

*I. Hayden.
Picker.*

N^o 18,742.

Patented Dec. 1, 1857.

Fig. 1

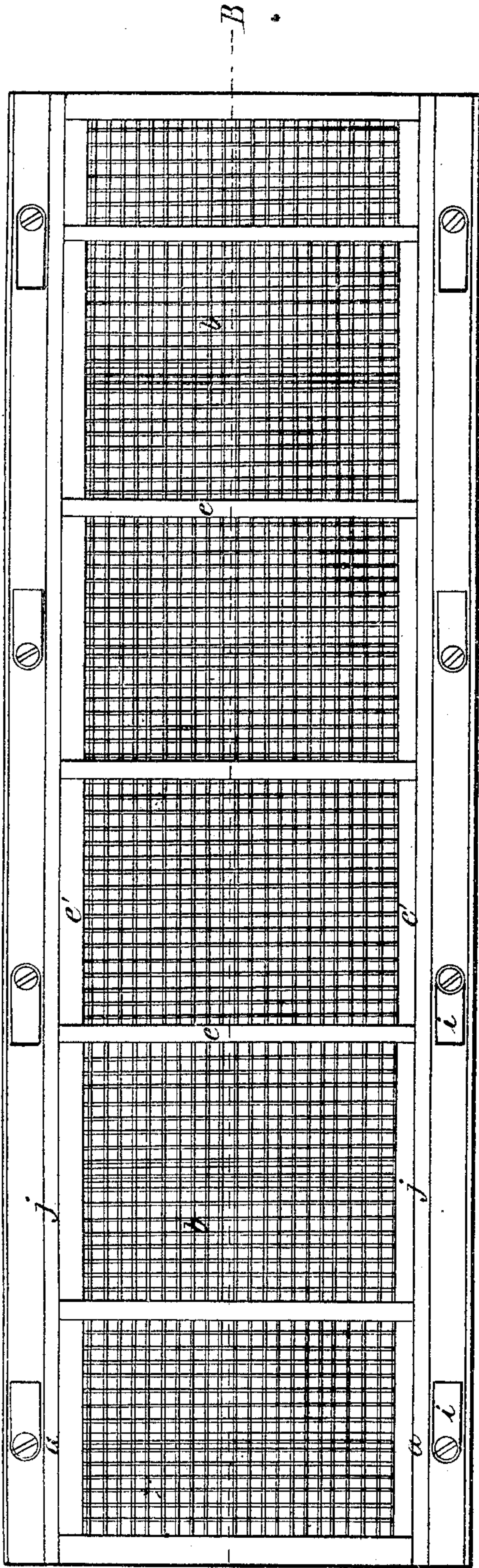
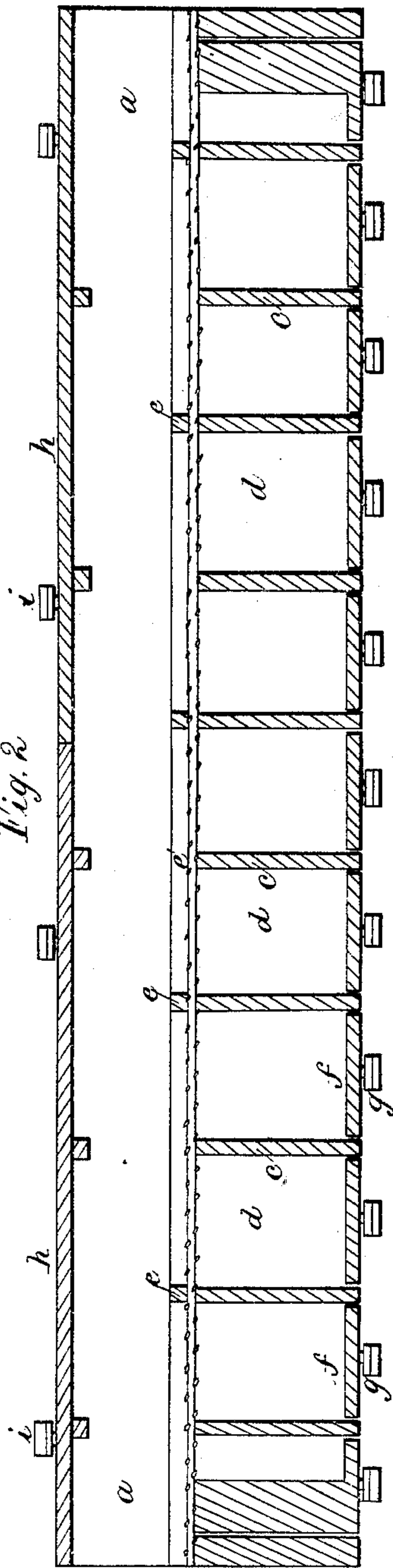


Fig. 2



UNITED STATES PATENT OFFICE.

ISAAC HAYDEN, OF LAWRENCE, MASSACHUSETTS.

LONG TRUNKS FOR CLEANING COTTON.

Specification of Letters Patent No. 18,742, dated December 1, 1857.

To all whom it may concern:

Be it known that I, ISAAC HAYDEN, of Lawrence, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Elongated Trunks for Cleaning Cotton and other Fibrous Substances and for Separating Hair from Fur; and I do hereby declare that the same is described and represented in the following specifications and drawings.

