

# O. Terry. Making Wadding.

N<sup>o</sup> 3,881.

Patented Jan. 10, 1845.

Fig. 2.

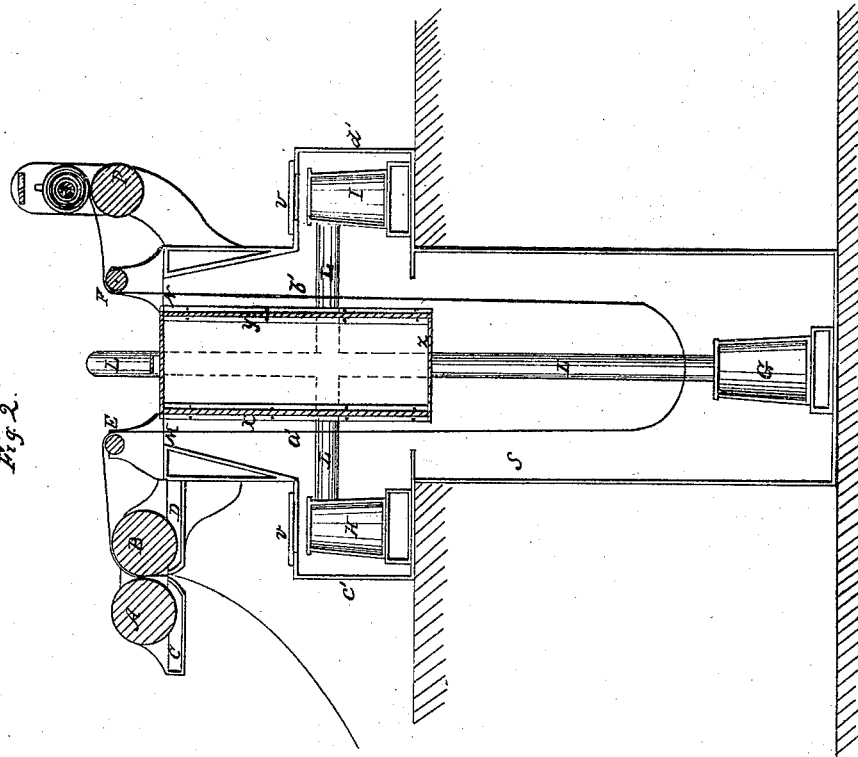
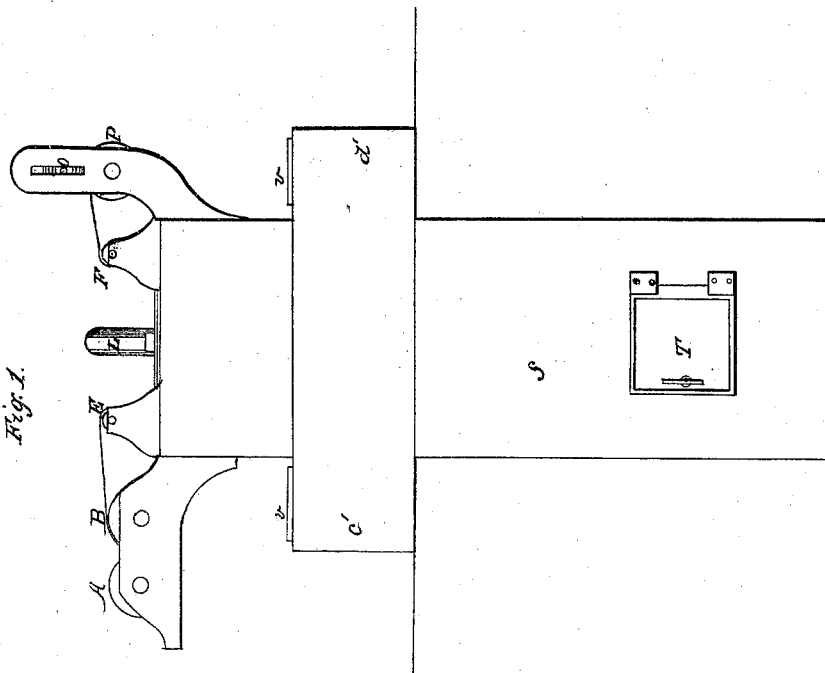


Fig. 1.



# UNITED STATES PATENT OFFICE.

OLIVER TENNY, OF DORCHESTER, MASSACHUSETTS.

## APPARATUS FOR DRYING THE SIZING ON COTTON WADDING.

Specification of Letters Patent No. 3,881, dated January 10, 1845.

*To all whom it may concern:*

Be it known that I, OLIVER TENNY, of  
Dorchester, in the county of Norfolk and  
State of Massachusetts, have invented an  
5 Improvement in Machinery for the Manu-  
facture of Pelisse-Wadding, of the construc-  
tion and operation of which the following  
description and accompanying drawings,  
taken together, constitute a full and exact  
10 specification.

Figure 1 of the drawings above men-  
tioned represents a side elevation of my im-  
proved mechanism—and Fig. 2 is a central,  
longitudinal and vertical section of it.

