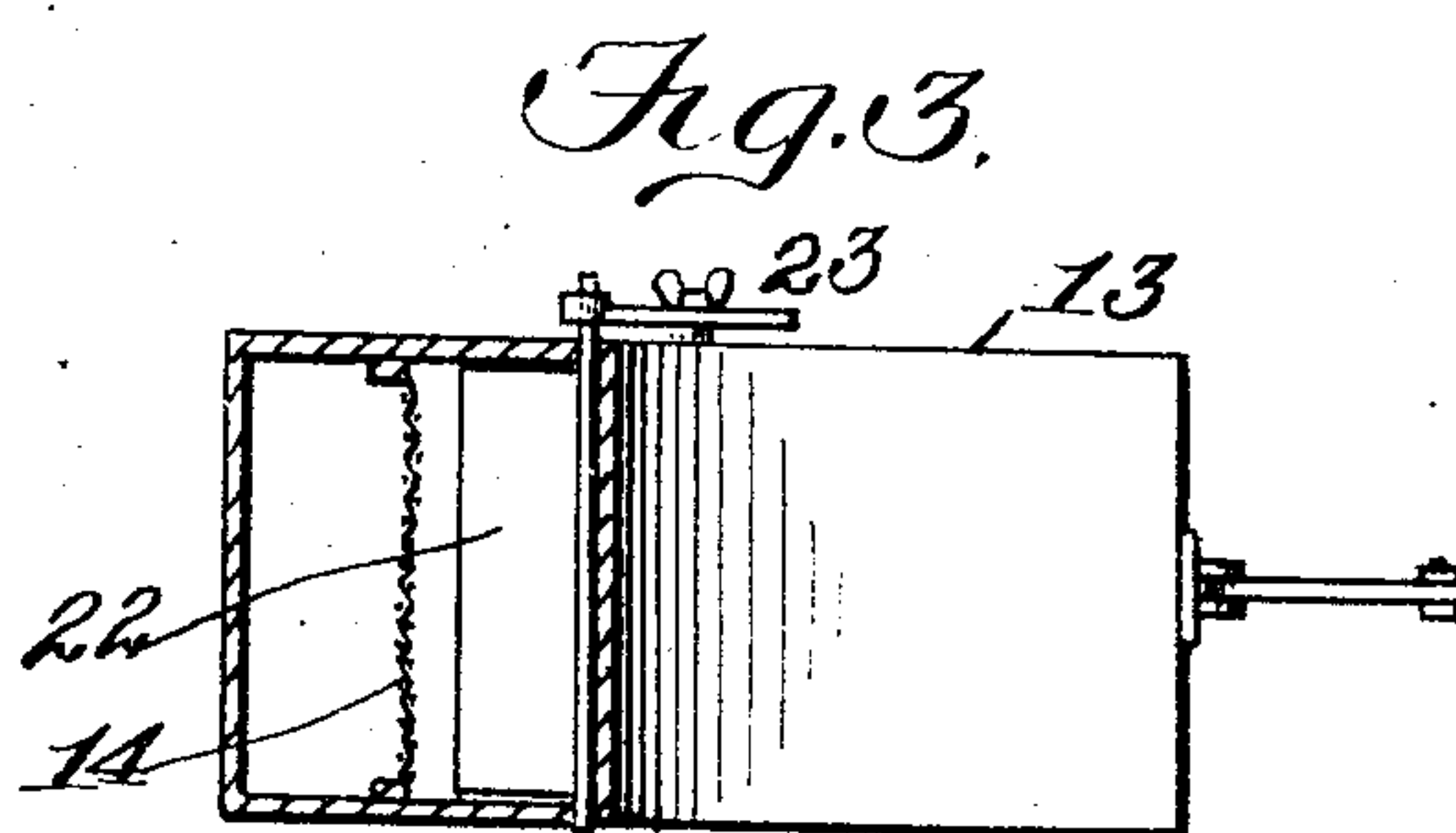
