

(No Model.)

2 Sheets—Sheet 1.

J. C. FROST.
APPARATUS FOR CASING TOBACCO.

No. 446,441.

Patented Feb. 17, 1891.

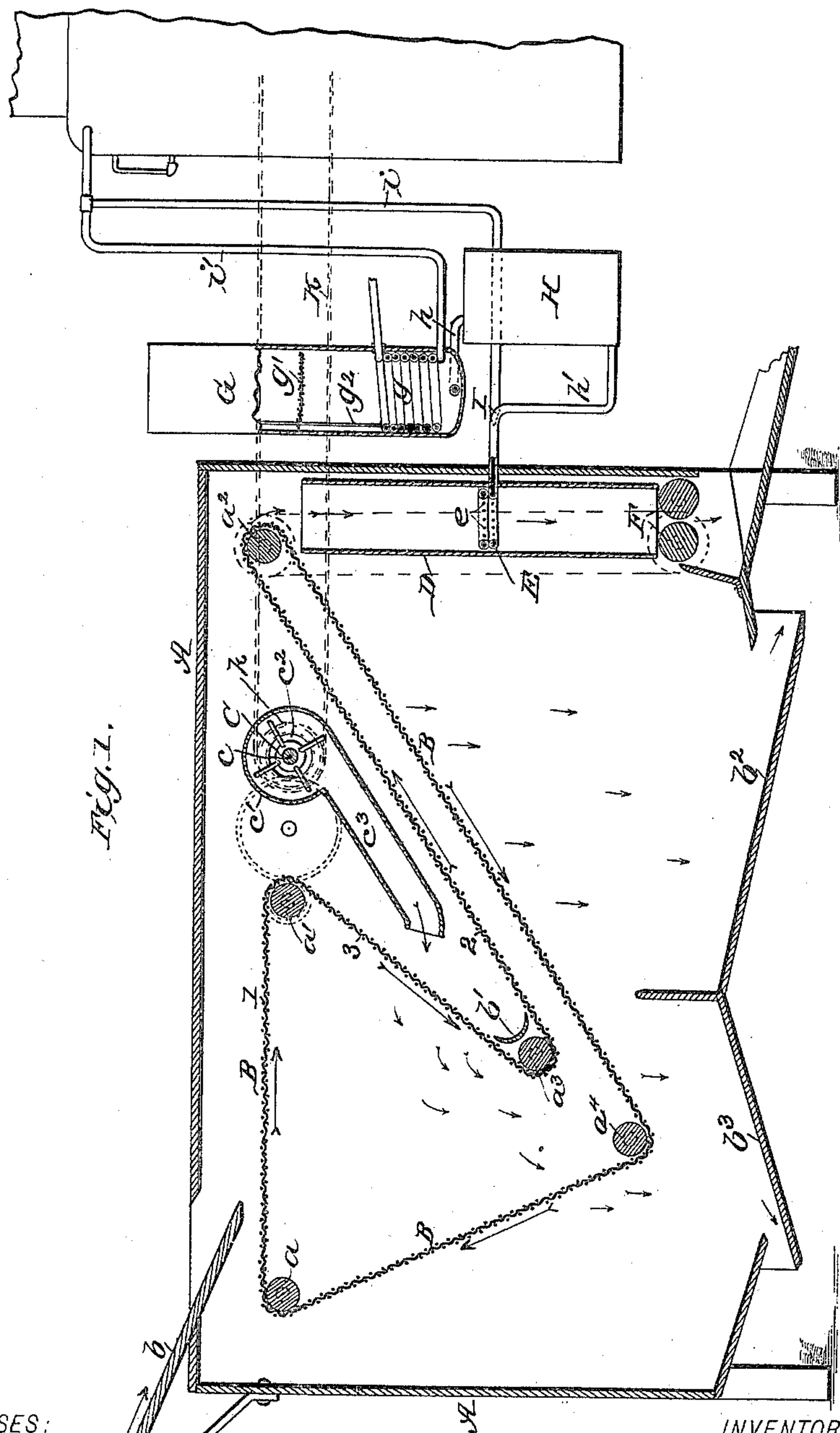


Fig. 1.

WITNESSES:

Fred G. Dieterich
for A. Ryan

INVENTOR:

John C. Frost.

BY *Wm. L. B.*

ATTORNEYS

(No Model.)

