

# "American" Dust Arresters

## CLOTH SCREEN TYPE

Clean air in a building promotes the efficiency of workmen, prevents unhealthful conditions arising from dust, and lengthens the life of machinery.

Over 99% by volume, actually measured, of suspended dust from sand blast equipment has been removed from air by passing it through an "American" Arrester.



**The American Foundry Equipment Co.**  
INCORPORATED

366 Madison Avenue, New York

PHILADELPHIA

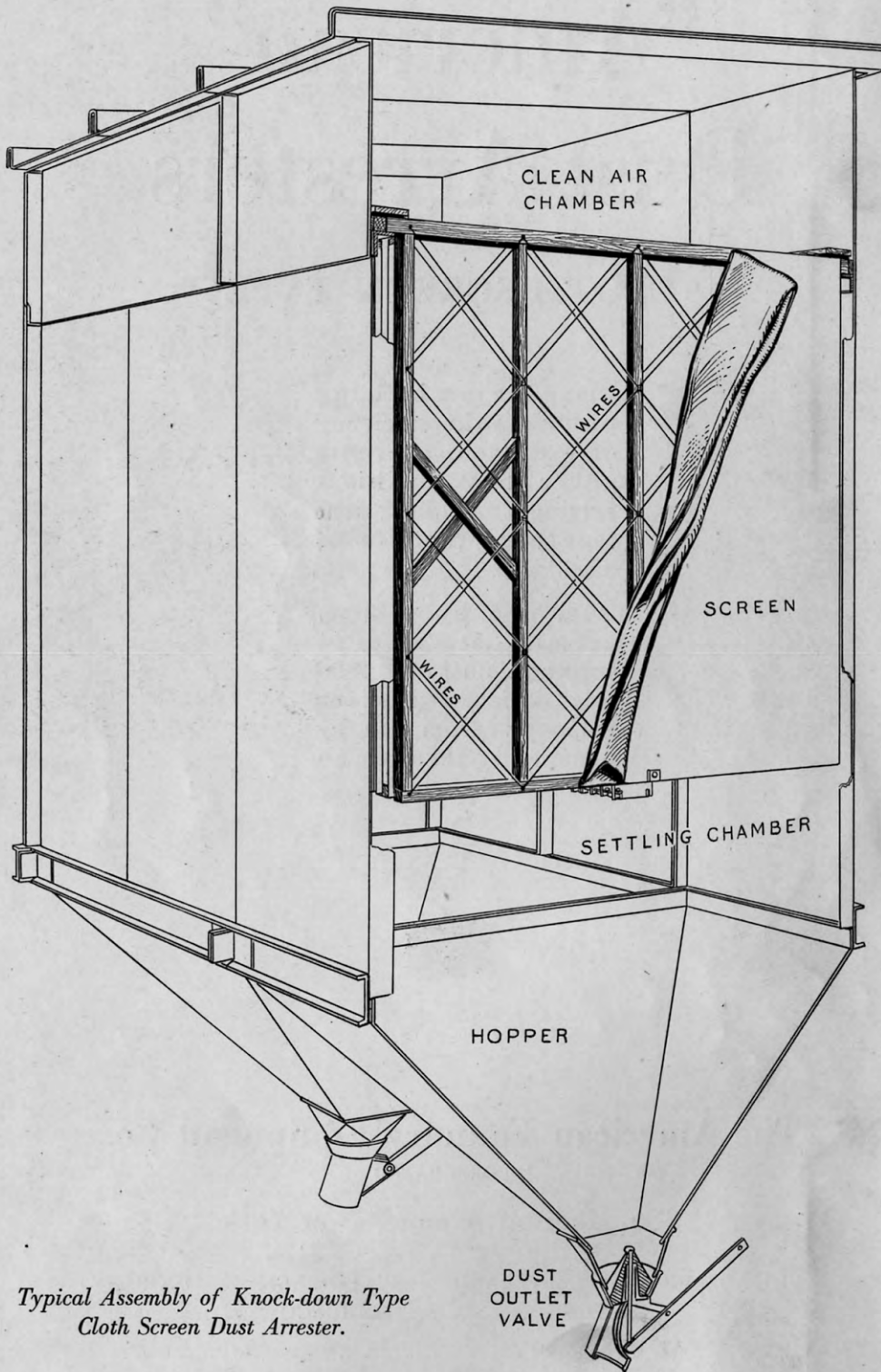
CLEVELAND

PITTSBURGH

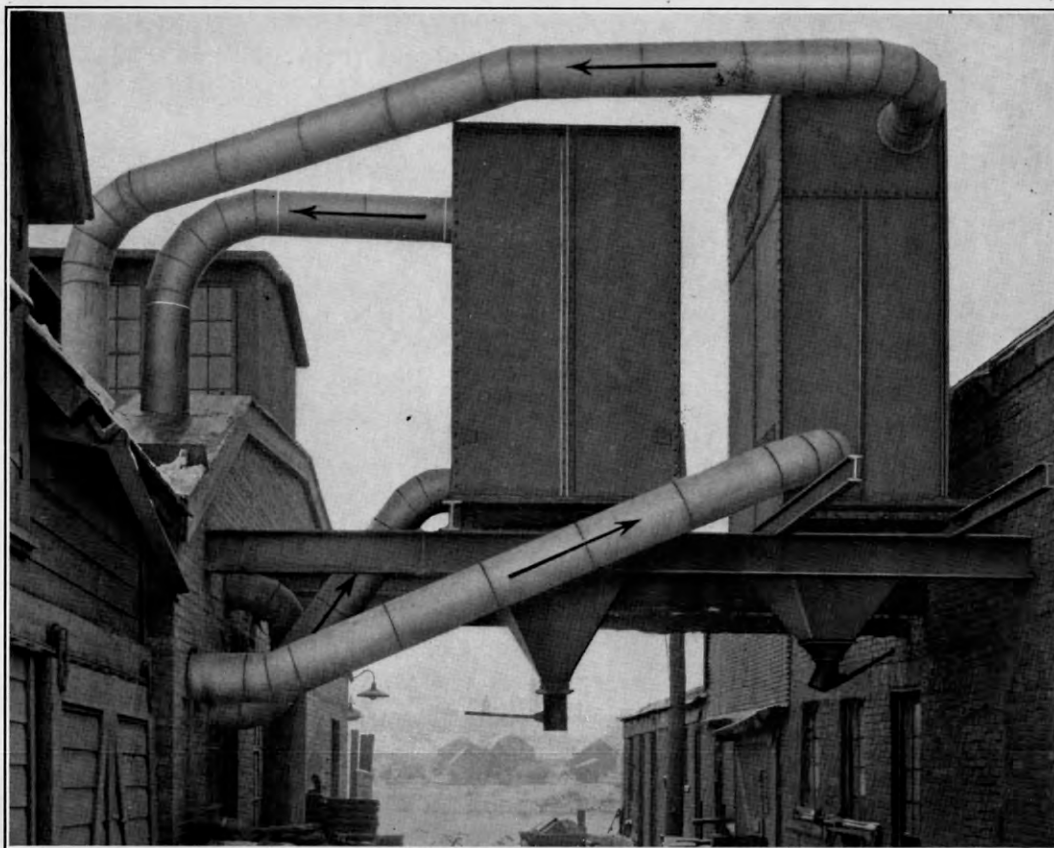
DETROIT

YORK

CHICAGO



*Typical Assembly of Knock-down Type  
Cloth Screen Dust Arrester.*



*Two "American" Dust Arresters Installed over Driveway.  
Assembled Type and Knock-down Type.*

## Dust Arresters

### "American" Cloth Screen Type



THE simplest and most efficient of the inexpensive methods of cleaning dust from ventilating air is that of the cloth screen dust arrester.