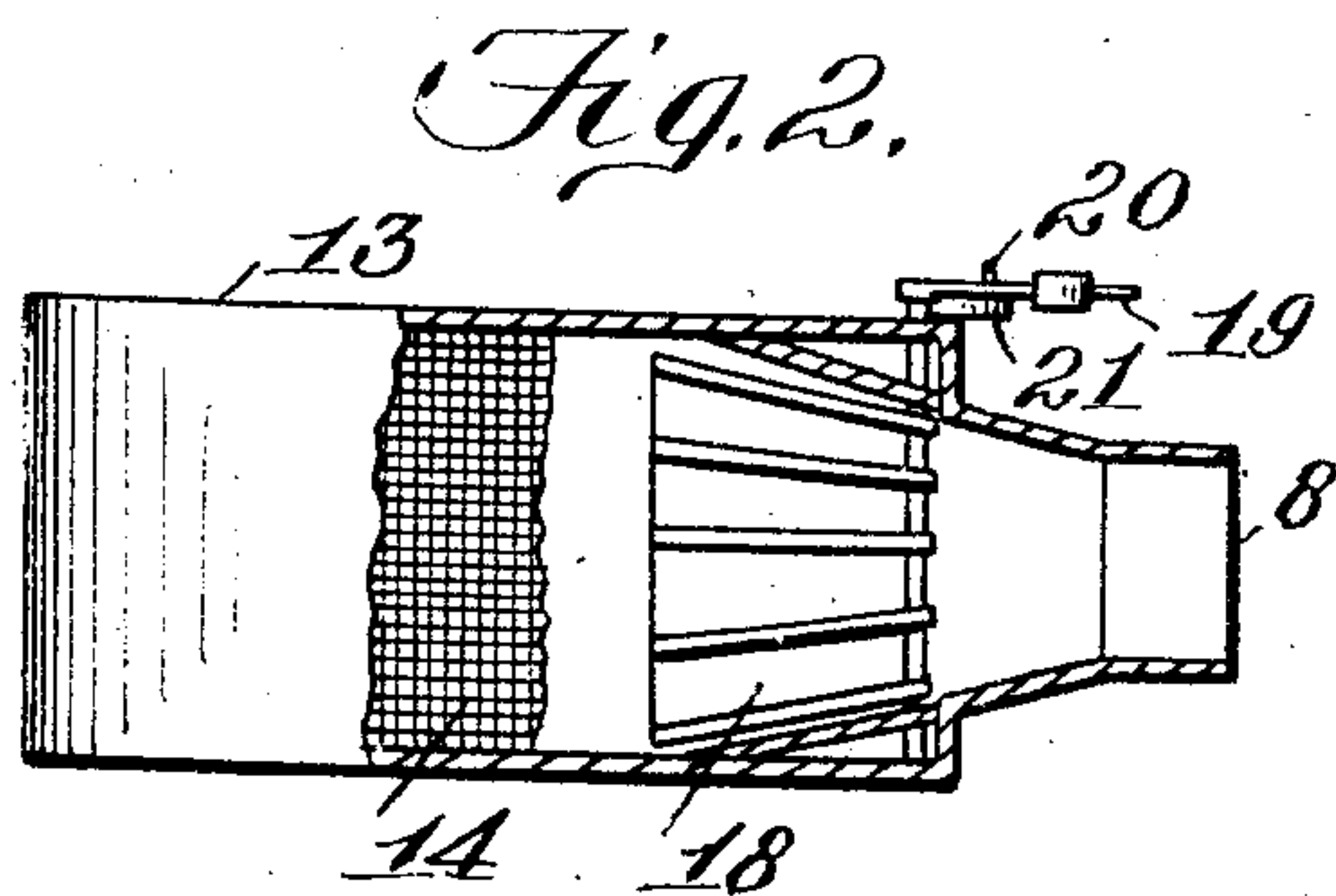