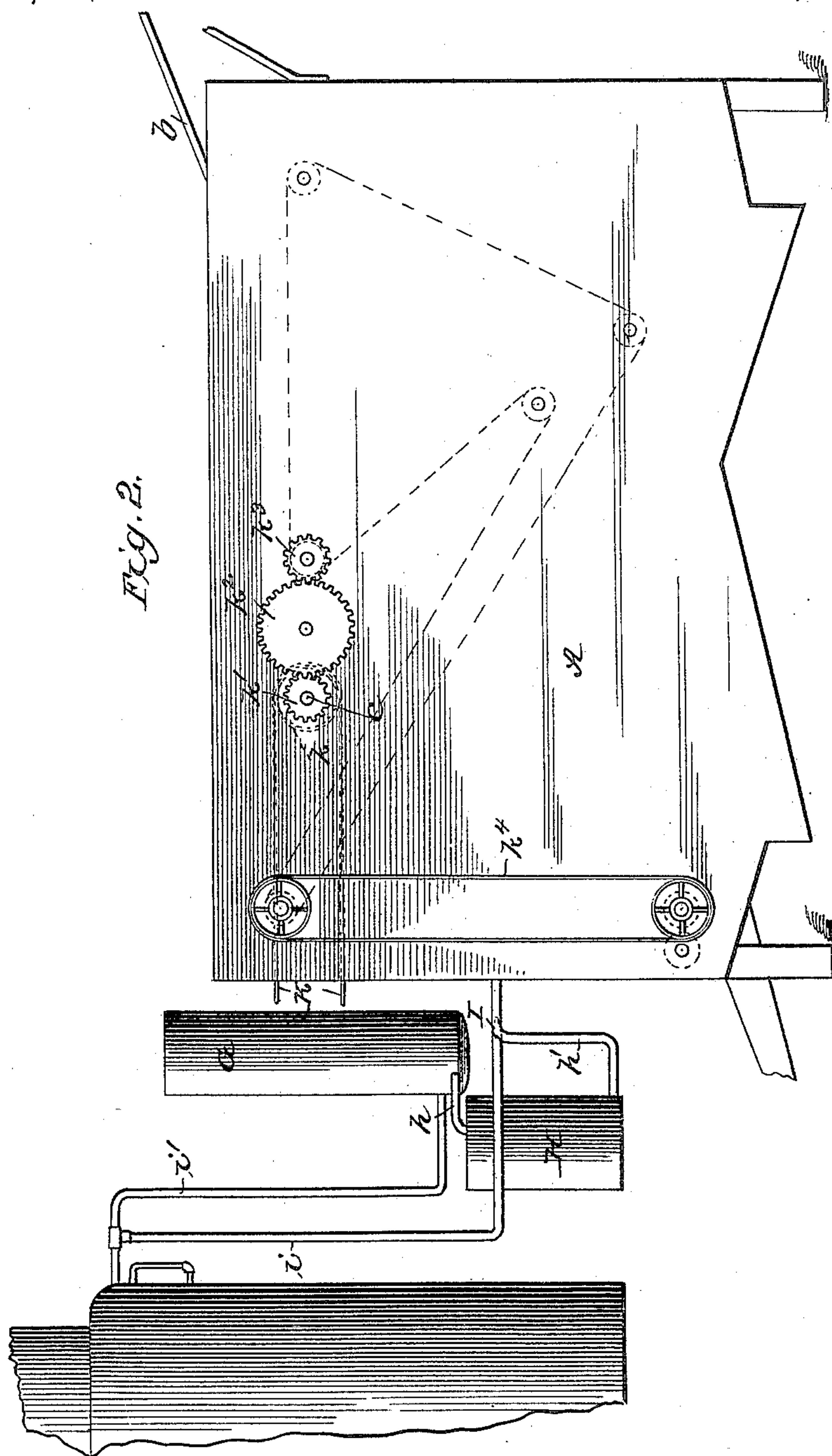
2 Sheets—Sheet 2.

J. C. FROST.

APPARATUS FOR CASING TOBACCO.

No. 446,441.

Patented Feb. 17, 1891.



WITNESSES:

Fred G. Dieterich
Jos. A. Ryan

INVENTOR:

John C. Frost.
BY *Wm. L.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN C. FROST, OF STATESVILLE, NORTH CAROLINA.

APPARATUS FOR CASING TOBACCO.

SPECIFICATION forming part of Letters Patent No. 446,441, dated February 17, 1891.

Application filed April 16, 1890. Serial No. 348,261. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. FROST, of Statesville, in the county of Iredell and State of North Carolina, have invented a new and useful Improvement in Apparatus for Casing Tobacco, of which the following is a specification.

My invention consists in certain details of construction and combination of parts, such as shown in the accompanying drawings, and more fully explained hereinafter.

