

(No Model.)

W. H. HILL.  
GRAIN DAMPENER.

No. 539,812.

Patented May 28, 1895.

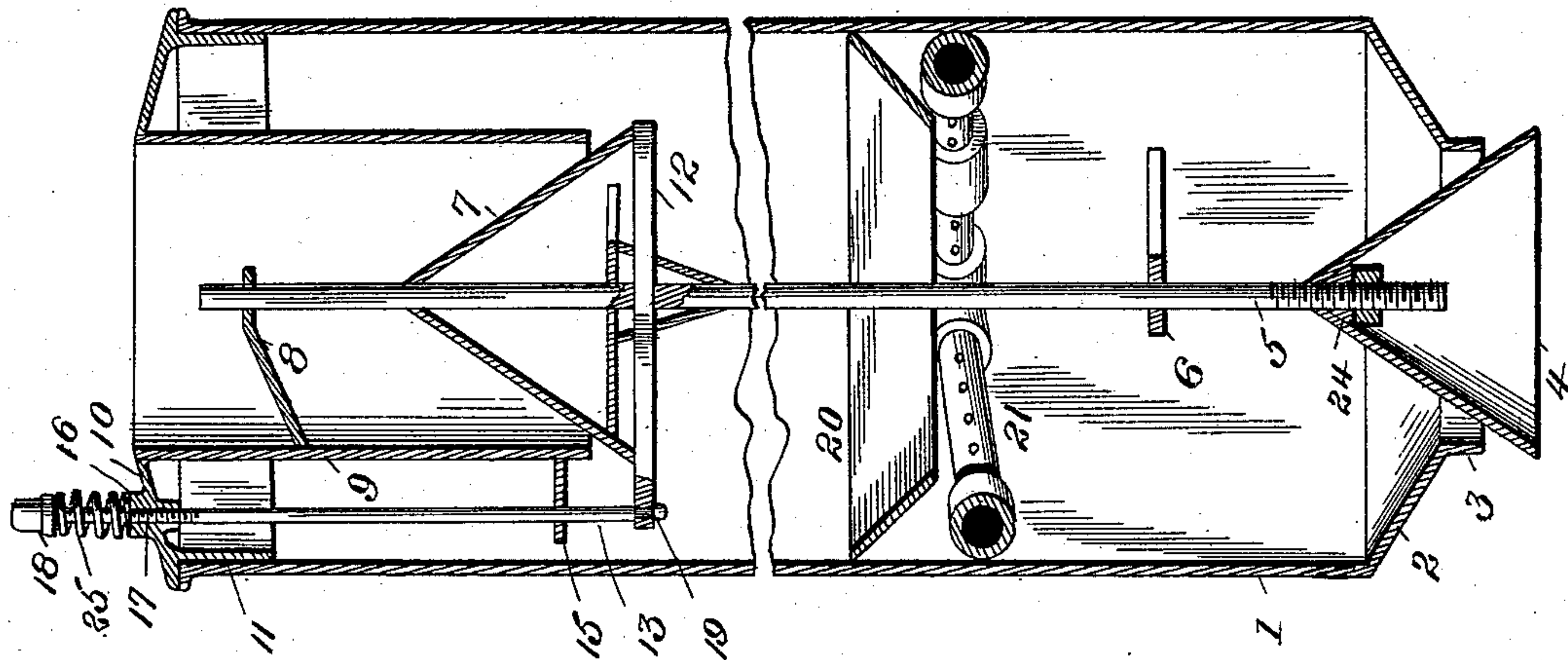


Fig. 2

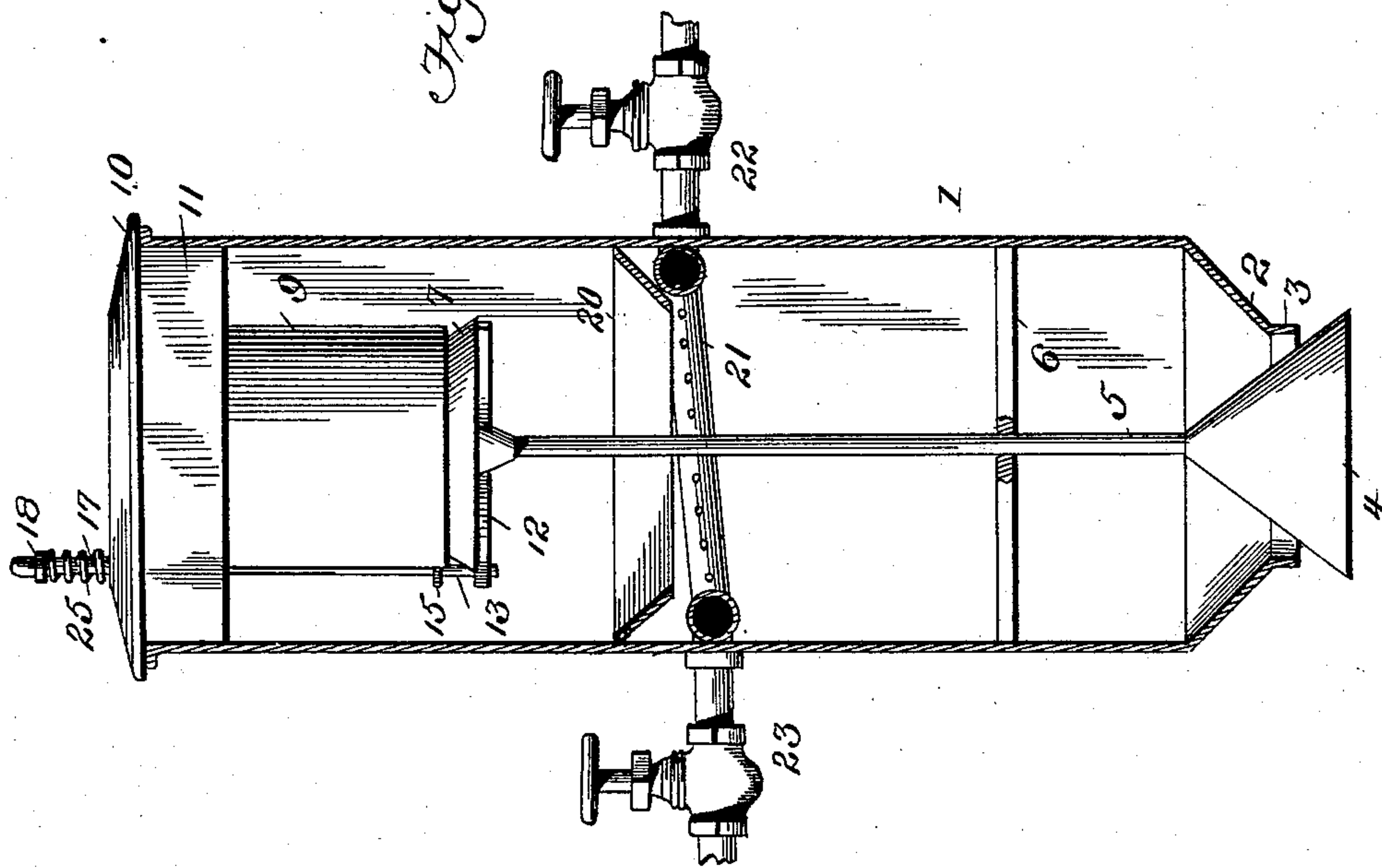


Fig. 1

Witnesses

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# UNITED STATES PATENT OFFICE.

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## GRAIN-DAMPENER.

SPECIFICATION forming part of Letters Patent No. 539,812, dated May 28, 1895.

Application filed September 6, 1894. Serial No. 522,281. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. HILL, a citizen of the United States, residing at Cleveland, Ohio, have invented certain new and useful Improvements in Grain-Dampeners, of which the following is a specification, reference being had therein to the accompanying drawings.

This improvement is designed mainly to provide grain dampeners with a feeding device that will be regular and positive in its action and not likely to get out of order.

To these ends the invention consists in the peculiar construction, arrangement and combinations of parts hereinafter more particularly described and then definitely claimed.

In the accompanying drawings, Figure 1 is a side view of a dampener constructed according to my improvement, with one side of the case removed. Fig. 2 is a central vertical section on a larger scale, taken diagonally to the view shown in Fig. 1.

