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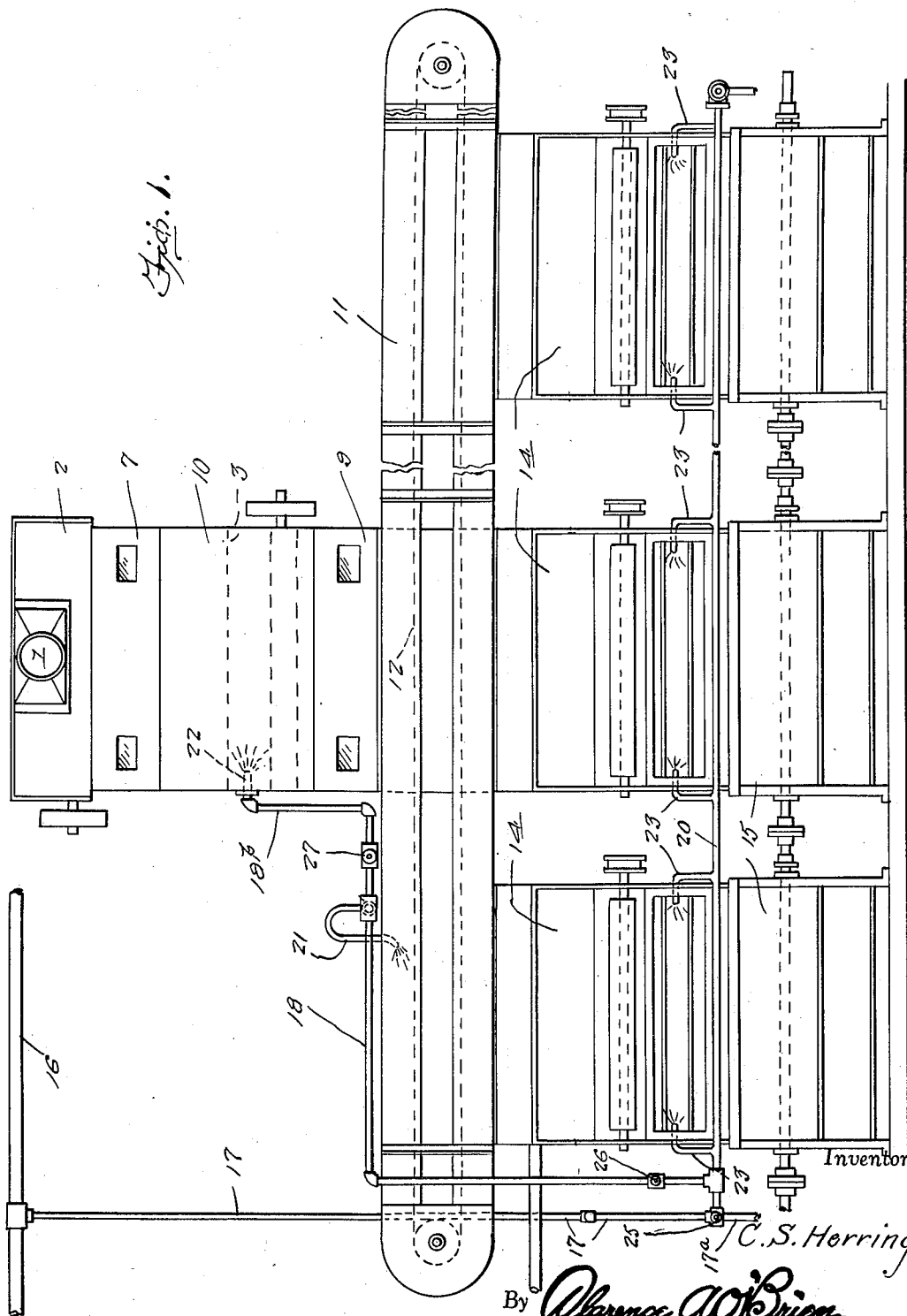
C. S. HERRING

