(No Model.)

J. B. SCHUMAN.

PNEUMATIC GRAIN CONVEYER.

No. 559,615. Patented May 5, 1896.

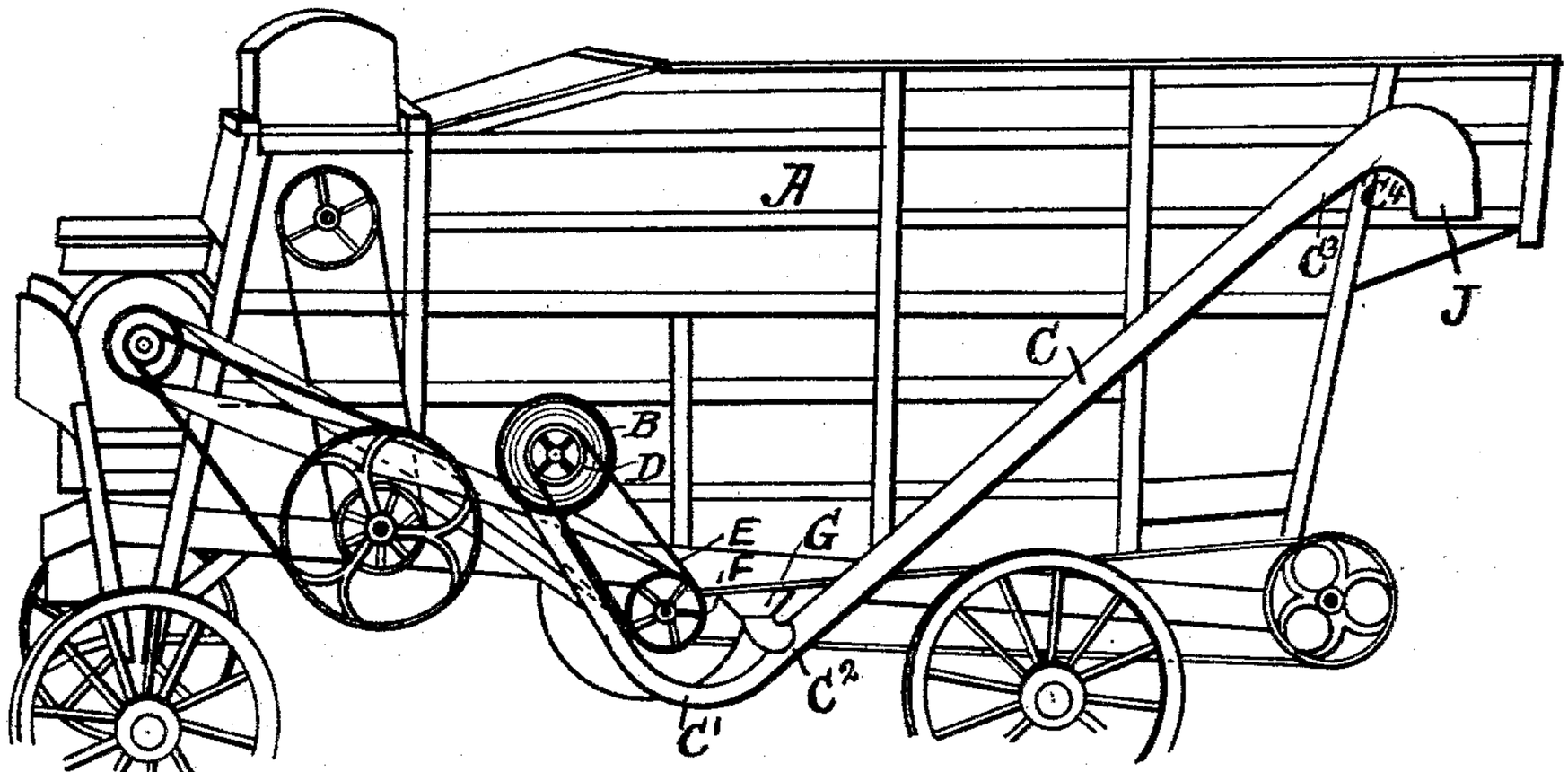

Fig 1.