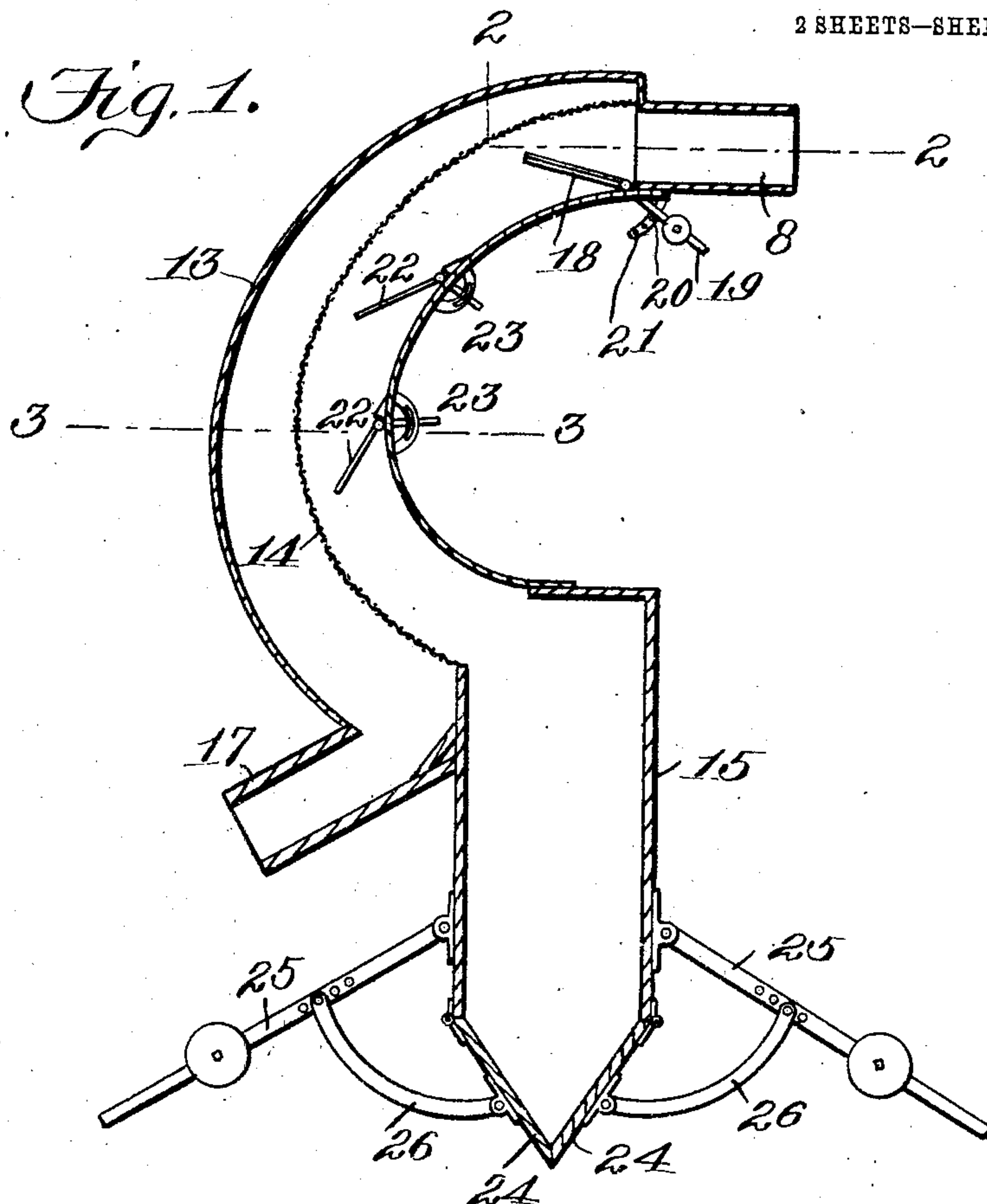