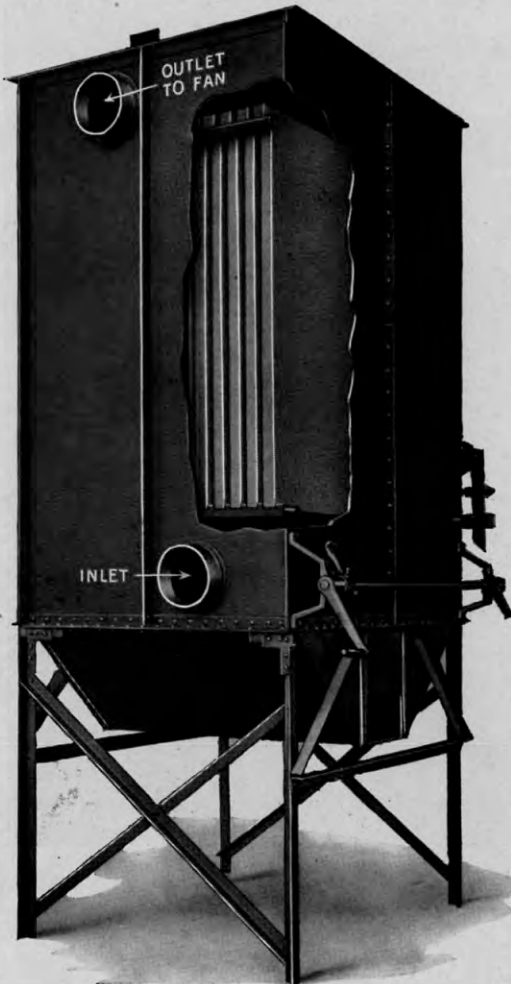
The action is thorough; almost every trace of dust is removed, and the air can be discharged back into the building. The heat lost by a system exhausting only 5,000 cubic feet per minute directly into the open air in freezing weather is about equivalent to one and one-half

tons of coal per month. This can be saved with an "American" Dust Arrester arranged to discharge inside the building.

The first cost is not high and the expense of upkeep is almost nothing. The life of the screens is practically unlimited if properly cared for, and the only moving part is the mechanical device for vibrating the screens.

There are no vanes that need attention. Occasional painting is the only maintenance.





*Small Assembled Dust Arrester Showing Hoe-Type Hopper and Hand-operated Rapper.*

The arrester may be located outdoors or inside a building, and its rectangular shape lends itself to any out-of-the-way location where space is not valuable.

### ***Cloth Screens Filter the Air***

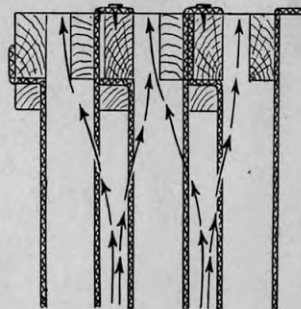
The dust laden air enters a settling and expansion chamber at the base of the arrester, from which it flows uniformly upward between sheets of a specially manufactured cloth. The heaviest particles of dust fall immediately into the hopper. The lighter particles—

“float dust”—are caught by the cloth as the air filters through into the top chamber from which it is exhausted by a fan.

### ***Self-Cleaning Vibrating Screens***

The pores of the cloth gradually accumulate dust and to maintain efficient ventilation they must occasionally be cleared by a mechanical jarring device which raps the cross pieces that space the bottom of the screens, shaking the dust from the cloth.

The most convenient rapper is an air-operated device, contained either inside or outside the housing, and which may be operated at will from inside the building. The hand-operated rapper can be fitted with a pulley to drive by a belt, or a chain and sprocket can be arranged to operate it from a distance. Rapping twice a day will usually keep the screens clear of accumulations.



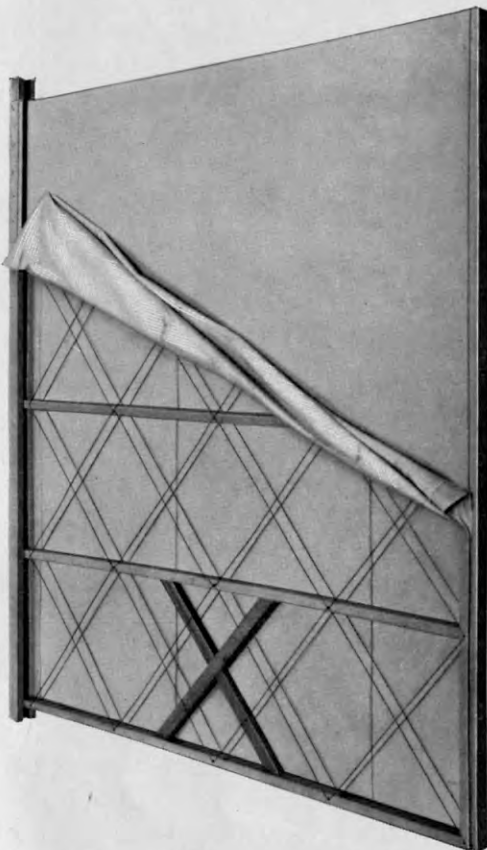
*Top Joint Seal*

The top joints of the screens are double lapped and held rigidly in place thereby sealing them air-tight. The air passages are full width clear to the top and rapping clears the dust from the top area of the cloth as well as from the lower area. There are no V-shaped crevices that might choke with dust.