To enable others skilled in the art to make and use my improvement I will proceed to describe its construction and use, referring to the drawings, in which the same letters indicate like parts in each of the figures.

Figure 1 is a plan of an elongated trunk with my improvements the top casing being omitted. Fig. 2 is a sectional elevation of the same through the line A, B, of Fig. 1, the top casing being supplied as shown.

The nature of my invention and improvement in elongated trunks for cleaning cotton and other purposes consists in covering the bottom, or partitions on the bottom with a woven screen, which has the scores formed by the warp crossing the weft, or at the junction of the warp and weft, filled with metal or some kind of cement, so as to prevent the fibers of cotton or other materials being passed over the screen from catching and hanging in said scores.

In the accompanying drawings the sides of a trunk are shown at *a, a*, connected together by cross partitions *c, c*, about one half the height of the sides; between the lower edges of these partitions there are doors *f, f*, which form the bottom of the trunk and are held in their places by the buttons *g, g*, so that they may be easily taken out, to remove the waste and refuse matter that collects upon them. The top of the trunk is also covered with doors *h, h*, fastened by the buttons *i, i*, as shown in the drawing, *j, j*, rebates in the tops of the sides for the ends of the doors *h, h*.

The woven screen *b, b*, is fastened over or on the top edges of the partitions *c, c*, by means of cleats *e', e'*, fastened to the sides *a, a*, or otherwise. This woven screen *b, b* may be made of wire or twine, but the best screen for cleaning cotton, so far as I have tried them, are made of wire about number twenty-two, woven square about one eighth of an inch from center to center of the wires, or eight wires to the inch each way. To prevent the fibers of cotton or other ma-

terial blown over the screen from catching and hanging in the scores between the wires formed by the warp crossing the weft, or at the junction of the warp and weft, I fill said scores with melted metal, by dipping the woven wire into it; the metal used may be tin or a composition of tin and lead. This woven screen may have the scores in it filled with varnish, made by dissolving gum shellac in alcohol, and applying it with a brush upon one or both sides; if only one side it should be the top, the screen being placed in a horizontal position when it is varnished and allowed to remain in that position until it is dry. It should be brushed crosswise in applying the first coat of varnish and lengthwise in the second, so as to fill all the scores in each direction with varnish. Instead of the varnish mentioned some other kind of varnish or cement which will answer the purpose may be used. The partitions *c, c*, may be placed about six inches apart and if necessary or desirable some deflecting cleats *e, e*, may be fastened on the screen over each alternate partition and there may also be some deflecting cleats fastened to the under side of the top, midway between the deflecting cleats on the screen, so as to give the blast blown through the trunk a serpentine or undulating motion.

A trunk with my improvements may be applied to such machines for beating, picking, scutching and opening cotton, wool, fur and other fibrous substances as can be made to produce either a blast or suction, with or without the aid of a fan, to assist in passing the substances operated on, through the trunk over the screen. When cotton or other fibrous substances are blown over the screen the fibers which are too short to reach across two meshes in the screen pass through it and remain in the spaces *d, d*, between the partitions *c, c*, while the longer fiber is blown over it and passes out of the trunk. As the cotton is blown through the trunk it is separated into small flakes most of the sand, dirt, dust, pieces of leaves and other refuse matter heavier than the cotton is precipitated from it, and passes through the screen remaining in the spaces between the partitions, where there is comparatively little motion to the air, and all the substances above mentioned deposit themselves on the bottom of the trunk between the partitions where they remain until they are removed by taking out the bottom. This

screen separates the dust from the cotton so perfectly and completely, that there is far less dust evolved from it (the cotton) in passing through the subsequent processes of its manufacture. Besides the goods manufactured from cotton cleaned in this apparatus present an appearance so much superior to others as to increase their market value from five to eight per cent., and at the same time the cotton is worked with far less loss in waste than if it was manufactured without this apparatus. And further it enables the manufacturer to make goods of a given quality out of a far cheaper and inferior quality of raw material, than he could do without it. And in addition to these advantages the cards working cotton cleaned in this apparatus will not require more than two-thirds as much grinding as others, so that one third of the expense and labor of grinding the cards is saved; and also one third or more of the wear and tear of the card clothing. The wire or twine used in making the screen and the meshes formed in it may be of such dimensions as will adapt it to the purposes for which it is intended to be used.

I contemplate that a trunk with my improvements may be used to great advantage in separating hair from fur, to make hats; by graduating the blast so as to allow the

hair to fall through the screen, while the fine fur is carried over it; and that it can also be used in machines for cleaning and dressing feathers.

This apparatus not only separates the dirt, dust and refuse matter heavier than the cotton from the cotton, but it also separates the short staple from the long; the short staple or fibers pass through the screen, while the long staple or fibers are blown over it.

I believe I have described and represented the construction and use of the improvement which I have invented so as to enable any person skilled in the art to make and use it; also some of the uses to which it may be applied.

I will now specify what I desire to secure by Letters Patent to wit:—

I claim—

Covering the partitions of an elongated trunk or box, for cleaning cotton and other fibrous substances, with woven wire having the scores formed by the weft crossing the warp of said wire screen, filled with metal or cement, the whole combined in the manner and for the purposes set forth in the foregoing specification.

ISAAC HAYDEN.

Witnesses:

GIDEON WILKINS,
ROBERT CROSS.