No. 786,184.

PATENTED MAR. 28, 1905.

C. R. BENEFIELD.
COTTON SEED CLEANER.
APPLICATION FILED MAR. 1, 1904.

2 SHEETS—SHEET 1.



Witnesses:
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James L. Morris.

Inventor
Chauncey R. Benefield
By James L. Norris.

57th

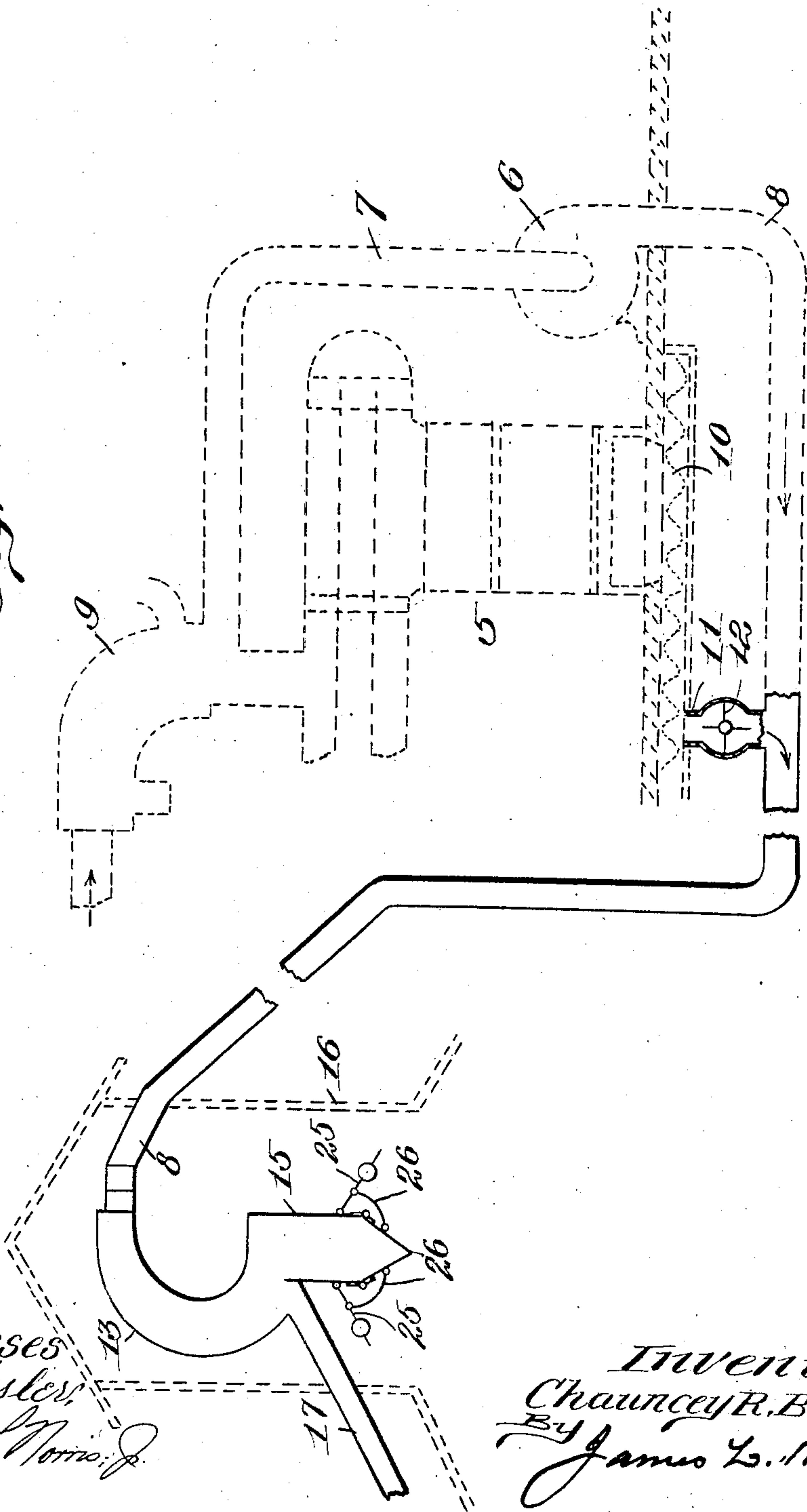
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2 SHEETS—SHEET 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

CHAUNCEY R. BENEFIELD, OF DALLAS, TEXAS.

COTTON-SEED CLEANER.

SPECIFICATION forming part of Letters Patent No. 786,184, dated March 28, 1905.

Application filed March 1, 1904. Serial No. 195,962.

To all whom it may concern:

Be it known that I, CHAUNCEY R. BENEFIELD, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented new and useful Improvements in Cotton-Seed Cleaners, of which the following is a specification.

This invention relates to a cotton-seed cleaner, the object of the invention being to provide an apparatus of this character which will effectually and thoroughly separate the dust, sand, and objectionable matter from the mass containing the cotton-seed.

I have selected for illustration in the accompanying drawings, forming a part of this specification, one simple and convenient embodiment of the invention which I employ in combination with a ginning apparatus. In this case I use the blast of air which is employed to carry the mass containing the cotton-seed from the gin or gins to direct such mass against a screen, sieve, or its equivalent in order to facilitate the separation of extraneous matter from said seed, whereby the latter on leaving the apparatus will be found in a clean or scoured condition.