### ***Inspection Doors Provided***

Inspection doors with dust-tight rubber rims are provided for both top and bot-

tom chambers to give a means of access without dismantling the arrester.



*"American" Screen with Cloth Rolled Back to Show Construction.*

### **Screen Construction**

The very heart of any dust arrester is the screen assembly. All "American" screens are rigidly constructed of carefully selected materials that give many extra years of life.

The screen cloth is evenly stretched and folded double where fastened to the wooden frame.

Copper covered wires are stretched to lie against and vibrate in contact with the screen cloth, thoroughly clearing the

meshes each time the rapper is operated.

The screen cloth is held at the top by cleats, forming a dust-tight seal that will not open under any operating conditions however severe.

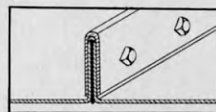
### **Effective Area is Less Than "Screen Area"**

Purchasers should be sure to determine how much of the cloth area of a dust arrester is actually free for the passage of air. The areas occupied by the screen frame and cross bracing will not allow air to pass and should be deducted from the "screen area" to give the net effective area.

"American" Arresters are all rated on a basis of the net screen area through which the air can pass.

Don't be "short changed" through buying on a "screen area" basis when you think you are buying net effective area.

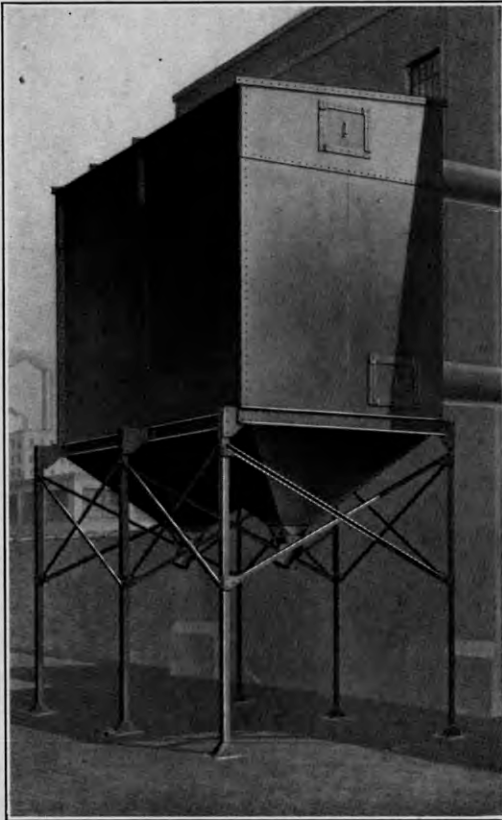
### **No "American" Casing Ever Collapsed**



Assembled dust arresters are built of heavy gauge sheets, reinforced with angle iron frames for rigidity.

Knock-down arresters have integral stiffening ribs, both vertical and horizontal, to prevent collapse. Bases are rigid frames of channels, into which the leg supports engage.

All joints are double lapped as shown to form an air-tight seal, and roofs are pitched to shed water. Inlet and outlet openings can be placed to suit conditions of the job.



*Two-section Knock-down Dust Arrester  
with Standard Steel Supports.*

### ***Removable Hoppers***

The type shown above is used for all arresters except the smallest, which have hoe type hopper with vertical dust slide. Hoppers can be unbolted and removed to provide for replacing screens.

### ***Self-Closing Dust Outlet Valve***

The dust outlet valve is built of cast iron for years of service—no light sheet metal pieces to wear, bend or jam.

When operating lever is released the cone shaped plug seats automatically on a rubber gasket and forms an air-tight joint. This serves a double purpose; there is no air leakage by a partially seated valve to impair the efficiency of

the fan, and outside moisture or dampness is not drawn in. Such dampness would be likely to rot the screen cloth in time.

The dust valve can be closed before the hopper is wholly emptied and the cone will still seat and make a tight joint. It is not necessary to wait until all the dust has been discharged.

The valve is built with either straight outlet pipe or 45° bend, as desired.