2,019,079

COTTON HUMIDIFIER

Filed Dec. 21, 1934

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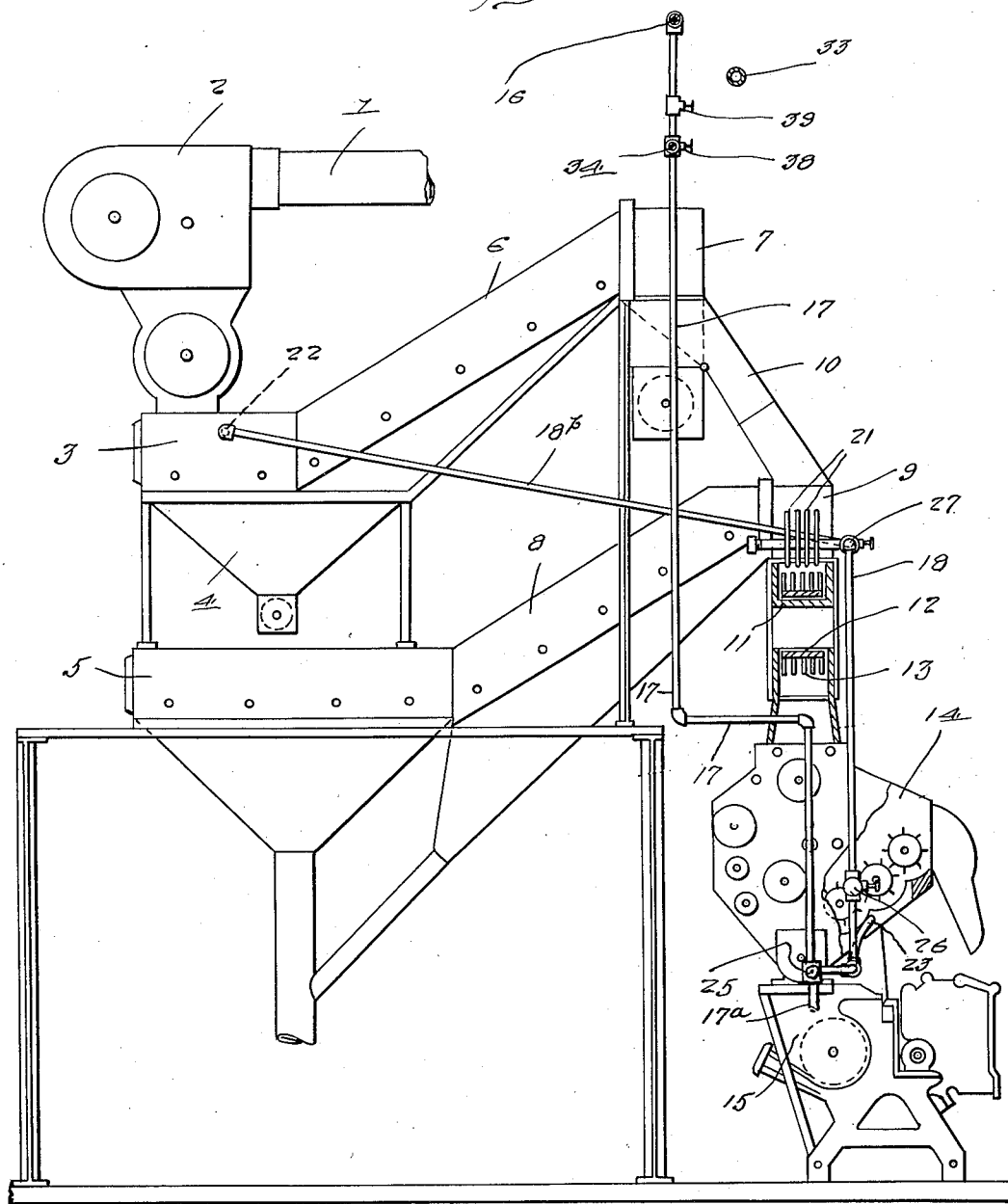
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3 Sheets-Sheet 2

Fig. 2.