In the drawings, in which the same letters and figures of reference indicate the same parts, Figure 1 is a longitudinal section of my improved apparatus, and Fig. 2 is a side elevation of the same.

In the embodiment of my invention I employ a frame-work A of any suitable construction and dimensions. A roller a is journaled transversely in the frame near the upper forward end of the same, and a suitable distance in rear of said roller and in horizontal alignment therewith is journaled another roller a' , and near the upper rear end of the frame is journaled a roller a^2 . Adjacent to the lower forward end are journaled the rollers a^3 and a^4 , the roller a^4 being forward of and lower than the roller a^3 . An endless belt B, of wire fabric or slatted construction, is passed around the above-mentioned rollers, as shown, and is driven in the direction indicated by the arrows. A feeding-table b is arranged above the forward end of the belt and projects a short distance over the same, whereby the tobacco-leaves are evenly fed to the belt B. The belt being constructed of wire fabric or slatted material, a portion of the dirt and foreign matter that is separated from the leaves will pass through the same; but in order to thoroughly cleanse the leaves of all dirt and other adhering foreign matter I employ a rotary fan-blower C, said fan being journaled upon a transverse shaft c and inclosed in a suitable casing c' , air being supplied through an opening c^2 in the side of the frame. The fan-inclosing casing c' is arranged a short distance to the rear of the roller a' , and an air-trunk c^3 , through which air is forced by the fan-blower C, extends obliquely downward and forward to within a short distance of the downwardly-moving

portion of the belt B as it passes around the rollers a' and a^3 . The fan is given a sufficient velocity to force the air through the trunk against the tobacco, as it descends from the horizontal portion 1 of the belt to the upwardly inclined and moving portion 2, thereby completely separating all adhering foreign matter from the tobacco and forcing or sifting the same through the meshes or openings of the downwardly inclined and moving portion 3 of the belt B. A curved shield b' covers the roller a^3 , and is so arranged that all descending leaves are prevented from passing back of said roller and are guided upon the portion 2 of the belt. As the tobacco passes up the incline all the fine or scrap portions of tobacco will pass through the belt and be guided out of the frame by means of the chute or trough b^2 . Another chute b^3 is arranged forward of and beneath the portion 3 of the belt to conduct the sand and other sifted matter without the frame of the device. A vertical pipe or cylinder D is arranged beneath the roller a^2 , or the said roller is journaled in the upper end of said cylinder, as desired, or arranged in any manner so that all the tobacco carried up by the belt will drop into the cylinder D. Circular pipes E or coils of the same are arranged within the cylinder D, said pipes having their inner sides perforated at e , and, if desired, nozzles may be inserted in said perforations; but this is not absolutely necessary. The pipes E are for spraying the casing solution upon the leaves as they fall through the cylinder D, and, extending entirely around the inner sides of said cylinder, the leaves will be sprayed upon all sides. Pressing-rollers F are arranged at the lower end of the cylinder D, and all the leaves in passing from the cylinder pass between said pressing-rollers, whereby the casing is more thoroughly absorbed by the leaves, and all the liquid not absorbed will be wrung from the leaves and conducted away to be used again.

G indicates a receptacle in which the licorice or casing is prepared, said receptacle consisting of a tank having a series of steam-coils g arranged in the bottom of the same for heating and cooking the licorice solution. By heating the solution by steam a uniform de-

gree of temperature is always to be had, and scorching, which is so common, is entirely avoided. The licorice is preferably held upon a reticulated rest g' , supported within the solution upon a rod g^2 , extending upward from the top coil of the steam-pipe g . Other means, however, for supporting the rest may be employed. By holding the licorice upon the rest it cannot come in contact with the heated pipes and produce a sticky mass. After the solution has been cooked in the receptacle G it is passed into a reservoir-tank H by means of the pipe h , and from the reservoir H the solution passes into the spraying-pipes E by means of the pipe h' , and at any suitable point in the pipe h' is arranged a steam-injector I , which is connected with the steam-space of a boiler by means of the steam-pipe i . The steam-coil g in the cooking-receptacle G is connected with the steam-boiler by means of a pipe i' .

Any suitable form of steam boiler or generator may be employed as a source of steam-supply, and said steam-supply may be adjacent to the casing apparatus or some distance from the same, as desired.

Any suitable method of operating the various moving parts may be employed; but I have shown a construction which is very simple and has been found very efficient. This consists of a belt K , driven by a steam-engine or other power, said belt passing around a pulley k , mounted upon one end of the fan-shaft c . Upon the opposite end of said shaft is secured a pinion k' , which meshes with a large gear k^2 , which in turn meshes with the gear k^3 , mounted upon the end of the shaft of roller a' . By this means the fan and belt are operated, and to operate the pressing-roll a belt k^4 is passed around pulleys mounted on the ends of one of the pressing-rollers and the roller a^2 , as shown.