15 A B (Figs. 1, 2) denote two size rollers or  
cylinders placed parallel to each other and  
transversely of the machine and so as to  
touch or nearly touch each other. Each of  
the said rollers revolve partially within one  
20 of two reservoirs or vats, C, D, placed be-  
neath it and situated a short distance apart  
from and parallel to each other, or in posi-  
tions as seen in Fig. 2 of the drawings. A  
small roller or cylinder E, is placed just in  
25 advance of the cylinder B, and with its top  
on a level or about on a level with that of  
the said cylinder. Another and similar  
roller F, is arranged in advance of the roller  
E as seen in the drawings—each of the said  
30 rollers (E, F,) having journals by which  
they are supported in bearings so disposed  
as to permit of the free revolution of each  
roller upon its axis. Below the rollers E  
and F, I arrange a long apartment S whose  
35 greatest length is in a vertical direction as  
seen in the drawings, the said apartment be-  
ing built up of brick or other suitable or  
sufficiently incombustible material. Within  
the said apartment I arrange or place one  
40 or more stoves G, H, I, and suitable dis-  
charge flues L, &c., leading therefrom by  
which the atmospheric air in the apartment  
may be rendered quite hot or be heated to  
the degree required. Through the top of  
45 the apartment and directly below the roller  
E, an elongated orifice or inlet M is  
formed. So, beneath the other roller, and  
through the top of the apartment an-  
other orifice or outlet N is made. A ver-  
50 tical partition *x*, is carried downward from  
the inner side of the inlet M, and top  
of the hot air apartment into the interior  
of the said apartment as seen in the draw-  
ing. Another and similar partition *y*, also  
55 extends downward from the inner side of  
the outlet N, and into the interior of the

hot air apartment. The said two partitions  
are carried from one side of the apartment  
to the opposite side and are connected to-  
gether at their lower ends by a horizontal  
60 plate *z*. The object of the partitions *x*, *y*,  
is to form two narrow vertical passages *a'*,  
*b'*, for the discharge of hot air from the  
apartment. For convenience I arrange  
three stoves within the apartment, one (G) 85  
being at the bottom and the other two  
(H, I) being at the upper part thereof or  
in side chambers *c'*, *d'*, communicating with  
the apartment S, as seen in Fig. 2. A beam-  
ing apparatus composed of a beam or roller 70  
O resting upon and revolved by a cylinder  
P, is placed just in advance of the roller F,  
as seen in the drawings. A register door T  
is placed at the lower end of one side of the  
apartment S for the purpose of admitting 75  
air and supplying the stoves with fuel as  
may be required. Other register doors, *v*,  
*w*, are arranged in the sides of the apart-  
ment S, and over or near the stoves H, I,  
as seen in Fig. 2 and for similar purposes. 80

In the use of the above mechanism, one  
end of a bat of cotton which has been previ-  
ously made by any of the known modes of  
manufacturing such, is passed upward be-  
tween the size vats D, D, and size rollers 85  
thereof, the said vats being supposed filled  
with or containing size. From thence it is  
carried over the guide roller E, thence drop-  
ped downward through the opening M,  
passed through the passage *a'*, into the dry- 90  
ing apartment, and is then continued down  
so as to nearly touch the top of the stove G,  
in the said apartment. From thence it is  
turned upward and passed out of the apart-  
ment through the passage *b'* and the outlet 95  
N, and over the guide roller F, and thence  
to, and is wound upon the beam O before  
described.

In the passage of the bat between the size  
roller, the paste or size is applied to both 100  
sides of it and as the said bat passes through  
the passages *a'* and *b'* and the drying room,  
it is dried without the employment of con-  
veyors or endless chain aprons or any de-  
vices of like character which have been here- 105  
tofore employed in other machinery for the  
manufacture of wadding, and which from  
the peculiar construction and manner of  
using such become necessary to the com-  
plete operation of it. A great difficulty is 110  
experienced in the use of such conveyors or  
endless chain aprons in consequence of the

bat often adhering to them to such degree so as to tear or injure it, as to render large quantities of it unfit for the market. So great is the evil resulting from the use of  
5 conveyors or chain aprons within the hot rooms or drying apparatus, that often as much as twenty-five per cent of the wadding made will be so badly sized or injured by adhering to the roller or parts of  
10 the aprons as to destroy it as a marketable article.

By adopting the vertical elongated drying apparatus as before described and running the wadding through it in vertical  
15 directions in the manner set forth, it is found, contrary to the expectations of almost every one, that the current of hot air rushing up through the passage *a'*, so dries the bat as to give sufficient tenacity to prevent the weight  
20 of it from breaking it or causing it to fall apart. The air, as it becomes heated in the apartment S, rises therein and rushes in a powerful current through the passage *a'* and against the wet surfaces of the bat  
25 which are in the immediate vicinity of the roller E, and so dries them as to give strength to the bat to sustain itself without breaking. A current of hot air thus applied to the bat near to or immediately on its departure from the size rollers, effects a very  
30 important improvement, inasmuch as it enables me to do away with all machinery, such as steam drying cylinders, chain aprons, conveyors generally used, to aid the  
35 drying of the bat, the effects of which I have herein before described. The bat is

thus immediately on leaving the size rollers partially and sufficiently dried to give it tenacity or strength to sustain itself. In its passage through the apartment and out of  
40 the same through the passage *b'*, the drying process is completed. The vertical apartment with its discharging passages *a'*, *b'* enables me to effect a great saving in fuel in comparison with the quantity burnt in the  
45 common drying rooms and apparatus which has been heretofore in use in the manufacture of wadding.

My invention, and therefore what I claim, consists in the manner in which I effect the  
50 drying of the sized bat without the employment in the drying apartment of chain aprons or conveyors, such as are generally used therein, viz., by means of the long vertical apartment S, (for the reception of  
55 the bat and hot air) and (in combination with) a passage or flue *a'* (for the discharge of the air in a current) proceeding from the upper part thereof; the same being arranged with respect to the size rollers, and the bat  
60 being carried through the said passage and into the hot air apartment and out of the latter through a passage *b'* or outlet and received and wound upon a beam substantially as herein before set forth.  
65

In testimony whereof, I have hereto set my signature this third day of December A. D. 1844.

OLIVER TENNY.

Witnesses:

R. H. EDDY,  
CALEB EDDY.