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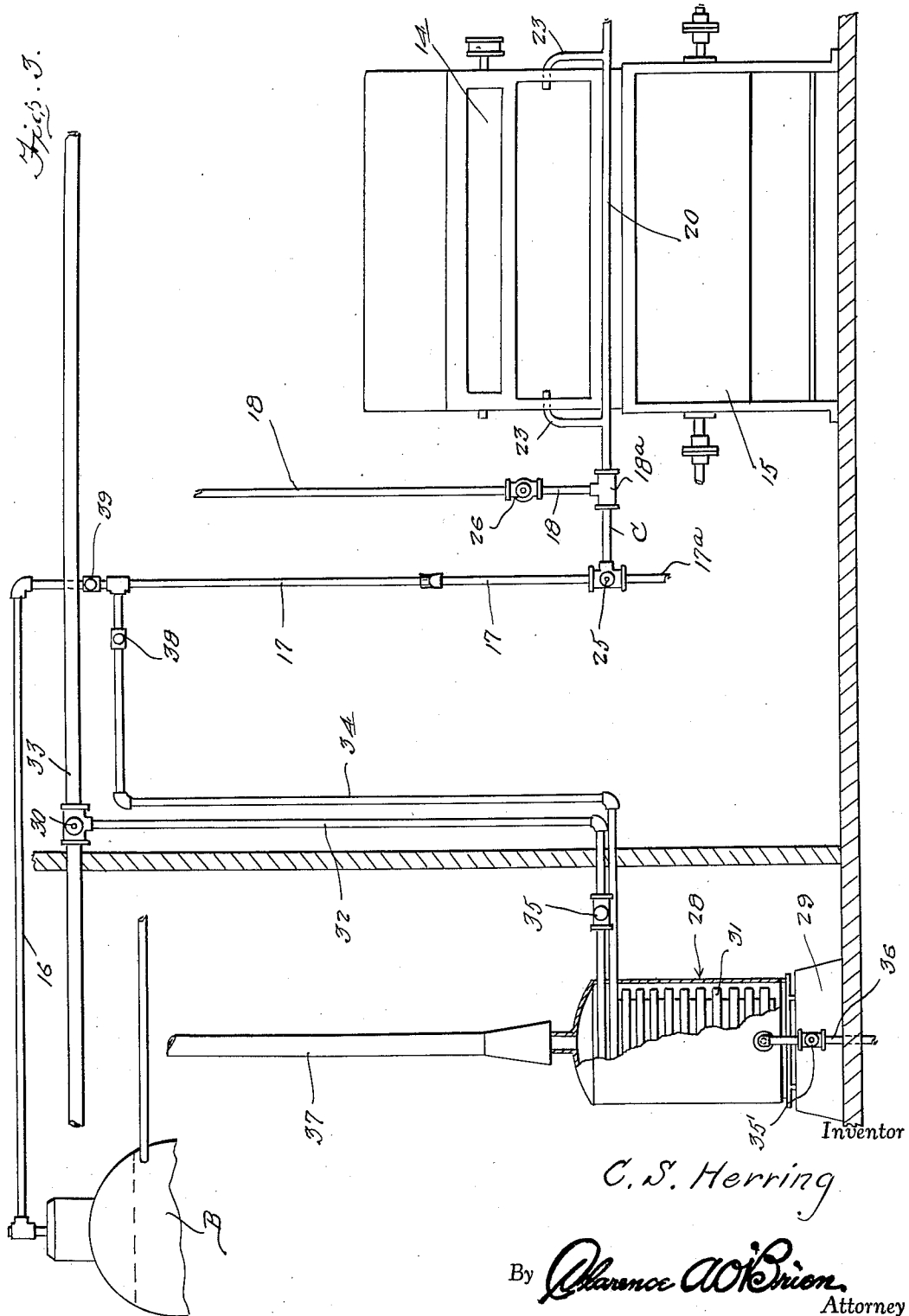
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3 Sheets-Sheet 3



UNITED STATES PATENT OFFICE

2,019,079

COTTON HUMIDIFIER

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Application December 21, 1934, Serial No. 758,671

4 Claims. (Cl. 19—66)

This invention relates to a device for applying moisture to cotton before the cotton enters the gin stand, an object of the invention being to provide an apparatus for humidifying the cotton by the action of steam, the invention comprehending the subjecting the cotton while in the feeder extractor or feeder cleaner to the action of steam before entering the gin stand for the purpose of putting moisture or humidity in the cotton ahead of the gin saws.