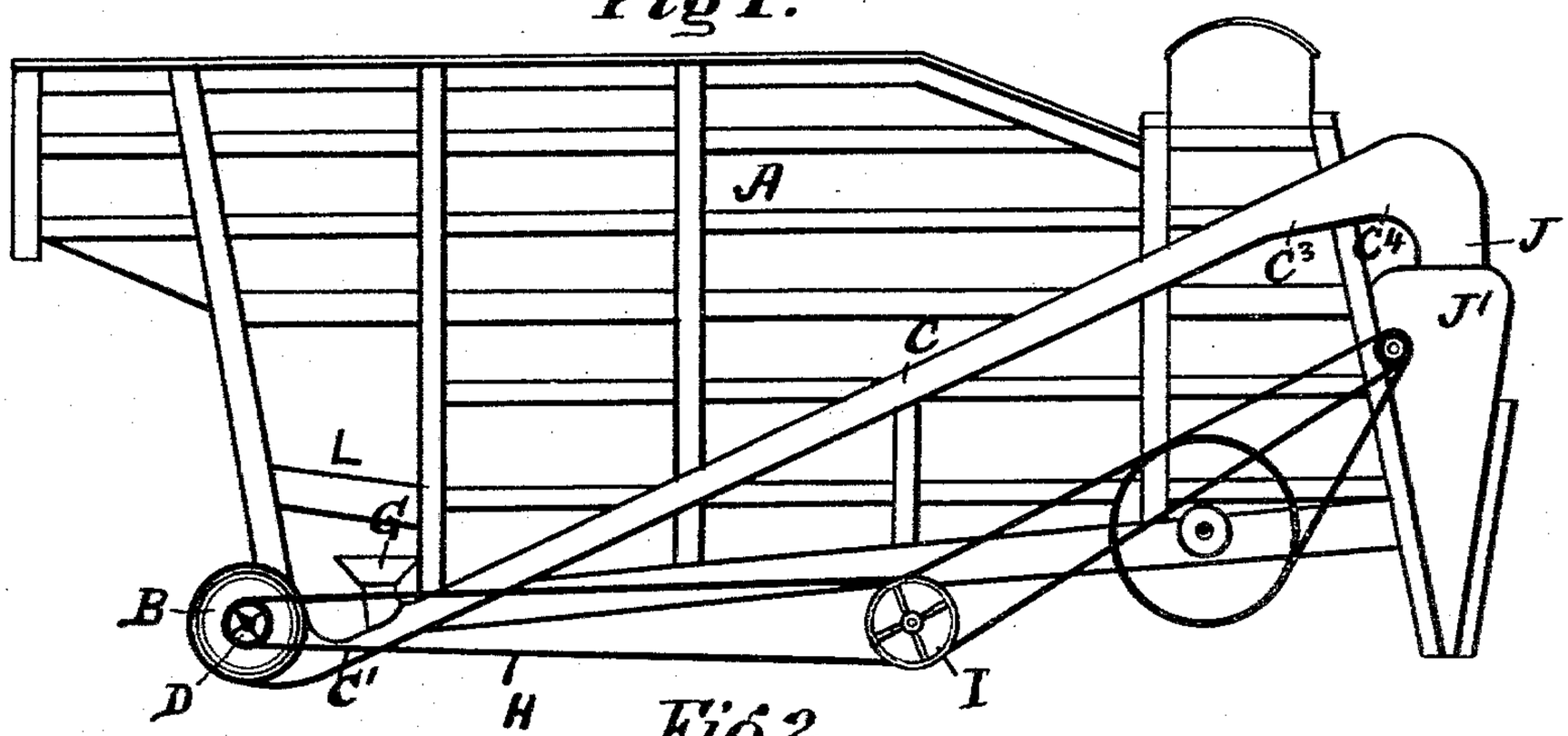

Fig 2.

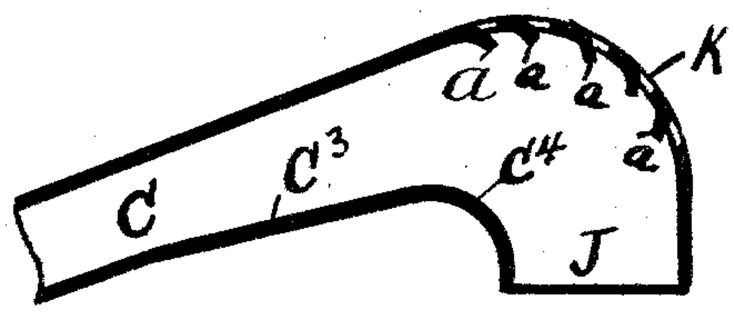

Fig 3

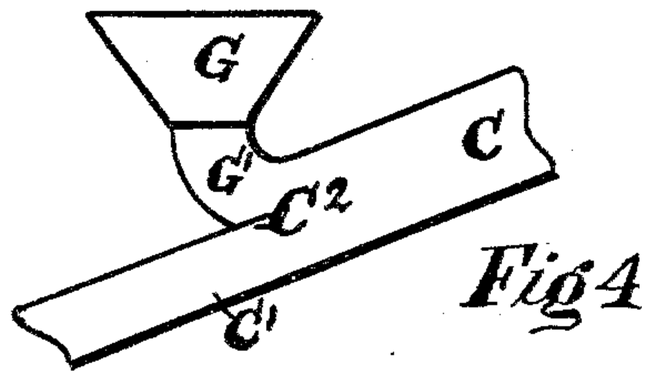

Fig 4

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UNITED STATES PATENT OFFICE.

