

(No Model.)

T. F. DAVIS.
FAN.

No. 491,407.

Patented Feb. 7, 1893.

FIG 1

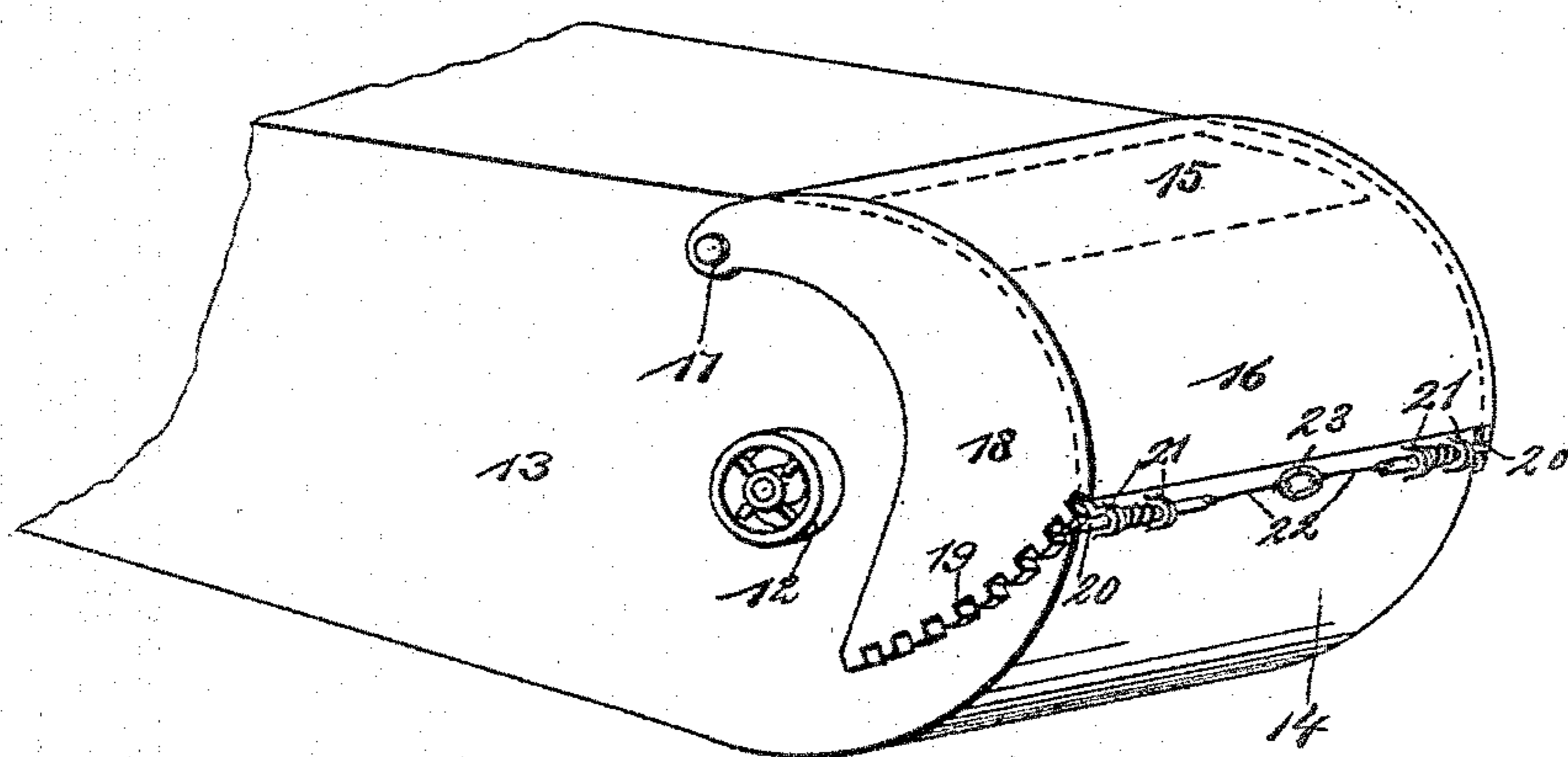
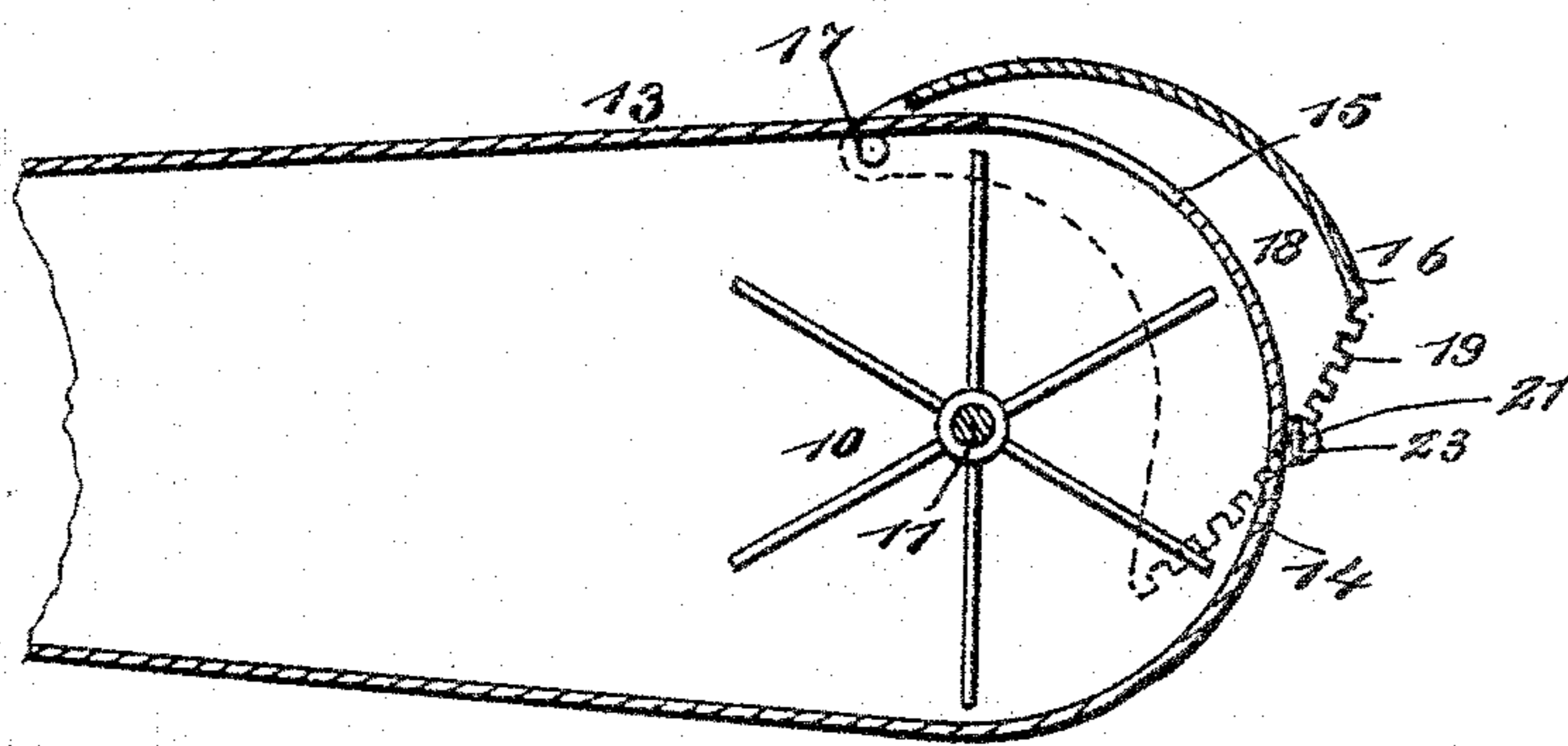


FIG 2



WITNESSES:

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SPECIFICATION forming part of Letters Patent No. 491,407, dated February 7, 1893.

