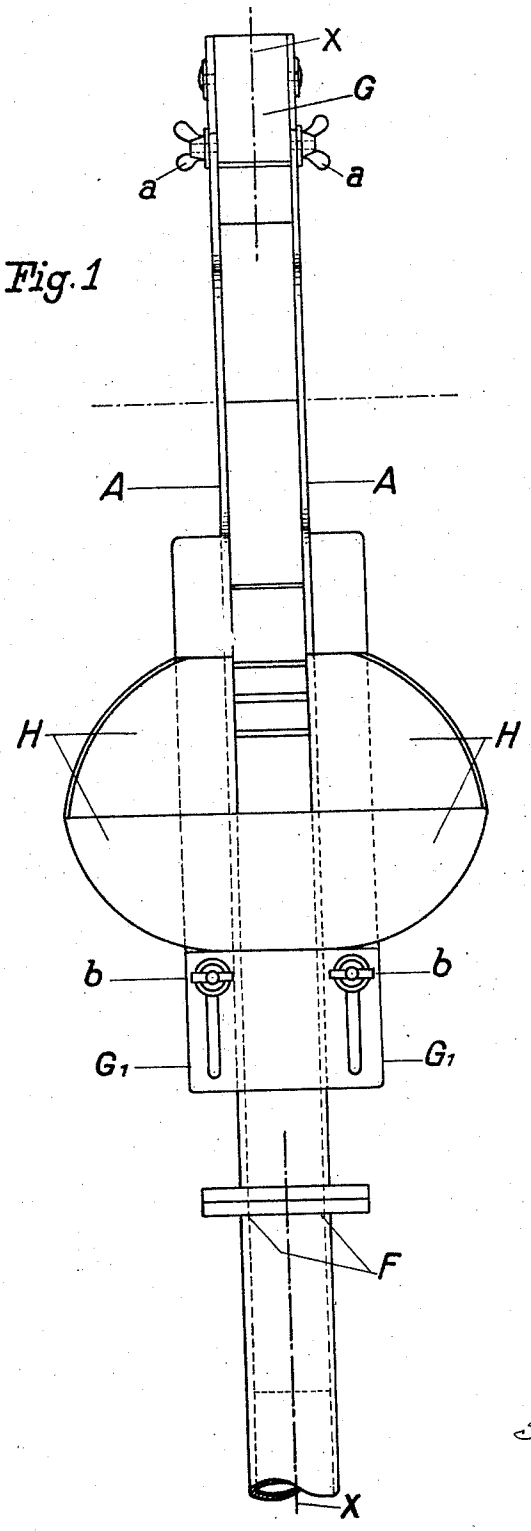
June 6, 1933. P. J. SÉGUI 1,912,660

APPARATUS FOR CATCHING A MOVING VOLUME OF AIR

Filed June 20, 1931 2 Sheets-Sheet 1

Fig. 1



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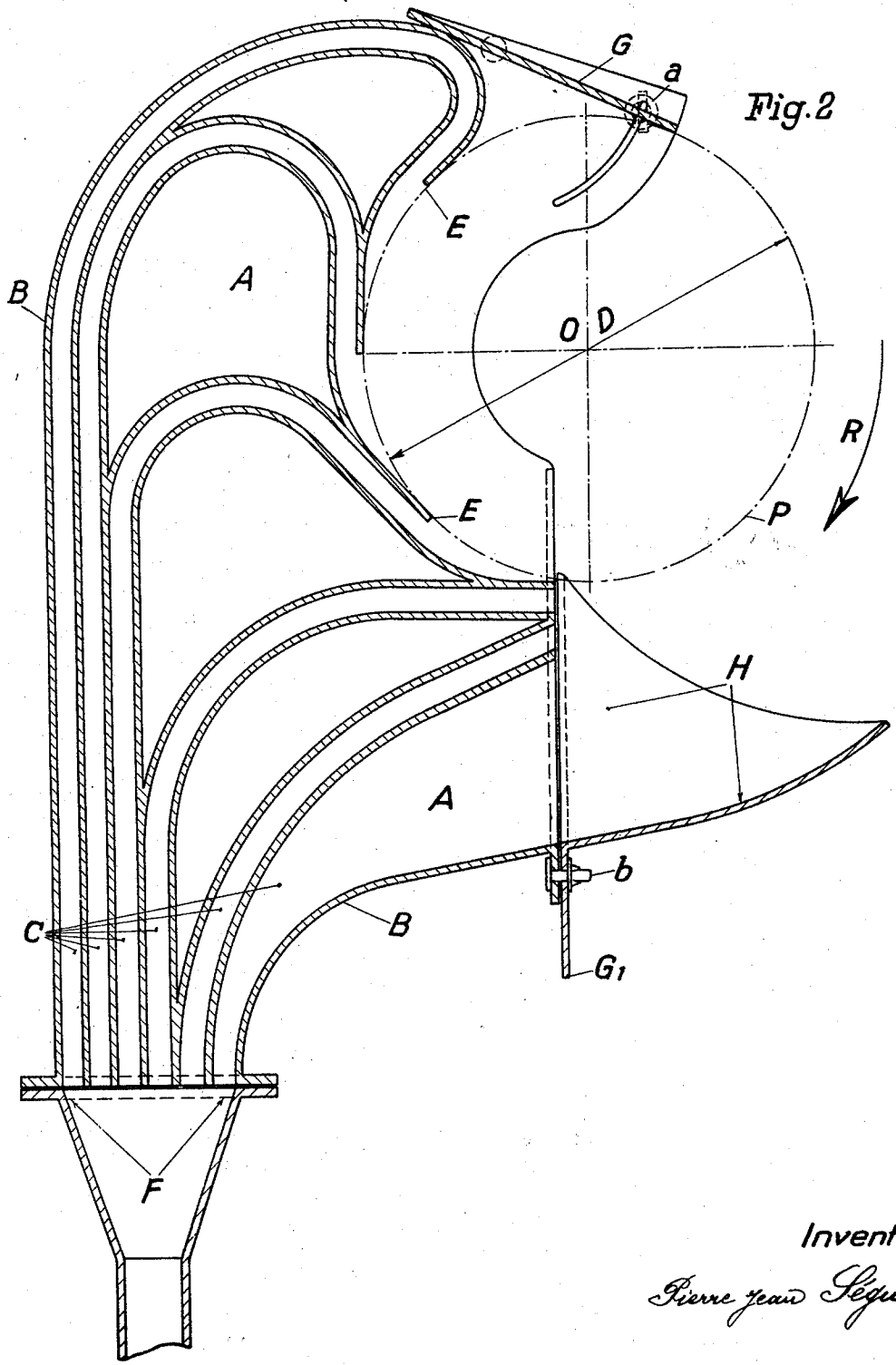


