To all whom it may concern:

Be it known that I, HERMANN KLUG, a citizen of the Republic of Germany, and resident of Berlin-Hermisdorf, Germany, have invented certain new and useful Improvements in Cyclone Dust Collectors, of which the following is a clear, true, and exact specification, reference being had to the accompanying Drawing.

Heretofore, all dust collectors operating on the cyclone principle have been generally cylindrically, that is, circular in transverse cross section. It is well known that the cyclone dust collector is the most simple to use, with a working coefficient of 80 to 85%, according to the character of the dust. In any event, the cyclone dust collector is most generally used.

A chief object of the invention is to improve upon present-day cyclone dust collectors, and with this end in view, a feature of the invention resides in substituting for the cylindrical casing heretofore in use (generally of sheet iron), a casing of any material whatever (iron, wood, masonry, etc.), with square or rectangular cross section.

Among the advantages of the present invention, the space for the cyclone path is utilized to a far greater extent, as it is square or rectangular cross section. Apart from this, the dead corners, which are always present in cyclones, may, according to the present invention, be utilized to advantage and with technically good effect.

It is furthermore possible to make the new construction of masonry, or other much cheaper material than the expensive sheet metal of the systems now in use. Finally, the operation is much less noisy, as the noise caused by heavy materials, such as shavings and the like, falling against the sheet metal walls is eliminated.

In the drawings, Fig. 1 is an elevation showing the air or gas inlet opening. Fig. 2 a horizontal section through Fig. 1; and Fig. 3 is a vertical section, showing the filter for fine dust.

Dust-laden air or other gas is adapted to enter the vertically disposed dust-collector casing a, through a relatively small inlet opening b, near a corner of the casing, in the direction of one of the four walls of the casing. An angularly adjustable baffle wall or plate d is vertically disposed within the casing, near the inlet opening, at an angle to the direction of travel of the entering air or other gas. The baffle wall is disposed in the horizontal plane of the inlet opening b, near the said one wall, and is adapted to cause the entering current of dust-laden air to deviate its course. The casing a is polygonal in cross section, preferably square or rectangular, or some other polygon having a relatively small number of sides. The interior of the casing, near the baffle plate, is obstructed in the horizontal plane, so as to permit a circular movement of the dust-laden air, as shown by the arrows, in a path determined by the angular position of the baffle plate. The dead corners, during the whirling of the dust-laden air, prove particularly effective separators for the dust from the dust-laden air. Their efficacy may be considerably enhanced by built-in walls or catch plates e that extend from the corners inward towards the whirling dust-laden air. The catch plates e make it certain that the dust thrown against them shall be directed towards the calm regions of the dead corners.

Should it be desired to purify the gas, the cover f of the rectangular or square dust collector may be covered with a dust-catching body consisting of one or more fine filtering layers f which may be cleaned from time to time by hand, or emptied mechanically.

What is claimed is:

1. A dust collector having, in combination, a substantially vertically disposed casing polygonal in cross section, the polygon having a relatively small number of sides, the casing having an inlet opening through which dust-laden air or other gas is adapted to enter the casing, and a baffle plate disposed within the casing near the inlet opening at an angle to the direction of travel of the entering gas, the baffle plate being adapted to deviate the path of the entering gas, the interior portion of the casing near the baffle plate being obstructed from the center of the casing to the sides thereof so as to permit the gas to whirl therein in a path determined by the angular position of the baffle plate, dust being adapted to be removed from the whirling dust-laden gas at the corners of the casing, and the gas being then adapted to travel to the upper portion of the casing.

2. A dust collector having, in combination, a substantially vertically disposed cas-
of square or rectangular cross section, one of the walls of the casing being provided near a corner of the casing with a relatively small inlet opening through which dust-laden air or other gas is adapted to enter the casing, and a baffle plate substantially vertically disposed within the casing near to and substantially in a horizontal plane with the inlet opening near a wall adjacent to the said one wall at an angle to the direction of travel of the entering gas, the baffle plate being adapted to deviate the path of the entering gas, the interior portion of the casing in substantially the horizontal plane of the inlet opening and the baffle plate being unobstructed from the center of the casing to the sides thereof so as to permit the gas to whirl therein in a path determined by the angular position of the baffle plate, the angular position of the baffle plate being adjustable to adjust the path of travel of the whirling gas, dust being adapted to be removed from the whirling dust-laden gas at the corners of the casing, and the gas being then adapted to travel to the upper portion of the casing.

3. A dust collector having, in combination, a substantially vertically disposed casing polygonal in cross section, the polygon having a relatively small number of sides, the casing having an inlet opening through which dust-laden air or other gas is adapted to enter the casing, a baffle plate disposed within the casing near the inlet opening at an angle to the direction of travel of the entering gas, the baffle plate being adapted to deviate the path of the entering gas, the interior portion of the casing near the baffle plate being unobstructed from the center of the casing to the sides thereof, so as to permit the gas to whirl therein in a path determined by the angular position of the baffle plate, and catch plates at the corners of the casing extending from the corners inward towards the whirling dust-laden air to remove dust therefrom, the gas being then adapted to travel to the upper portion of the casing, and the removed dust being adapted to fall to the lower portion of the casing.

4. A dust collector having, in combination, a substantially vertically disposed casing polygonal in cross section, the polygon having a relatively small number of sides, the casing having an inlet opening through which dust-laden air or other gas is adapted to enter the casing, a baffle plate disposed within the casing near the inlet opening at an angle to the direction of travel of the entering gas, the baffle plate being adapted to deviate the path of the entering gas, the interior portion of the casing near the baffle plate being unobstructed from the center of the casing to the sides thereof so as to permit the gas to whirl therein in a path determined by the angular position of the baffle plate, dust being adapted to be removed from the whirling dust-laden gas at the corners of the casing, and the gas being then adapted to travel to the upper portion of the casing, and one or more fine-filtering layers in the upper portion of the casing for purifying the gas as the gas travels upward, the fine-filtering layers being adapted to be cleaned from time to time.

In testimony whereof I herewith affix my signature in presence of two witnesses.

HERMANN KLUG.

Witnesses:

E. HOLTZERMANN,
R. I. AMPERT.