

(No Model.)

J. McCREATH.
WOOL DRYING APPARATUS.

No. 590,901.

Patented Sept. 28, 1897.

Fig. 1

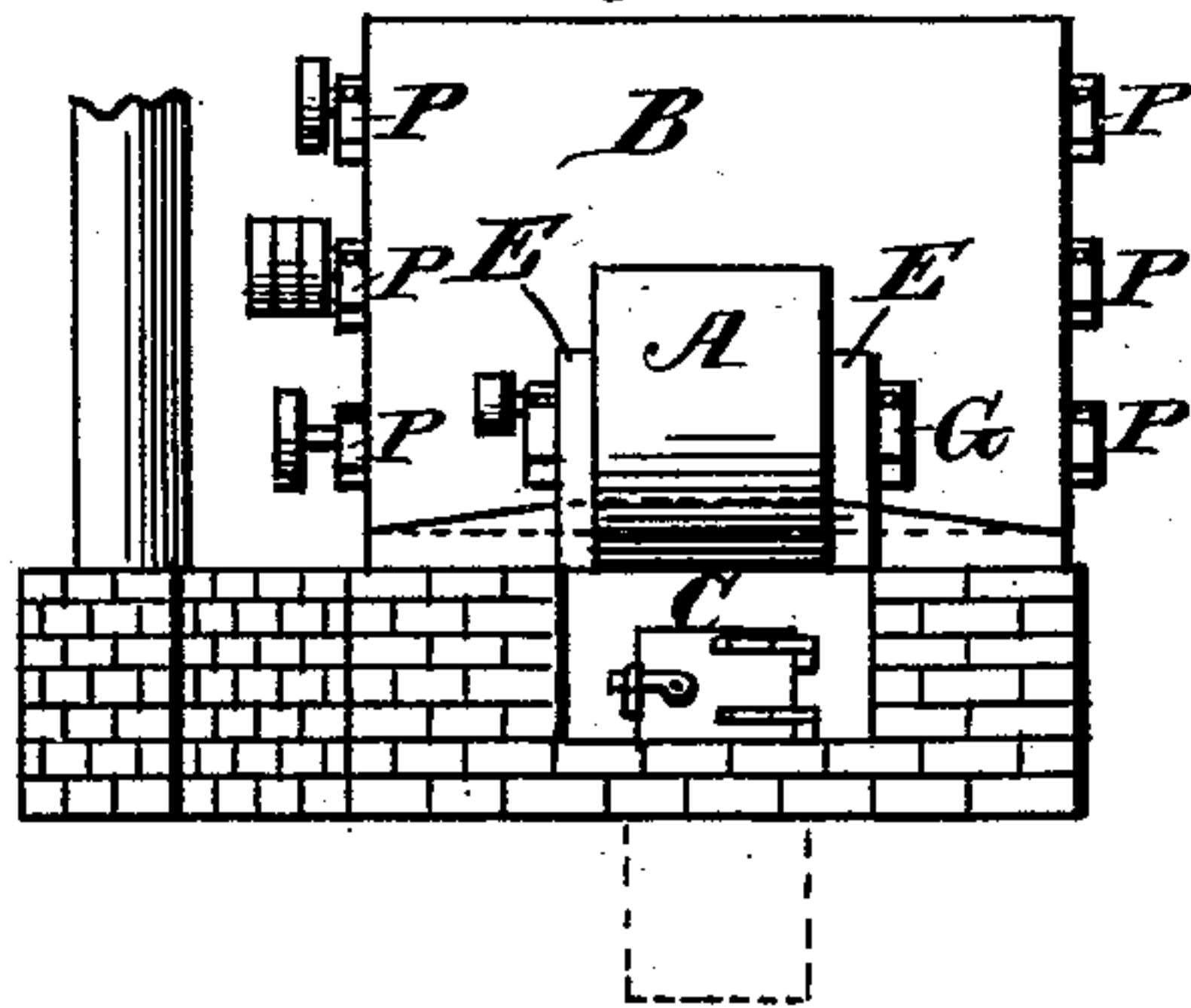


Fig. 2.