Referring to the details of the drawings by figures, 1 represents the casing, which may be either square or round, in horizontal section, terminating at the bottom in a short inclined flange 2, at the lower end of which is a short tube or ring 3, which partly incloses a cone 4, screwed onto a spindle or rod 5, which passes through a guide 6 in the case, and carries near its upper end another cone 7. Its extreme upper end passes through a guide or spider 8, set in the tube 9, which is connected to a cap 10, having a flange 11, fitting tightly inside the casing 1.

Securely fastened to the under side of the cone 7 is a bar 12, which extends across to and receives a rod 13, working through a guide 15 attached to the tube 9, and a nut 16 secured to the cap 10, said rod being threaded at 17 to fit the thread of said nut. A knob 18 is provided at its top to enable it to be readily turned, and a spiral spring 25 is set between said knob and the cap to prevent the rod turning too easily and so accidentally changing the position of the cones 4 and 7. The lower end of the rod 13 is grooved at 19, and thus forms a support for the bar 12 and the parts immediately connected therewith.

On the inside of the casing 1, about the cen-

ter of its length, is secured a deflecting flange 20, beneath which is set a ring of perforated pipe 21, provided with an inlet valve 22, through which the steam is admitted, and a second valve 23, through which the condensed water may be discharged—the perforated pipe being set slightly inclined, so that the condensed water will readily run out through said valve 23.

At the under side of the cone 4 is a locking nut 24, by which said cone will be retained in the desired position when once set.

The operation of dampening grain is so well understood that description thereof is hardly necessary, and it is sufficient to say that the grain enters at the top, and falling on cone 7 is spread thereby, passing through the circular passage formed between the tube 9 and said cone 7, and as it descends it is dampened by the steam issuing from the perforated pipe 21—the deflecting flange 20 compelling it to pass inside of the ring of perforated pipe. The grain passes out at the bottom between the ring 3 and cone 4. By the peculiar arrangement of the two cones supported by the same rod they both move simultaneously, and so when it is required to increase or diminish the feed by moving the top cone, the lower one is moved simultaneously, so that the inlet and outlet of the grain are always adjusted in a corresponding degree by simply turning the rod 13.

I deem it important that the inlet and outlet be of substantially the same size, or (what is essentially the same thing) that the valve governing the inlet and outlet shall be so arranged as to allow substantially the same amount of grain to pass out as passes in, so that although the grain passes freely through the casing, the inlet and outlet are almost entirely closed by the grain passing through, and thus there is but little escape of steam through said inlet and outlet, and consequently the space within the casing is kept thoroughly permeated with it, with but little loss thereof.

As it is necessary that the lower opening should be varied to some extent according to the nature of the grain, as some kinds of grain will swell more than others, the lower



cone can be adjusted separately by turning it on the rod 5, and fixing it in the desired position by turning the nut 24.

I do not limit myself to the exact construction here shown, as it is evident that changes may be made without departing from the spirit of my invention.

What I claim as new is—

1. The combination of a casing, having an inlet for the grain, and a valve governing the inflow of said grain, of an outlet for the grain of substantially the same size as the inlet, and a second valve governing the size of the passage for the egress thereof, said valves being connected together to move simultaneously, substantially as described.

2. The combination with a casing, having an inlet for the grain, and a valve governing the inflow of said grain, of an outlet for said grain of substantially the same size as the inlet, and a second valve governing the size of the passage for the egress thereof, said valves being connected to move simultaneously, and one being adjustable independently of the other, substantially as described.

3. The combination with a casing 1, having an inlet and outlet for the grain, both of sub-

stantially the same capacity, of inlet and outlet cones 7 and 4, connected together by the spindle 5 and governing the ingress and egress of the grain, a bar 12 connected with one of said cones, and a threaded rod 13 engaging with said bar 12, for positively adjusting both cones simultaneously and equally, substantially as described.

4. The combination with a casing 1, having a contracted outlet 3, of a cone 4 working therein, a cap 10 fitting the top of the casing, a tube 9 of the same capacity as the outlet depending from the cap, a cone 7 set in the bottom of the tube, and connected to cone 4, a threaded rod 13, and a bar 12 connected to said rod and with the cones 4, 7, for simultaneously adjusting both of said cones and positively holding them in any fixed or desired position, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 3d day of September, 1894.

WILLIAM H. HILL.

Witnesses:

SAMUEL D. DODGE,

JOSEPH S. BERNHARD.