From the foregoing it will therefore be obvious that I use the cotton-seed-feed air-blast to facilitate the separation of foreign matter from the seed. In this way I avoid the use of independent machinery for scouring the cotton-seed.

Referring to the hereinbefore-mentioned drawings, Figure 1 is a sectional side elevation of the cotton-seed-cleaning mechanism *per se*. Figs. 2 and 3 are sectional plan views taken on the lines 2-2 and 3-3, respectively, of Fig. 1. Fig. 4 is a diagrammatic view showing the cleaning mechanism combined with a ginning apparatus and its associated parts, the ginning apparatus and certain associated parts being shown in dotted lines.

Like characters refer to like parts throughout the several figures.

In Fig. 4 I have represented by dotted lines ginning mechanism, which may comprise one or a battery of gins, as 5. A fan is represented at 6, a suction-pipe 7 leading into the fan-casing, while a blast-pipe 8 leads from such casing. The upper end of the suction

pipe or flue 7 is connected with the usual vacuum-box 9, from which latter the cotton passes to the gin or gins 5. The seed or mass containing the cotton-seed falls from the gin or gins onto an auger or feed-screw 10, by which it is fed by way of the conduit or short pipe 11 to the blast pipe or flue 8, hereinbefore described, the direction of the air-currents through the latter being indicated by the arrow in said Fig. 4. The pipe 11, which connects the casing for the feed auger or screw 10, is provided interiorly with a sealing device, as 12, mounted for rotation in only one direction and consisting of a pocketed wheel, the mass containing the cotton-seed dropping onto the blades of the wheel from the casing of the auger 10 and by its weight serving to rotate said wheel to permit the gravitation of the mass into the blast pipe or flue 8, whereby the said mass can be projected toward the cleaning mechanism. (Shown most clearly in Figs. 1 to 3, inclusive.)

Referring more particularly to Fig. 1, it will be seen that the delivery or outer end of the blast-pipe 8 opens into the casing 13, represented as being of segmental or arcuate form and inclosing, as will hereinafter appear, a screen or sieve of approximately similar shape. The screen or sieve is denoted by 14, and it is made of the material usually employed for separating foreign matter from seed, it being practically coextensive with the casing 13.

A seedbox 15 communicates and is shown as connected with the lower terminal portion of the screen or sieve casing 13, the top of one wall or, as it might properly be considered, the inner wall of the seedbox terminating short of the corresponding portion of the outer wall of said seedbox.

The cleaning mechanism, as represented by dotted lines in Fig. 4, is housed within a seed-house 16, the seed from the box 15 dropping at suitable intervals, as will hereinafter appear, into suitable receptacles, which may be bags, a wagon, or the like. The screen or sieve 14, it will be seen, extends from the upper side of the delivery-opening of the blast-pipe 8 to the top of the short wall of the box 15, separating the casing 13 into two chambers, one of which directly opens into the top

or upper portion of the seedbox, while the other one directly opens into the outlet-pipe 17, which carries off the sand, leaf-trash, and other objectionable matter that may have been separated from the cotton-seed during the traverse of the mass containing the latter along the screen or sieve 14.

The air-blast traveling along the pipe 8 toward the cleaning mechanism carries with it the mass containing the seed, &c., and delivers the mass against the upper end of the screen or sieve 14, such mass being presented in a proper condition to the screen by a spreader, as 18, which, it will be perceived, is situated within what might be considered the seed-chamber of the casing 13, the other chamber being conveniently considered as the dust-chamber. The spreader 18 consists of an imperforate ribbed plate mounted for oscillation at about the junction of the blast-pipe 8 and the upper side of the casing 13 and having a weighted arm 19, which rests against a pin 20, placed in one of a series of perforations extending in a curved direction along the fixed segment 21. In this way the space separating the lip of the spreader 18 and the screen 14 can be adjusted to suit different conditions, while at the same time the spreader is adapted for yielding movement, so that it can recede slightly in case of obstruction in the space mentioned, whereby the proper action of the machine will not be affected. The spreader 18 being imperforate, there is no possibility of dust sifting through the same and into the seed-chamber of the casing at the entering end of the latter. Initially, therefore, the blast of air and the mass of material strike against the upper portion of the screen or sieve 14, the air of course directing the mass against said screen and being of sufficient intensity to initially drive through the mass dust, sand, and the like which may be in such mass. At the same time the blast causes the mass to traverse the screen. In other words, it gives it a feeding or advancing motion, such motion, of course, being assisted by gravity, so that the mass will pass in contact with the screen or sieve, the air being effective for expelling from the mass practically all foreign matter that may not have been separated therefrom upon the initial entrance of the mass into the casing 13 during the contact of such mass with the screen.

