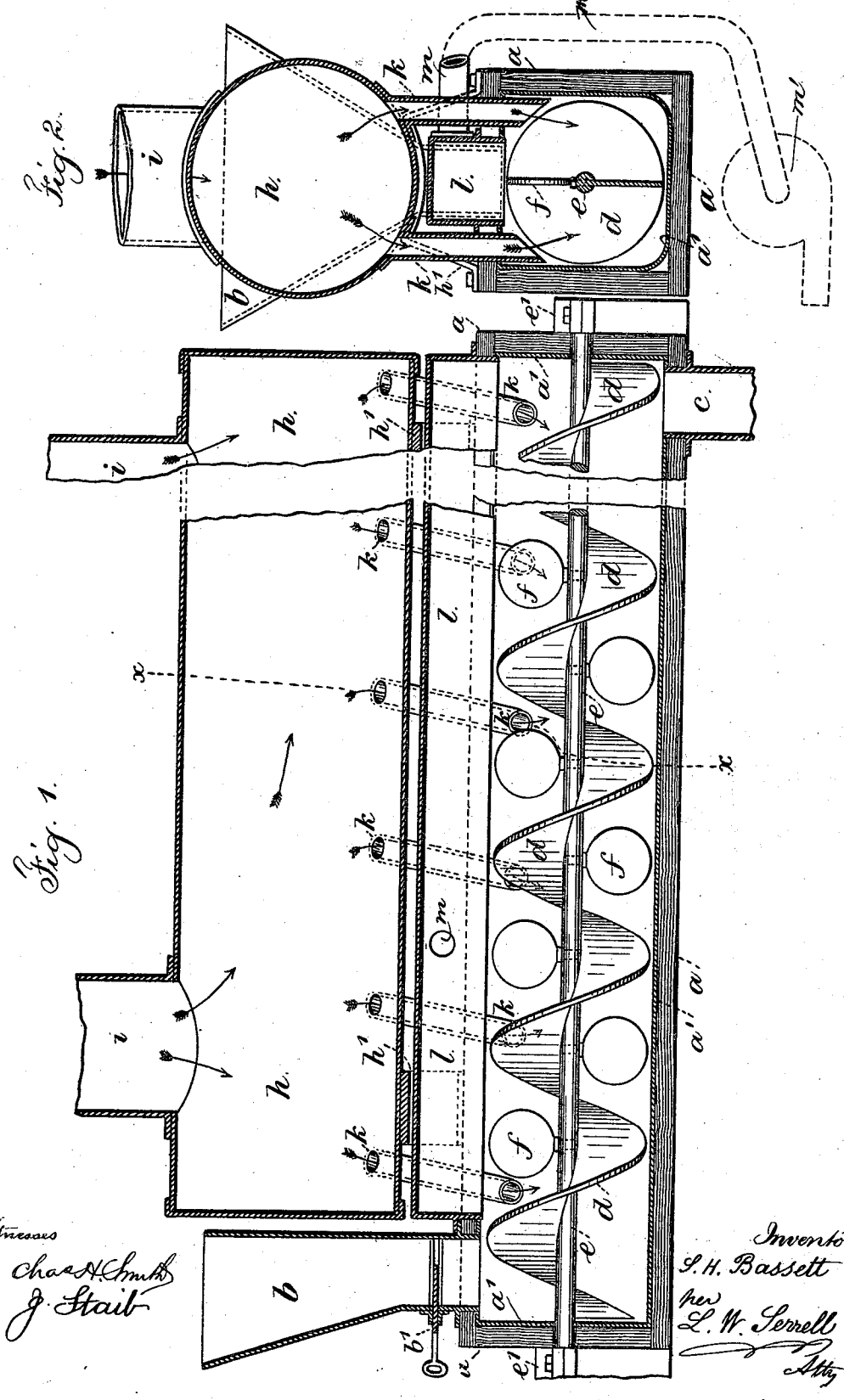
(No Model.)

S. H. BASSETT.

APPARATUS FOR CONVEYING AND DRYING.

No. 501,048. Patented July 11, 1893.



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APPARATUS FOR CONVEYING AND DRYING.

SPECIFICATION forming part of Letters Patent No. 501,048, dated July 11, 1893.

Application filed May 20, 1892. Serial No. 433,732. (No model.)

To all whom it may concern:

Be it known that I, SHELDON H. BASSETT, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Apparatus for Conveying and Drying, of which the following is a specification.

My improvements relate to apparatus employed in the utilization of old rubber.

Heretofore in the utilization of old rubber it has been customary to grind the material, and to dissolve out or otherwise separate the fibrous material from the rubber, then to grind the rubber to a powder and subject it to the action of steam to remove the sulphur, &c., or in other words, to devulcanize the product and then to dry the moist devulcanized rubber by currents of hot air when spread out upon shelves of fine wire gauze.