Fig. 2

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Patented June 6, 1933 1,912,660

UNITED STATES PATENT OFFICE

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APPARATUS FOR CATCHING A MOVING VOLUME OF AIR

Application filed June 20, 1931, Serial No. 545,816, and in France July 23, 1930.

The present invention relates to an apparatus for catching a moving volume of air saturated with foreign substances and conducting it away in a certain direction.

One form of the invention is illustrated in the accompanying drawings, in which Figure 1 is a front view of the apparatus according to the invention and Fig. 2, a mean longitudinal section thereof.

In the construction shown the apparatus comprises the two parallel plates A—A interconnected on two opposite sides by the two bands B—B in order to form a casing with two openings.

Inside the casing, vertically to the plates A—A, air supply ducts are provided whose inlets, proceeding from a circular line with the center O and tangentially directed relative to the circular line with center, extend straight for a distance and are then connected with the outlets by curves without any sudden change in their direction and cross section.

It is essential that each of the two walls of each duct inlet be directed tangentially to the circular line with the center O and that the front wall of one duct coincide for a distance with the rear wall of the preceding duct. This feature is absolutely necessary to insure normal functioning of the outfit.

The number of the separating ducts, the size of the section of the casing comprising the circular line with center, and the position of this section on the circular line with the center O may of course be altered according to the results desired or the purpose aimed at.

In the direction of the discharge the casing terminates in a connection F the cross section of which is adapted to that of the ducts.

In the direction of catching, the casing is completed by a hinge flap G in the upper part, which moves between the two plates A—A and can be adjusted by the nuts *a*, *a*.

The casing is further provided at its lower part with the auxiliary casing H carrying an adjusting slide G′ and adapted to be adjusted in its entirety by the nuts *b*, *b*.

The apparatus functions as follows:

The apparatus is guided towards a buffing wheel having the diameter D and rotating in the direction of the arrow R about the center O, the polishing process taking place at the point P of the wheel. The dust produced during polishing is mixed with the air entrained by the rapidly rotating wheel towards the catching casing. Under the influence of centrifugal force this mixture of dust and air detaches itself in tangential directions from the circumference of the wheel, i. e., in the direction of the inlets of the catch ducts. The air-dust mixture then enters the inside of the ducts without any impact effect and, actuated by its kinetic energy, which is maintained by the constant rotation of the wheel, moves toward the duct outlets.

Not all ducts work under the same pressure and in case of the ducts working under full pressure a sufficient vacuum is created at their meeting point to make sure that the other ducts too work at a normal useful effect.

The apparatus according to the invention differs from existing types in so far as both walls of each duct inlet extend tangentially to the circular line with the center O and the front wall of one duct inlet determines the direction for the next inlet above or below while in existing devices only one wall is provided at the inlet of the ducts.

Owing to the arrangement according to the invention, the air enters all ducts without any impact, so that no losses in kinetic energy and no mutual friction of the air during catching are caused.

Furthermore, the cross section of the ducts at full pressure is the same during catching, discharging and over the entire length of the ducts, whereby losses in pressure and speed inside the duct and the formation of injurious eddies are prevented.

The apparatus according to the invention insures the automatic catching and working of a moving volume of air, requires no special driving power and does not produce additional air currents like ordinary ventilators. Its use is therefore more economical and results in better working conditions.

I claim:

An apparatus having a plurality of ducts surrounding an abrading element for collecting dust laden air, the walls of the ducts being as nearly tangential as possible to the path of travel of the periphery of the wheel, said walls extending in a straight line for a substantial distance.

PIERRE JEAN SÉGUI.