The present invention involves certain new and useful improvements over the humidifier involving the subject matter of my Patent No. 1,954,383, granted April 10, 1934 and entitled "Cotton humidifier".

The present invention is especially concerned with the provision of a suitable source of steam supply, with improved means for subjecting the cotton to the action of steam; and for the provision of means whereby the steam may be so mixed with the cotton as to eliminate static conditions attendant in ginning dry cotton, especially in dry climates.

Further, in accordance with the present invention, the humidifier may be attached to and used in connection with a boiler or with a coil as found desirable and without regard to the particular type of gin machinery or motor power employed.

The invention together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a front elevational view illustrating somewhat diagrammatically a gin mill or plant, and the application of my invention thereto.

Figure 2 is a side elevational view with certain parts shown in section to more fully disclose the invention.

Figure 3 is a somewhat diagrammatic view showing the pipe connections leading to the boiler and the coil and to the nozzle carrying parts, parts in this figure being shown in section and elevation.

As will be understood, my improved humidifying means may be used regardless of the type of gin machinery or motor power employed therefor, and to this end I have shown the invention as applied to a somewhat conventional type of gin machinery wherein is employed a separator 2 having the usual feed pipe 1 connected therewith; cleaners 3, 5 and associated parts (4, 6, 7, 8, 9 and 10 with which this invention is not particularly concerned); distributor trough 11 in which operates an endless distributor apron 12

provided with the usual prongs 13; feeders 14 associated with the gin stands 15, there being in the present instance a battery of such stands 15 illustrated. The above is conventional and a more detailed description thereof is deemed unnecessary.

In accordance with the present invention there is provided a distributor or manifold pipe 20 that, for each feeder 14 is provided with a pair of nozzles 23 that extend into the feeder 14 at opposite sides of the latter as shown in Figure 1. Connected with one end of this pipe through the medium of a three-way valve 25 is a steam feed pipe 17 and a steam exhaust pipe 17a. The pipe 17 is also suitably connected with a member 16 that leads from a suitable steam boiler, a portion of which is shown in Figure 3 and indicated by the reference character B. Also, connected with the pipe 20 through the medium of a suitable union 18a is a pipe 18 that has an upper portion that extends above and lengthwise of an end portion of the trough 11. As shown in Figure 1, the pipe 18 has its upper horizontal portion terminating in an extension or section 18b that is provided with a jet or nozzle 22 that extends into the cleaner 3 as suggested in Figures 1 and 2. Branching laterally from the horizontal portion of the pipe 18 and extending transversely of the trough 11 is a distributor or manifold pipe section to which are connected a series of suitable nozzles 21 that terminate within the trough 11. Arranged within the horizontal portion of the pipe 18 is a valve 27 disposed between the nozzles 21 and the extension 18b of the pipe, while in the vertical portion of the pipe 18 there is a valve 26 as shown in Figures 1 and 3.

From the above then it will be apparent that with valve 25 turned so as to connect the pipe 17 with the pipe 20 and valve 26 closed, steam from the boiler will pass through the pipe 16, the pipe 17 and the pipe 20 to discharge into the cleaners 14 through the nozzles 23 and onto the cotton for humidifying the cotton prior to the passage of the cotton into the gin stand.

Also, and when found desirable to prevent, eliminate or reduce static condition attendant in ginning dry cotton, valves 26 and 27 are open so that steam will also pass through the pipe 18 to discharge through the nozzles 21 into the cotton within the trough 11, some of the steam passing through the pipe section 18b to discharge into the cleaner 3 also. Thus, the cotton before reaching the feeders 14 may be moistened with steam thus effecting the purpose just mentioned.