Application filed June 28, 1892. Serial No. 438,313. (No model.)

To all whom it may concern:

Be it known that I, THEODORE F. DAVIS, of Marshalltown, in the county of Marshall and State of Iowa, have invented a new and Improved Fan, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of fans which are used upon grain separators to blow the grain and chaff upon and over the riddles and sieves. The fans which are usually employed for this purpose have their air openings at the sides, that is, around the driving shafts, and as a result, the most effective current of air is produced near the center of the fan so that there is an unequal current blown over the riddles or sieves, and the grain in the center of the fan-mill is likely to be blown entirely over the riddles, while at the sides it is not blown sufficiently hard and the grain is imperfectly cleaned.

The object of my invention is to produce a fan having an air opening the entire width of the fan blades and parallel with the axis of the fan, so that there is a perfectly equal and even current of air generated by the fan, and this enables the grain to be perfectly cleaned.

A further object of my invention is to construct a cap or damper for the opening, which may be nicely controlled so as to admit just the desired amount of air to the fan casing.

To this end, my invention consists in a fan, the construction of which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in both views.

Figure 1 is a perspective view of the fan embodying my invention; and Fig. 2 is a vertical section on the line 2—2 in Fig. 1.

The fan 10, is of the usual kind, and is carried by a shaft 11, which has a driving pulley 12 at one end. The fan is inclosed by a casing 13, which is made to deliver at the required point, and the casing has one end rounded, as shown at 14, and the fan is held to revolve in this rounded end and fits nicely therein. Near the end of the casing and above the fan, is a slot or opening 15, which extends the entire width of the casing, as shown by dotted lines in Fig. 1, and this open-

ing is covered by a swinging cap 16, which is hinged to the casing near the top, as shown at 17, and has side flanges 18 adapted to fit closely against the sides of the casing.

Any suitable mechanism may be used for holding the damper 16 in the required position, but the device shown is preferably employed.

On the end portion of the casing 13 and near opposite edges in a horizontal line, are sliding spring bolts 20 which move in keepers 21 and which are secured to inwardly extending wires or cords 22, and the latter are fastened to a common loop 23. The spring bolts are adapted to engage notches 19 in the lower edges of the flanges 18, and by pulling upon the loop 23, the bolts are withdrawn from the notches and by releasing the bolts their springs throw them into engagement with the notches. It will be seen that by adjusting this cap or damper 16, just the required amount of air may be admitted to the casing 13, and the air will be admitted alike to all parts of the fan. It follows, then, that the current of air forced outward from the casing 13 will be just as strong at the sides of the casing as in the center, and consequently the fan may be adjusted so as to clean the grain perfectly and blow the grain and chaff the required distance and no farther.

Where fans are used which have side openings and are attached to thrashing machines and separators used in the open air it is often impossible to use the machines in windy days, as the air is blown into the fan casing with such force as to render the currents within the casing so variable that no good result can be obtained from it, but with the construction shown and described above, a direct current of air cannot blow into the opening 15, but the required amount is drawn in by the movement of the fan.

In the drawings I have shown the opening 15 in the upper part of the casing, but it will be understood that for an under-shot fan, the opening will be produced on the under side of the casing.

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

1. The combination with the elongated casing closed at the sides and having a trans-

verse slot in one end of the fan held to revolve in the casing and the hood-like damper held to embrace the end of the casing and cover the slot, the damper being adjustable to and from the slot, substantially as described.

5 2. The combination with the elongated casing having closed sides and a transverse end opening, of a hood-like damper pivoted on the casing and arranged to swing over the open-

ing, the damper having side flanges to embrace the casing, and means for adjusting the damper to and from the opening in the casing, substantially as described.

THEODORE F. DAVIS.

Witnesses:

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