C. J. WIDMER.

CORN SHELLER.

APPLICATION FILED SEPT. 19, 1907.

905,259.

Patented Dec. 1, 1908.

2 SHEETS—SHEET 1.

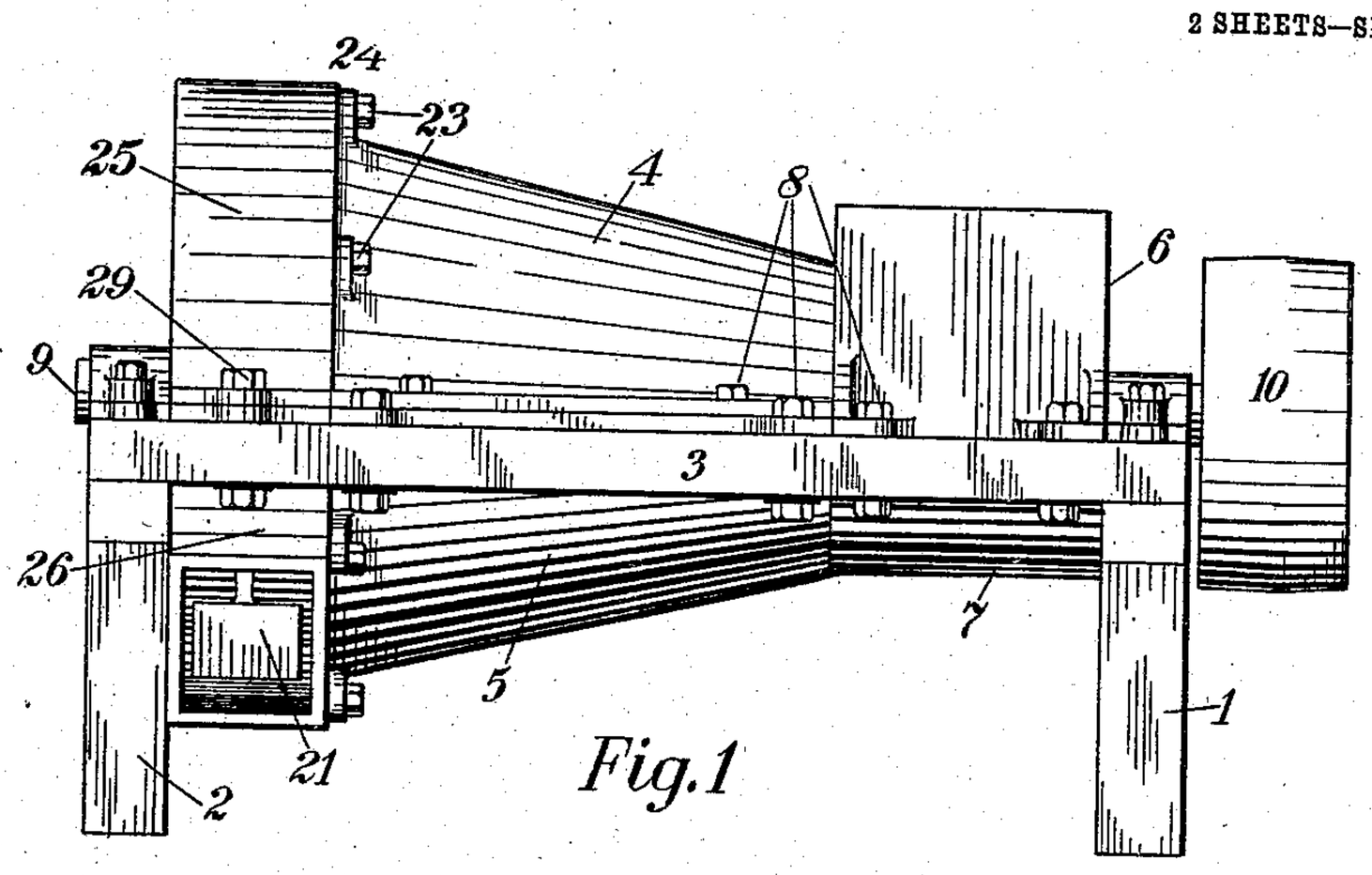

Fig. 1