### ***Where to Locate The Arrester***

The arrester can be mounted wherever convenient, high up among the roof trusses, over the sand blast room, or in the yard to empty into wagons. I-beams between buildings sometimes support it over a passageway, or cantilever beams projecting from one building can be used. The operation of the arrester itself imposes no limit to the location either indoors or outside.

### ***Sturdy Steel Supports***

A steel support such as shown on this page can be furnished for any size arrester. This is a cross-braced set of columns that bolt to the channel base of the arrester. They can be supplied in any height up to 12 feet. The standard height is 10 feet.

### ***The Question of Capacity***

Only general rules can be given for the size of a dust arrester, for each installation has its own special conditions and a study of the exhaust system is necessary before a definite capacity can be determined with satisfaction.

Dry dust from a sand blast or tumbling mill requires a different sized arrester than dust such as carbon black, or litharge, which is very fine. The latter chokes the meshes of the screen



**DUST ARRESTERS :: AMERICAN CLOTH SCREEN TYPE**

and tends to cake and cling thereby reducing the capacity of the arrester to about one-fourth the normal rating.

The proportion of dust in the air affects the capacity more than any other single factor, and its determination calls for practical experience. "The dirtier the air the larger the arrester."

By using an extra large arrester one can reduce the air friction and thereby reduce the power consumption in many cases more than half. This saving in power and the saving in cost of a smaller motor may pay the cost of the larger arrester in a very short while.

A representative of this Company should be consulted before a decision is finally made on the capacity of the Cloth Screen Arrester.

**Standard Dimensions**

Knock-down Dust Arresters are approximately 8 feet wide and 11 feet high above the hoppers. From the top of the hopper to the bottom of the dust valve adds about 4 feet to the height, making an overall height of slightly over 15 feet. The length varies from 3 feet upward, by even feet, according to capacity.

**TABLE OF KNOCK-DOWN DUST ARRESTERS**

Length in Feet	Net Effective Screen Area Sq. Ft.	Net Effective Screen Area Units	Number of Screens	Number of Hoppers	Length in Feet	Net Effective Screen Area Sq. Ft.	Net Effective Screen Area Units	Number of Screens	Number of Hoppers
3	840	84	12	1	18	6090	609	87	3
4	1190	119	17	1	20	6790	679	97	3
5	1540	154	22	1	22	7490	749	107	4
6	1890	189	27	1	24	8190	819	117	4
7	2224	224	32	1	26	8890	889	127	4
8	2590	259	37	2	28	9590	959	137	4
9	2940	294	42	2	30	10290	1029	147	5
10	3290	329	47	2	35	12040	1204	172	5
12	3990	399	57	2	40	13790	1379	197	6
14	4690	469	67	2	45	15540	1554	222	7
16	5390	539	77	3	50	17290	1729	247	8

Width, all sizes, about 8 feet. Height, without hopper, all sizes, about 11 feet. A "unit" of screen cloth is ten square feet.

**TABLE OF ASSEMBLED DUST ARRESTERS**

Net Effective Screen Area		Width	Length	Height	Outlet & Inlet Pipe Sizes	No. of Screens	No. of Hoppers
Sq. Ft.	Units						
250	25	2' 6"	4' 6"	9' 1"	7"	8	1
500	50	2' 10"	5' 6"	10' 0"	10"	11	1
750	75	4' 6"	5' 6"	10' 3"	10"	16	1
1000	100	5' 0"	5' 6"	11' 6"	13"	21	1
1250	125	6' 8"	5' 6"	12' 0"	13"	26	1
1500	150	8' 9"	5' 6"	13' 1"	15"	32	1
1750	175	9' 2"	4' 8"	15' 6"	15"	38	1
2000	200	9' 2"	5' 2"	15' 1"	15"	20	1

Dimensions in feet and inches.

## AMERICAN EQUIPMENT

### **Sand Cutters**

For any size of floor  
and all kinds of sand

### **Sand Blast**

Barrels  
"Humane" Rooms  
Down Draft Rooms  
Rotary Tables  
Cabinets  
Tanks  
Guns

### **Dust Arresters and Fans**

### **Core Machines and Accessories**

### **Molding Machines**

### **Pattern Compound**

### **Pattern Frames**

### **Snap Flasks**

### **Pouring Jackets**

### **Steel Flask Bars**

### **Charging Buckets**

### **Oven Trucks**

*"Buy Dust Arresters by net square feet of screen cloth, not cubic feet of air."*