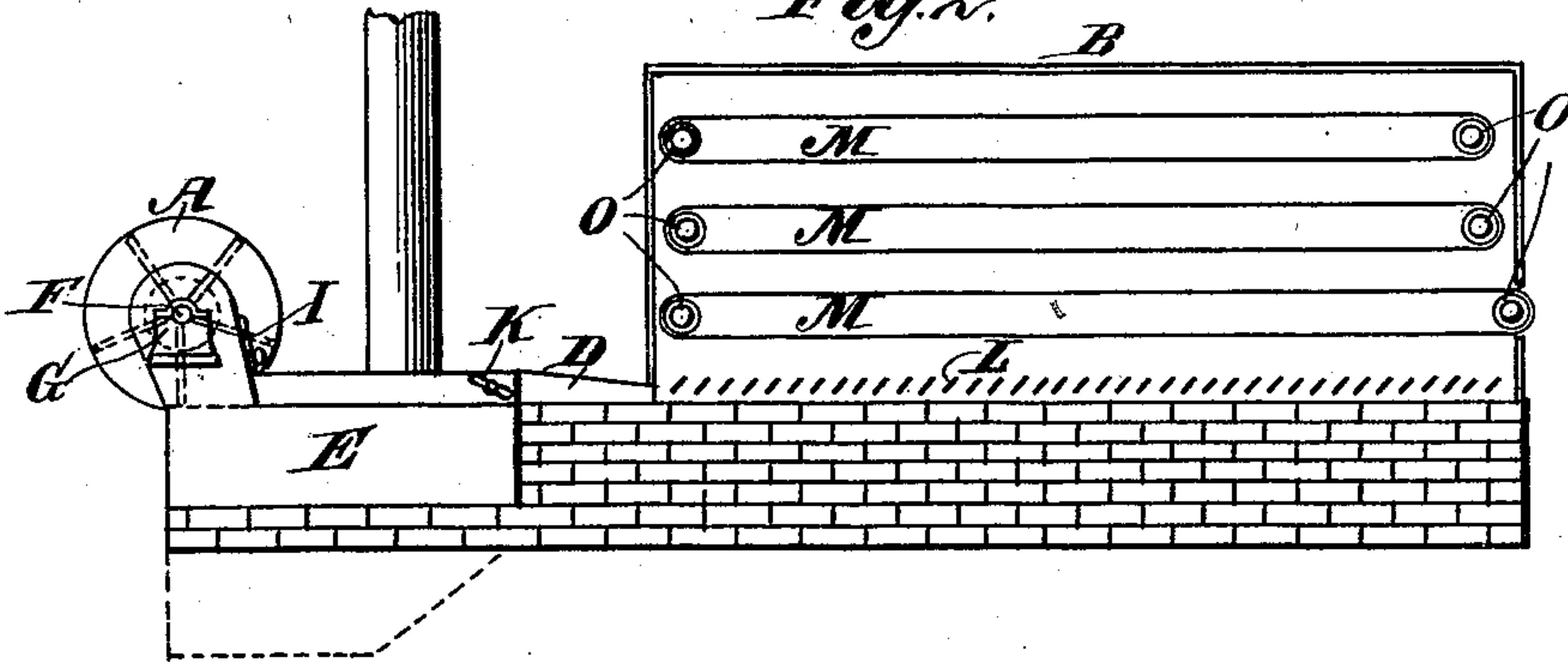
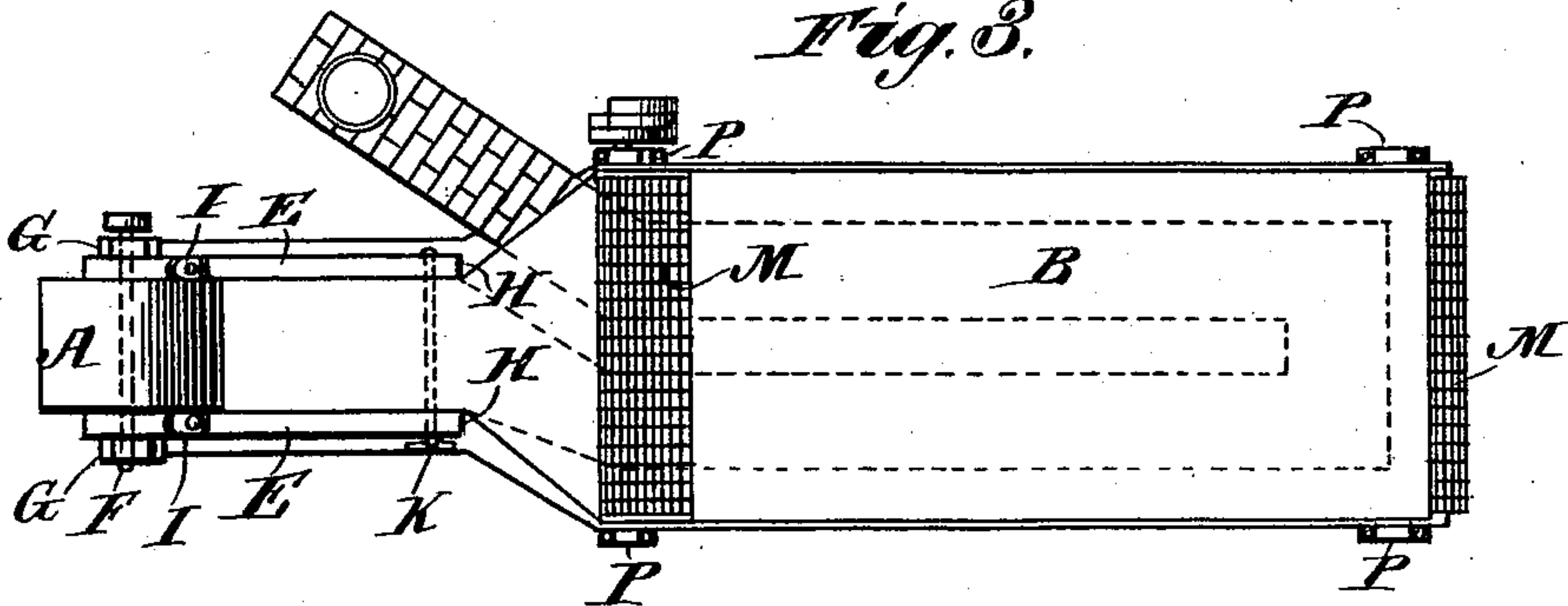