My improvements relate to an economical apparatus for the conveying and drying of the rubber material both before and after devulcanizing, and also for the conveying and drying of other material, and the same consists of a case with a supply hopper at one end and discharge hopper at the other end, a conveyer screw within the case for carrying the material along from the feeding to the delivery end, which conveyer screw is mounted upon a shaft provided with stirring blades. Above the case I provide a hot air chamber having inlet pipes from a source of supply, and descending pipes from said chamber to the containing case, which pipes are preferably in pairs and set at a slight inclination. Just above or in the upper part of the case and between the descending pipes is a central chamber opening into the case and from which pipes pass to an exhausting device. Hot air is thus admitted to the case while the rubber material is being conveyed along through the same and stirred by the stirring blades, and the vapors and waste hot air are conveyed away by the exhaust fan and the material is thus thoroughly and quickly dried in its transit through the case, thus obviating the slow drying process heretofore made use of upon the shelves of perforated material.

In the drawings Figure 1 is a longitudinal section, and Fig. 2 is a cross section at *x x* illustrating my improvements.

The case is represented at *a* and the same is preferably made of wood and has a sheet metal lining *a'*. At one end of the case there is a supply hopper *b* and its valve *b'*, and at the other end of the case there is a discharge pipe *c*. Within the case is a conveying screw *d* upon a shaft *e* in bearings *e'* which are shown in this instance upon the outside of the case at the respective ends thereof. Upon the shaft *e* and between the convolutions of the conveyer screw there are stirring blades *f*.

h represents a hot air chamber supported by brackets *h'* at its respective ends upon the upper part of the case *a*, and there are inlet pipes *i* connected to the upper surface of the chamber *h* and by which hot air is caused to pass into the chamber *h* from any suitable source of supply.

Pipes *k* connected to the lower part of the air chamber *h* and opening thereinto pass down into the case *a*, preferably in pairs and at opposite sides of the case. These pipes *k* I prefer to incline slightly toward or in the direction of the supply hopper *b*. The hot air passes from the chamber *h* through the pipes *k* within the case *a*, down the sides of the case *a* and its direction is thereafter up the center of the case. As the hot air comes into the case its impetus causes the material in the case to be more or less agitated and this together with the feeding motion of the conveyer screw and the stirring action of the blades *f* in lifting and turning over the material as it is conveyed, insures all of the particles of the material being brought under the influence of the heated air, so that they may be dried thoroughly. There is an advantage in inclining the pipes *k* slightly in the direction of the supply hopper because the hot air passing through them and entering the case *a* under pressure tends to keep back in a measure the material being fed along through the case, and the material thus being in a measure retarded, more fully insures its thorough drying. There is a central chamber *l* between the respective rows of pipes *k* and centrally opening into the case *a* above the conveyer screw, and the shell of this chamber extends up almost to the under side of the hot air chamber *h* and is in effect a continuation of the case or its metal lining. One or more pipes *m* pass from the chamber *l* to an ex-

haust fan or blower m', shown by dotted lines in Fig. 2, and in the operation of the device the vapors and spent heat from the drying devulcanized rubber or other material pass up into this central chamber l and are conveyed away by the pipe m. The exhausting device employed for this purpose is in reality the operative power to draw the hot air through the pipes i, chamber h, descending pipes k, into the case a, and the waste products from the case a through the chamber l and pipe m. This case a may be of any desired length such as may be found in practice sufficient for the thorough drying of the rubber or other material and the conveying of the same from one point to another.

My improved apparatus is exceedingly simple, compact, and its operation is efficient for the economical conveying and drying of the rubber or other material preparatory to the re-working of said material into articles of various kinds for the market, or its sale after being dried as an article of merchandise.

The temperature of the atmosphere that is introduced into this apparatus may be varied according to the operation that is to be performed on the material that is subjected to its action.

I claim as my invention—

1. The combination with the case and the screw conveyer within the case and the supply hopper at one end and a discharge at the other end, of the air chamber h, above the conveyer case, the pipes k passing downwardly and entering the conveyer case at opposite sides and a pipe opening into the top of the conveyer case and through which the escape air passes substantially as specified.

2. The combination with a case having a supply hopper at one end and a discharge at the other end, of a conveyer screw and its shaft rotatable within said case, stirring blades f connected at intervals to the conveyer shaft between the convolutions thereof, a hot air chamber h, inlet pipes i, descending pipes k from the lower portion thereof and entering the conveyer case in pairs at opposite sides of the case and at a slight inclination toward the receiving end of the case, there being a chamber l in the upper part of the case between the pairs of pipes k and above the conveyer screw, and a pipe m passing from the chamber l to an exhausting device, substantially as set forth.

Signed by me this 14th day of May, A. D. 1892.

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Witnesses:
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