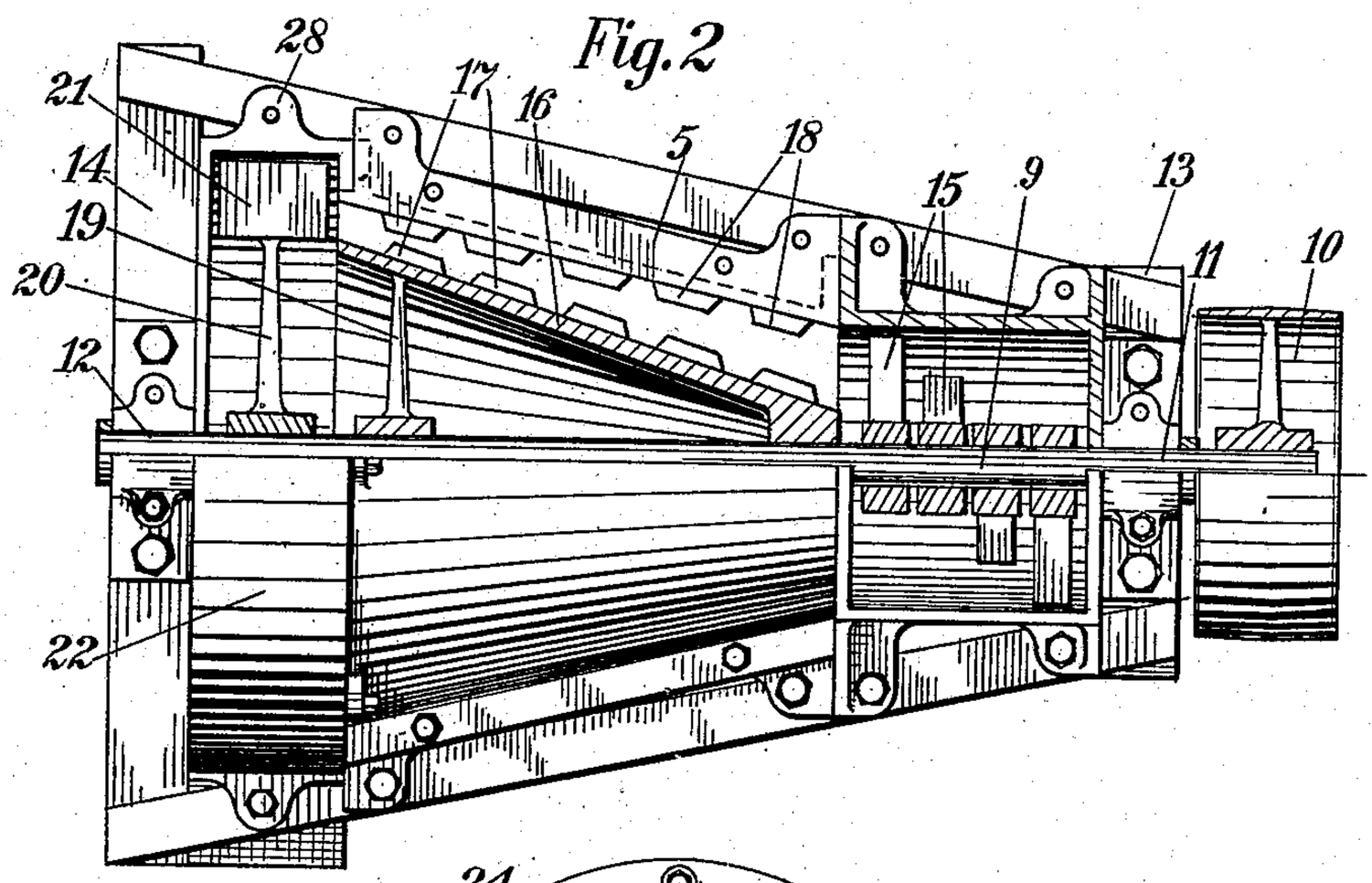

Fig. 2

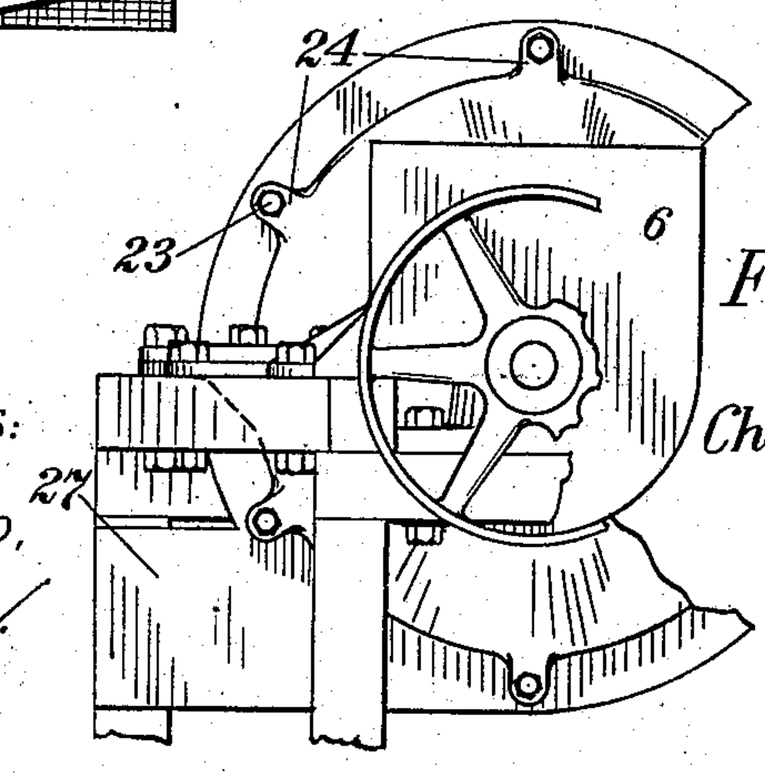

Fig. 3

WITNESSES:

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BY

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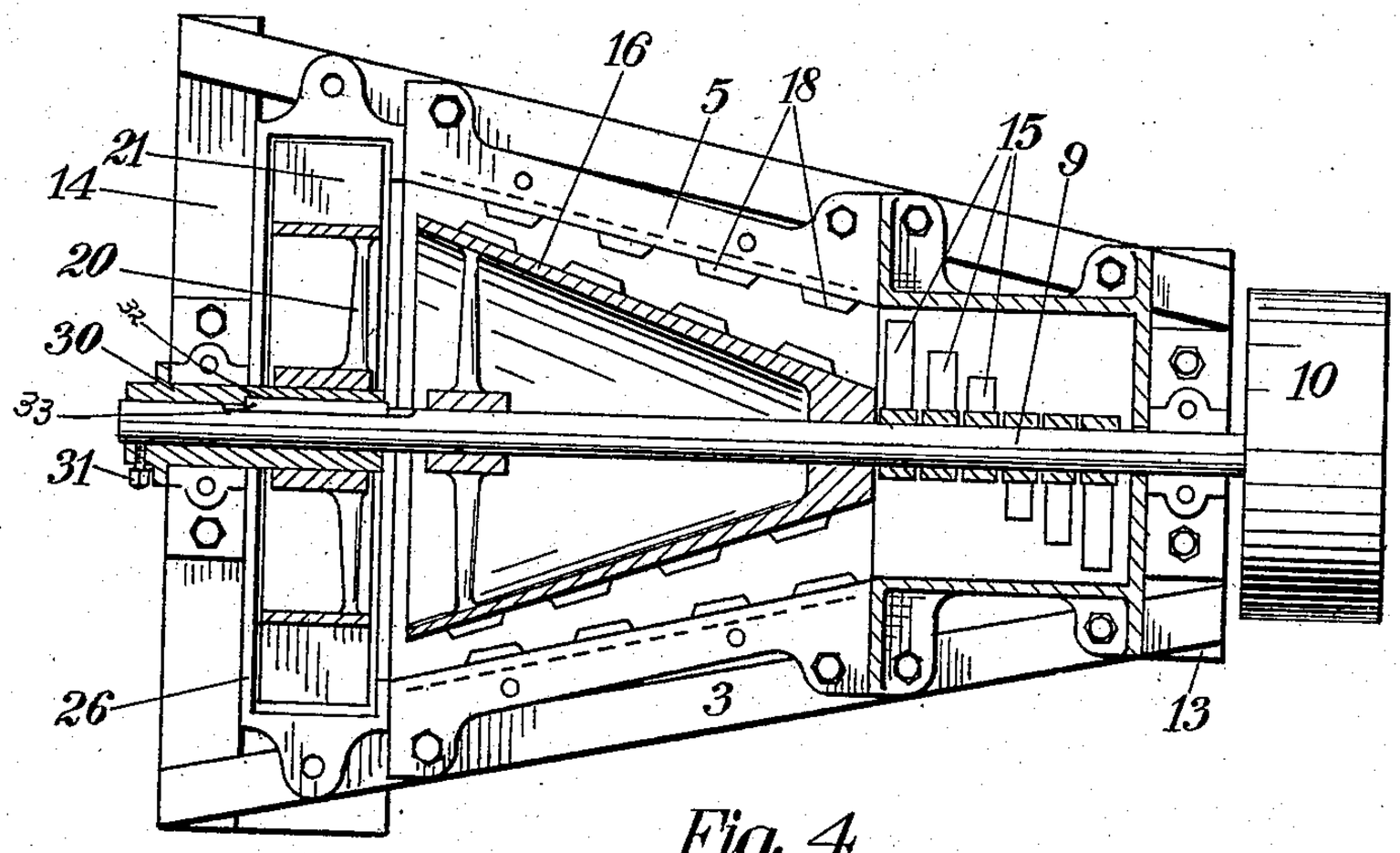

Fig. 4

Witnesses:
R. Rogers
C. Lager

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Attorney

UNITED STATES PATENT OFFICE.

CHARLES J. WIDMER, OF SIDNEY, OHIO, ASSIGNOR TO THE PHILIP SMITH MANUFACTURING COMPANY, OF SIDNEY, OHIO, A CORPORATION OF OHIO.

CORN-SHELLER.

No. 905,259. Specification of Letters Patent. Patented Dec. 1, 1908.

Application filed September 19, 1907. Serial No. 393,629.

To all whom it may concern:

Be it known that I, CHARLES J. WIDMER, a citizen of the United States, residing at Sidney, in the county of Shelby and State of Ohio, have invented certain new and useful Improvements in Corn-Shellers, of which the following is a specification.

My invention relates to improvements in a corn sheller, especially in reference to the construction and mounting of the fan, and the box in which said fan operates, and in the manner of securing together the casing members of the sheller and securing to these the circumferential box or fan chamber. It also includes provisions for adjusting the sheller inwardly and outwardly.

My construction enables me to overcome some potent objections to the corn shellers now in use, in that it provides a fan, and a circular chamber therefor which are easily separated from the sheller casing and may therefore be readily replaced or repaired, and I am further enabled to adjust the sheller member as required to attain the highest efficiency thereof, in view of the varying condition of the grain.

Reference being made to the accompanying drawings, Figure 1 is a side elevation of the corn sheller with my improvements made a part thereof; Fig. 2 is a horizontal longitudinal section through Fig. 1; Fig. 3 is an end view from the right of Fig. 1, showing especially the manner of securing the circumferential fan chamber to the casing; Fig. 4 is a view in section of a sleeve upon which the fan is mounted showing the arrangements for adjusting the sheller member.