I provide means for securing the positive adherence of the mass to the screen or sieve 14 during its travel therealong. Upon the inside of the casing 13 and in the seed-chamber thereof I mount the plates 22, which are angularly disposed with respect to the intermediate portion of the screen or sieve 14, and which plates are normally fixed. These plates serve to hold the mass against the screen 14 after such mass leaves the spreader 18, so as to facilitate the separation of the foreign matter therefrom.

To suit different conditions, the plates 22 are adjustable, and the adjusting means in each case is denoted in a general way by 23 and is of a familiar form, consisting of a segment having means for holding the arms upon the two oscillatory plates in desired positions.

The screen 14 is of arcuate form, as previously stated, whereby the lower terminal portion thereof presents, in effect, a pocket in which the cotton-seed prior to its entrance into the box 4 can momentarily lodge to permit any foreign matter that may not have been separated therefrom to sift through the screen and pass into the dust-outlet tube or pipe 17. This retardation of the seed is of very brief duration, but is sufficient in practice to remove all particles of objectionable matter from the seed before the latter enters the box 15.

The discharge-opening of the box 15 is shown as provided with two doors, the lower edges of which close automatically against each other by means of weighted levers, as 25, connected by means of segmental rods or links, as 26, with the respective doors. The weights carried by the two levers are of course adjustable in order to regulate the efficiency thereof, or the same result can be obtained by adjusting the fulcrums of the levers, which are shown as secured by means of an adjustable connection between said levers and their coöperating rods or links 26.

The seed of course drops from the sieve 14 into the upper side of the box 15, onto the normally closed doors 24, and when the weight of the seed in the box is sufficient to overcome the weights of the two levers the seed automatically forces open the two doors or flaps 25 to fall into a suitable receptacle, following which the doors are automatically closed through the intervention of said weighted levers.

As previously indicated, I have shown one simple organization involving my improvements; but I do not wish to limit myself to the disclosure thus made, for many variations as to several features of the invention may be adopted within the scope of my claims.

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

1. In an apparatus of the class described, the combination of an arcuate casing, a seedbox connected with the casing, automatic means for closing the delivery end of said seedbox, an arcuate screen in the casing, separating the same into dust and seed chambers, the lower end of the seed-chamber opening directly into the upper end of the seedbox, an air-blast pipe for delivering air and a mass containing cotton-seed into the upper open end of said casing and against the screen, an adjustably-supported spreader located at the entering end of the casing and serving to spread the material on its entrance thereinto, and a plurality of angu-

larly-disposed plates within the seed-chamber for holding the mass of cotton in contact with said screen during its travel therealong.

2. In an apparatus of the class described, the
5 combination of an arcuate casing, a seedbox connected with the casing, having doors arranged to close against each other, weighted levers fulcrumed on the seedbox, links connecting the doors and levers, the latter serving to transmit, through the links, a closing
10 force to the doors, an arcuate screen in the casing, separating the same into dust and seed chambers, the lower end of the seed-chamber opening directly into the upper end of the seed-
15 box, an air-blast pipe for delivering air and a mass containing cotton-seed into the upper

open end of said casing and against the screen, an adjustably-supported spreader located at the entering end of the casing and serving to spread the material on its entrance thereinto, 20 and a plurality of angularly-disposed plates within the seed-chamber for holding the mass of cotton in contact with said screen during its travel therealong.

In testimony whereof I have hereunto set 25 my hand in presence of two subscribing witnesses.

CHAUNCEY R. BENEFIELD.

Witnesses:

D. O. WHEELER,
S. WURZBURG.