
45 first-grade wheat is retained by the inner screen, while the second-grade wheat, cockle, cheat, and refuse fall therethrough into the outer screen, which retains the second-grade
50 wheat, but separates therefrom the refuse, which falls therefrom down onto the floor or ground. The first-grade wheat feeds along the inner cylinder until it reaches the spout 24, while the second-grade wheat is discharged
60 from the outer cylinder into the spout 25.

The spouts may conduct the different grades of wheat to suitable receptacles.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of our improved grain grading and separating machine will, it is thought, be readily understood without requiring an extended explanation.

It will of course be understood that the machine may also be used for separating different kinds of grain and for other analogous purposes.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

In a grain grader and separator, a frame provided with handled side bars and having a hopper at one end and a perforation at the other, a crank-shaft journaled in the frame, a cross-bar adjacent each end thereof, the ends of the one at the outer end being crank-shaped rods, two polygonal-sided screens, each provided with a head at its outer end and secured to a compound head at the inner end, said compound head being secured to one of said cross-bars and the screen being arranged one within the other with the inner one projecting beyond the outer one and secured to the cranked ends of the outer cross-bar, and the head of the outer screen forming a flange, longitudinally-arranged rod-like braces secured to the inner surface of the head of the outer screen at the outer end and to the outer surface at the head of the inner screen, and two spouts, one at the outer end of each screen, the one at the end of the outer screen being substantially trough-shaped in cross-section with its ends secured to the handled side bars and its outer side located substantially in the plane of the flange of the outer screen, the main portion of the other spout being substantially semicylindrical and partially surrounding the outer end of the inner screen and having the spout portion projecting through said perforation in the end of the frame.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

F. S. SNAVELY.
C. T. SNAVELY.

Witnesses:

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