In the drawings which are hereby made a part of the specification and in which the same reference numerals designate the same parts throughout, 1 and 2 are the upright frame members supporting thereon the beam 3, to which the casing members 4 and 5 and the hopper members 6 and 7 are secured preferably by means of the bolts indicated at 8; the sheller is mounted horizontally upon the frame members, and longitudinally through the center thereof extends the shaft 9, carrying at one end thereof the pulley 10, over which a belt is adapted to operate for driving the sheller.

The shaft 9 is journaled in the bearings 11 and 12 mounted in the frame members 13 and 14. Adjacent the bearing 11, is mounted the hopper formed of the upper portion 6, and the lower portion 7, in which are the feed members 15, mounted upon the shaft 9. The hopper at one end abuts against the casing members 4 and 5, which inclose the sheller member or conical portion 16 of the sheller. This conical portion is provided with a plurality of lugs 17 arranged on the convex surface thereof longitudinally, opposite to similar lugs 18 positioned upon the inner face of the casing members 4 and 5; the said lugs are separated by a short interval, so that when the corn has been fed outwardly from the hopper by the members 15, it will be carried upon the conical sheller portion and the grains will be removed from the cob through the contact of the latter with the opposing sets of lugs, the conical form of the sheller also operating to bear the corn forward towards the fan chamber. The spider 19 mounted upon the shaft 9 is arranged to support the flared end of the conical sheller.

Mounted upon the shaft 9 adjacent its outer end is the spider 20, at the ends of the arms of which are mounted plates or fan members 21; this spider 20, or as it may be called, the fan, is made separate from the remainder of the mechanism. This is an important feature in corn shellers, as the fan in operation is much more likely to be injured or broken than other parts of the mechanism, and my construction thereof separate from the remainder of the mechanism renders its removal possible whenever it may be desired, and upon being repaired it may be easily replaced on the shaft 9.

In order that the fan 20, may readily be removed from the shaft, I construct the circumferential fan chamber 22 separate from the casing, so that said fan chamber may be readily secured to the casing if desired, by means of the bolts 23, passing through the flanges 24 through the fan chamber. This chamber 22 is preferably made in two parts 25 and 26, the latter having a chute 27, provided thereon through which the corn is driven by the fan into a conductor. The sections 25 and 26 are secured to the frame pieces 3 by means of flanges 28 thereon through which are inserted bolts 29. In case access to the fan should be desired, the bolts 23 and 29 may readily be loosened and one of the sections lifted off quickly and easily; if injury has occurred to the fan, the latter may then be taken from the shaft

9. Not only are the removal and the positioning of the fan and the fan chamber more readily accomplished by forming the same separate from the rest of the mechanism, but the said parts are more easily constructed by forming the fan separate from the conical sheller member 16, and the fan chamber separate from the casing 5 when the fan has been broken, it is necessary only to remove the fan and repair the same, or provide a new one if necessary; if the fan were formed integral with the conical sheller member, a break in one would necessitate the replacing of the whole construction, or at least the removal of the whole construction from the fan casing. This is obviated in my construction; to remove the fan from the shaft, I disconnect the fan casing from the conical portion of the casing, and being formed in an upper and a lower section, its removal may readily be effected. Thereupon I may disconnect the framework at the end adjacent to the fan casing, and remove the fan outwardly off of the shaft, meanwhile supporting the remainder of the sheller construction by props or in any other convenient manner. The framework being bolted together and the casing being secured thereto by means of bolts, this process of disconnecting may be readily performed.