The operation of my device is as follows: The tobacco-leaves are spread upon the feeding-table b and fed upon the horizontal portion 1 of the belt. The belt being of reticulated or slatted material some of the foreign matter will pass through the same. This foreign matter falls into the chute b^3 . When the tobacco-leaves pass over the roller a' , they fall upon the upwardly inclined and moving portion 2 of the belt; but in passing to said portion 2 they are subjected to an air-blast from the fan C , and all foreign matter adhering to the leaves is separated therefrom by the force of the blast and driven through the downwardly inclined and moving portion 3 of the belt. This sifted matter falls also into the chute b^3 . As the tobacco-leaves move up the incline 2, fragments, &c., fall through the same and are caught in the chute b^2 . The leaves pass over the roller a^2 and drop into the casing-cylinder D , where the casing is sprayed upon all sides of the leaves by means of the perforated pipe or pipes E , said pipes having the steam-injector I connected with the same for the purpose of spraying the casing solution. The

leaves in passing out of the cylinder are subjected to the action of the pressing-rolls F , and a great deal of the casing solution is thereby caused to be absorbed by the leaves. All the solution not absorbed is carried off, to be used again. The casing solution is cooked by steam heat, and a uniform temperature is therefore attained and scorching is avoided. The speed of the moving parts can be regulated to feed a definite amount of tobacco, according to the kind operated upon.

In an apparatus constructed and operated as described all the foreign matter adhering to the tobacco is entirely removed before casing. Scraps are also removed, and the tobacco is sprayed upon all sides and the casing solution is never scorched, but is always prepared at a uniform temperature.

It is obvious that the details of construction of my machine may be varied and the relative position of the parts changed without departing from my invention, the principle of which is to spray the casing solution upon all sides of the tobacco.

Instead of having the leaves fall through a cylinder or drum, they may be made to fall from one belt to another, the solution being injected upon the same on all sides.

Having thus described the construction, operation, and advantages of my improved apparatus, what I claim is—

1. In a tobacco-caser, the casing-cylinder having a perforated coil pipe or pipes arranged within the same for spraying the casing solution upon the leaves as they pass through the cylinder, substantially as shown and described.

2. In a tobacco-caser, the combination, with a movable endless belt, of the rollers a , a' , a^2 , a^3 , and a^4 , around which the belt passes, the rollers a , a' , and a^2 being arranged in horizontal alignment, the roller a^3 being arranged below the said rollers, and a blowing device arranged adjacent to the belt between the rollers a' and a^3 , substantially as shown and described.

3. In a tobacco-caser, the combination, with a movable endless belt of foraminous structure, an air-blower arranged adjacent to said belt, a casing-cylinder arranged beneath the delivery end of said belt, and a pipe in said cylinder for spraying the casing solution, substantially as shown and described.

4. The combination, with the endless belt, of the rollers a , a' , a^2 , a^3 , and a^4 , the rollers a , a' , and a^2 being in horizontal alignment, the rollers a^3 and a^4 being below the said rollers a , a' , and a^2 , the belt passing over the rollers a , a' , and a^2 and under the rollers a^3 and a^4 , and the shield b' , arranged to cover the roller a^3 , substantially as shown and described.

5. In a tobacco-caser, the combination, with an endless belt constructed and arranged as described, of a blower adjacent to said belt, a casing-cylinder having perforated pipes arranged within the same, adapted to spray the solution upon the leaves, and the injector

connected with the said pipes to spray the liquid, substantially as and for the purpose set forth.

- 5 6. The combination, with the casing-cylinder, of the perforated pipes arranged therein, steam and liquid supply pipes connected with said pipes, and the pressing-rollers arranged at the lower end of the cylinder, substantially as shown and described.
- 10 7. The combination, with a licorice-cooking receptacle, of the coil-pipes arranged in the lower part of the same, the rod extending upward from said coil, and the licorice-rest secured to said rod, substantially as shown
- 15 and described.

8. The combination, with a casing-cylinder having the perforated coils arranged within the same, the licorice-cooking receptacle, reservoir-tank connected with the said receptacle, a pipe connecting the reservoir and 20 coils within the casing-cylinder, a steam-pipe connected with the said connecting-pipe, and an injector arranged at the juncture of the steam and connecting pipes, substantially as and for the purpose set forth.

JOHN C. FROST.

Witnesses:

J. W. MARSHALL,
W. G. LEWIS.