Where desired, or if necessary, instead of using the boiler B for supplying steam there may be used a steam coil 31 arranged in a suitable casing 28 as shown in Figure 3. The casing 28 is mounted on a suitable stand or base 29 and the burner for the coil which may be a gas burner, is fed from a suitable source of supply through the medium of pipe 36 equipped with a valve 35'. For the casing 28 there is provided a suitable gas vent 37.

The coil 31 which is preferably in the nature of a double coil has its inlet end connected through the medium of a pipe 32 with a water supply pipe 33 leading from any suitable source of supply. The connection between the pipes 32 and 33 is in the form of a valve 30 while a valve 35 may be also placed in the pipe 32. The outlet end of the coil 31 is connected through the medium of a pipe 34 with the pipe 17 and arranged in the pipe 34 is a valve 38 while a valve 39 is arranged in the pipe 17 above the connection between the pipe 17 and the pipe 34 as shown in Figure 3.

From the above it will be apparent that when the supply of steam from the boiler B is cut off, valves 30 and 35 may be opened so that water will flow from the pipe 33 through the coil 31 to provide steam which is conveyed through the pipe 34 and the pipe 17 to the pipe 20 for moistening the cotton in the feeders 14, and in a manner thought to be apparent and previously set out, steam may be supplied under these present conditions, through the pipe 18 and associated parts to the cleaner 3 and trough 11 to reduce or eliminate undesirable static conditions.

Having thus described the invention, what is claimed as new is:

1. In a ginning mechanism including cleaners, conveyor trough, feeder and gin stand, a steam pipe having nozzles projecting therefrom and terminating inwardly of the feeder and a source of steam supply connected with said pipe for feeding steam through the pipe and the nozzles into the feeders for moistening the cotton therein prior to the passage of the cotton into the gin stand, a second steam pipe branching from the first named steam pipe and having nozzles connected therewith for directing steam into the conveyor trough and an additional nozzle connected therewith for directing steam into the cleaner, said second steam pipe and nozzles associated therewith serving to supply steam to the cleaners and the conveyor trough for moistening cotton therein to eliminate static condition, and valve means for controlling the passage of steam

from the first named steam pipe to the second named steam pipe.

2. In a ginning machinery including cleaners, conveyor trough means, feeders and gin stand, a steam pipe having nozzles connected therewith and extending into the feeders, a second steam pipe branching from the first named steam pipe and having nozzles connected therewith extending into the trough, and an additional nozzle connected therewith and extending into the cleaners, a valve in the second steam pipe, a boiler, piping leading from the boiler and connected with the first named steam pipe for supplying steam from the boiler to said first named steam pipe, and valve means connecting said piping with said first named steam pipe.

3. In a ginning machinery including cleaners, conveyor trough means, feeders and gin stand, a steam pipe having nozzles connected therewith and extending into the feeders, a second steam pipe branching from the first named steam pipe and having nozzles connected therewith extending into the trough, and an additional nozzle connected therewith and extending into the cleaners, a valve in the second steam pipe, a steam coil, a source of water supply, valve equipped piping connecting said source of water supply with the inlet end of said coil, additional piping connecting said coil at the outlet end thereof with the first named steam pipe, and valve means between said last named piping and said first named steam pipe for controlling the supply of steam to the latter.

4. In a ginning machinery including cleaners, conveyor trough means, feeders and gin stand, a steam pipe having nozzles connected therewith and extending into the feeders, a second steam pipe branching from the first named steam pipe and having nozzles connected therewith extending into the trough, and an additional nozzle connected therewith and extending into the cleaners, a valve in the second steam pipe, a boiler, piping leading from the boiler and connected with the first named steam pipe for supplying steam from the boiler to said first named steam pipe, and valve means connecting said piping with said first named steam pipe, a steam coil, means for connecting a source of water supply with said steam coil, and additional piping connecting said steam coil with the first named steam pipe for supplying steam from the coil to said first named steam pipe; said boiler and coil adapted to be selectively used as a source of steam supply.

CLYDE S. HERRING. 55