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN MCCREATH, OF INVERCARGILL, NEW ZEALAND.

WOOL-DRYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 590,901, dated September 28, 1897.

Application filed October 1, 1896. Serial No. 607,582. (No model.)

To all whom it may concern:

Be it known that I, JOHN MCCREATH, iron-founder, a subject of the Queen of Great Britain, residing at Invercargill, in the British Colony of New Zealand, have invented new and useful Improvements in Wool-Drying, of which the following is a specification.

My invention relates to the drying of wool and other materials, and has for its object the providing of a process by which a continual draft of hot air is drawn through suction-pipes and forced by a fan or blower into a drying box or tank which contains a series of endless nettings stretched on revolving rollers, the nettings being so arranged as to carry the wool or other material through the hot air and finally deliver it outside the drying box or tank in a perfectly dry state, all as more fully hereinafter described, and shown in the drawings, in which—

Figure 1 is a front view of a machine embodying my invention. Fig. 2 is a side view of the same with one side of the drying box or tank removed to show the endless nettings stretched around the rollers. Fig. 3 is a top view of the machine with the top partly open, showing part of an endless netting.

A is the fan or blower.

B is the drying box or tank.

C is the furnace or heating-box.

D is the delivery-pipe, which forms a connection between the heating or fire box and the air box or tank.

E E are the suction-pipes.

F is the shaft of the fan or blower.

G G are the bearings for the shaft of the fan.

H H are the open ends of the suction-pipes for the entrance of air.

I is the sliding door to admit cold air.

K is the damper.

L is the set of ripples.

M M are the nettings.

O O are the rollers.

P P are the bearings for the rollers.