In Fig. 4 I show a modified form of construction designed for the purpose of giving the conical sheller member a movement longitudinally with the shaft whenever desired, while the fan is maintained in its central position in the fan chamber; the construction for accomplishing these purposes consists essentially in the provision of a sleeve 30 which is journaled in the frame member 14 adjacent the middle portion thereof, and which contains on its inner face a seat 32 adapted to receive the spline 33 which is positioned on the shaft 9. Adjacent its outer end the sleeve 30 is provided with the set screw 31 which passes through said sleeve and engages said shaft; if the set screw be loosened, the shaft may be moved longitudinally, thereby positioning the pulley 10 at a point somewhat farther removed from the frame member 13 than is shown in Fig. 4. Likewise, the feed members 15 being fixed on the shaft 9, will be moved with said shaft to occupy a position slightly to the right of that shown in Fig. 4; also, the sheller member 16, being fixed on the shaft 9, will move therewith. The movement of the shaft, therefore, causes an adjustment of the parts just noted either to the right or to the left, as desired; the important purpose to be accomplished by this longitudinal adjustment of the shaft and the parts noted, is the positioning of the conical sheller member 16 in the casing 4, 5, whereby the lugs or teeth 18 are positioned more closely to the lugs or teeth 17, or more remotely therefrom, as desired. This adjustment of the conical sheller member 16 is rendered useful and advisable by the condition of the corn or grain which is shelled, inasmuch as it is common experience that damp corn or grain will require a different adjustment of the shelling parts from that required by dry corn or grain. My improvement, therefore, provides for an adjustment to satisfy the condition of the grain.

As shown, the fan is mounted on the sleeve, which, being keyed to the shaft, is rotatable therewith; the use of the spline in connection with the grooved seat, renders it possible to slide the shaft longitudinally without disturbing the position of the sleeve; thus the fan is constantly in central position in the fan chamber.

Essentially, therefore, my improved corn sheller comprises the provision of a longitudinally adjustable shaft carrying fixed thereon the conical sheller member, which is consequently adjustable longitudinally in its casing, thereby providing for efficient operation for damp grain as well as for dry grain; this adjustment of the sheller member, while the position of the fan in the fan chamber remains the same, is an exceedingly important feature. Further, the fan is formed separate from the sheller member and may be removed from the shaft without removing the sheller member; further, the fan chamber or casing is formed independent of the sheller member casing, and is separable therefrom at the desire of the operator. The provision of separable parts for a corn sheller, combined with the adjustable sheller member, renders my improved sheller easily constructed and disassembled, and all parts are readily accessible; if any part should be broken or injured in use, it can readily be removed and a similar part supplied to replace the same, without replacing the entire sheller and fan construction, as is necessary where these parts are cast integral. In my construction, therefore, no matter what the condition of the grain may be, the sheller member may be adjusted to operate effectively thereon, and to remove the same forwardly, without leaving any residue as is inevitable in constructions where the sheller members are not adjustable longitudinally; although the sheller member is adjustable with the shaft in a longitudinal direction, yet the fan should always occupy a central position in the fan casing, and by constructing these parts separably from each other and mounting them on the shaft so as to admit of movement independently of each other, I greatly improve the construction and increase the efficiency of the operation.

What I claim is:

1. In a corn sheller comprising a frame, a hopper mounted thereon, a casing mounted

thereon, a fan casing also mounted on said frame, a longitudinally adjustable shaft journaled in said frame, a sheller member mounted on said shaft to be rotatable and adjustable therewith, a sleeve surrounding one end of said shaft, a fan in said fan casing carried by said sleeve, and means uniting said shaft and sleeve whereby said fan is rotatable with said shaft and removable therefrom independently of said sheller member.

2. In a corn sheller comprising a frame, a sheller casing carried by said frame, a fan casing carried by said frame, a sleeve mounted on said frame, a shaft having one end journaled in said frame and the other end mounted in said sleeve and constructed to be adjustable longitudinally of said frame, a sheller member borne upon said shaft and adjustable therewith longitudinally in said sheller casing, and a fan borne upon said sleeve centrally in said fan casing and rotatable with said shaft, whereby said sheller member may be adjusted without disturbing the position of said fan.

3. A corn sheller comprising a frame, a shaft rotatably mounted thereon and bearing a feed member, a sheller member, and a fan member thereon, a casing for said fan member formed independently of the casing for said other members and adapted to be removably secured thereto, and an intermediate bearing member upon said shaft upon which said fan is mounted, whereby the shaft may be longitudinally adjusted independently of any movement of said fan, and means for engaging said bearing member with said shaft to be actuated thereby.

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

CHARLES J. WIDMER.

Witnesses:
B. D. Heck,
M. J. Young.