It is clear that my invention consists of and operates as follows: The parts are a fan A, the air box or tank B, and a fire-box or heating-box C, which forms a connection between the said fan or blower A and the air box or tank B. The bottom of the delivery-pipe D from the said fan or blower to the said air

box or tank forms the top of the heating-box C, while the suction-pipes form the sides of the said fire or heating box. The shaft F of the said fan or blower A comes through the said suction-pipes E and is held by the bearings G, which are attached on the outside of the said suction-pipes E. The far end of the suction-pipes will be open at H to allow the entrance of the air. The air being drawn along the sides of the fire into the fan or blower A is then forced over the top of the fire through the delivery-pipe D into the drying box or tank B. Thus the air is doubly heated by the same fire. On the suction-pipes at a point close to the fan or blower A are two sliding doors I to allow the entrance of cold air if required to cool the heated air. A damper K is fitted in the delivery-pipe D to regulate the current of air. The delivery-pipe after leaving the fire is widened out to the full width of the air box or tank B. The air after being heated is forced by the fan or blower A into the bottom of the said air box or tank B through the delivery-pipe D, whence it meets the set of ripples L, placed the full length of the air box or tank B crosswise and slightly above the bottom. The ripples L guide the air upward, distributing it through all the nettings M until it finally escapes at the top of the box.

At each end of the air box or tank B are rollers O, placed in pairs at different heights, around which are stretched endless nettings M. The top netting is three or more inches shorter than the air-box, at the far end to which the wool or other material is fed on. The netting below is shorter at the opposite end and travels in the opposite direction. The next netting is similar to the top one in length and movement, and so on alternately until the bottom netting is reached, and this one extends the full length of the box and slightly outside through an opening. It is to be noted that the nettings are not limited in number.

The rollers O, on which are stretched the nettings M, are set in motion by means of cog, chain, rope, or belt gear, and can be geared at either one or both ends P P. The rollers O being set in motion carry the nettings M around with them, and the material to be dried, being fed onto one end of the top

netting, is carried its full length, then falls down to a lower netting, which carries it its full length, then falls down to the next lower netting, which carries it its full length to the
 5 opposite end of the box, where the material falls to the next netting below, and so on, until the material reaches the bottom netting, which finally discharges it out of the said air box or tank B in a thoroughly dry
 10 state, caused by its passage on the nettings for a sufficient period through the hot air, the hottest air reaching the wool in its last stage of drying. The rollers O are held by bearings P attached to the side of the air
 15 box or tank B, and are sliding, so as to tighten the nettings, if desired. The top of the said air box or tank B can be open or partly closed as desired. The fire is an ordinary furnace C and is placed under the said delivery-pipe
 20 and between the said suction-pipes E. After leaving the furnace C the flame and heat of the fire are carried by means of a flue under the said air box or tank B down along one side to the far end, where they cross to the
 25 other side, down which they are carried to the funnel or stack. An ordinary ash-pit is provided below the fire for the draft and ashes.

What I claim as my invention is—

1. In an apparatus for drying wool, the
 30 combination of a drying-box, a series of endless foraminous belts therein, rolls carrying

each belt in an opposite direction to the movement of the adjacent belt, the arrangement being such as to enable the wool to pass from any one of said belts to the one next
 35 below, and the lowermost belt being carried at its delivery end through the end wall of the drying-box, a plurality of upwardly and rearwardly inclined ripples arranged in the bottom of the drying-box, a heater, an air-forcing
 40 mechanism for forcing air from said heater into said drying-box beneath the ripples, and a flue leading from the combustion-chamber of the heater beneath the drying-chamber, substantially as described. 45

2. In apparatus for drying wool, the combination with a drying-box, of a furnace arranged near one end thereof, suction-pipes forming the sides of said furnace and opening into the atmosphere at their ends adjacent to the drying-box, a fan blower connected to the opposite ends of said suction-pipes, a heater-chamber forming the top of the furnace and connected at one end with the discharge of said fan-blower, and a flaring delivery-pipe leading from the opposite end of
 55 said chamber to the bottom of the drying-box, substantially as described.

JOHN MCCREATH.

Witnesses:

HENTON MACAULAY DAVEY,
 CHARLES EDWIN DAVEY.