JAMES B. SCHUMAN, OF COLUMBIA CITY, INDIANA.

PNEUMATIC GRAIN-CONVEYER.

SPECIFICATION forming part of Letters Patent No. 559,615, dated May 5, 1896.

Application filed August 16, 1895. Serial No. 559,547. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. SCHUMAN, a citizen of the United States, residing at Columbia City, in the county of Whitley and State of Indiana, have invented certain new and useful Improvements in Pneumatic Grain-Conveyers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an attachment for grain threshers and separators; and it consists of a peculiar combination of parts comprising a pneumatic conveyer and elevator by which grain is conveyed and elevated after being cleaned to a weigher or bagger or elsewhere, as desired, and will be fully described hereinafter.

The object of my invention is to provide a conveyer that will obviate the necessity of using expensive and troublesome conveyer gearing, belts, chains, and cups or brackets, and my device is simple, cheap of construction, efficient and durable in use. I attain my object by constructing the apparatus as illustrated in the accompanying drawings, in which—

Figure 1 represents a side view of a separator having my conveyer attached; Fig. 2, a view of opposite side of separator with conveyer attached; Fig. 3, a sectional view of portion of conveyer-pipe, showing air-escape; and Fig. 4, a sectional view of portion of conveyer-pipe, showing grain-inlet.

In the drawings, A is a separator; B, a fan-blower attached to same. D and F are belt-pulleys; E, a belt connecting said pulleys; C, the conveyer-pipe; G, the inlet-funnel to conveyer-pipe C, and J the delivery end of conveyer-pipe.

In the construction the pipe C is preferably of round section and made of any suitable metal, usually galvanized iron, and of a length suitable to the separator or other machine to which it is designed to be attached. The part C′ from the fan to the point C^2 is smaller than the part C, which is of uniform size from C^2 to the part C^3, where it begins to gradually enlarge at the bottom and continues enlarging to the discharge end C^4 and J. The funnel G is connected by a curved pipe G′ to the pipe C, intersecting at C^2. At the rounded elbow there are perforations K in the top of pipe, the metal from the perforations being forced inward at front and not cut off at back part, leaving them integral with the wall of pipe, so as to form lips on the inside partially covering the openings in front and totally at rear. The part C′ is connected by any suitable means to the outlet-tube of the fan B. Any suitable form of chute is attached to the side of the separator above and in proximity to the funnel G.

In practical application in Fig. 1 the fan supplies the pipe C′ with air in sufficient quantity to fill it somewhat under compression. The grain is admitted into the funnel G and neck G′, where the air strikes it from behind, forcing it through the pipe C with considerable velocity to the part C^3, where the air and grain begin to separate and the velocity decreases, the grain falling by gravity from the opening J into a weigher or bagger, while the air passes out of the openings K, the lips *a* deflecting any of the grain that may strike the upper part of the elbow in its outward passage. As applied in Fig. 2, the tailings are admitted from the receptacle L into the funnel G and conveyed, as above described, to the receptacle J′, from where they again pass through the separator. The fan B is operated by means of its pulley D, belt H or E, and pulleys F or I, which are driven in the usual manner in such machines.

It is obvious from the foregoing that slight variations in detail may be made and the conveyer used at any angle without departing from the intent and purpose of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a pneumatic grain-conveyer for separators, having a main conveying pipe or tube; of the grain-inlet pipe G′, having the funnel G, of smaller diameter than the said main conveying-pipe connected thereto at its upper side near the receiving end of same, the discharge-opening of said inlet-pipe being toward the discharge end of said main pipe; the air-supply pipe C′ of

smaller diameter than the said main pipe, connected to it below and behind the convex form of said grain-inlet pipe, the bottom line of said air-pipe coinciding with the bottom line of said main pipe so that air from the said air-pipe will enter the larger main pipe behind the grain as it enters the said main pipe; a bend or elbow in said main conveying-pipe near its discharging end, said bend being larger in diameter than the said main pipe, and having the series of perforations K in the top of said bend on its greater radius; the series of angular deflecting-lips *a* partly covering said perforations inside of said bend; the tapering part in said main pipe at its bottom beginning at said bend and decreasing toward the receiving end of said main pipe, substantially as shown and described.

2. In a pneumatic grain-conveyer for separators, having a main conveyer-pipe, the combination of the tapering portion at bottom of pipe near discharge end enlarged from C^3 to C^4; the enlarged discharge-opening J; the elbow having the openings K in top portion of said elbow; the deflecting-lips *a* partially covering said openings on inside of said elbow. substantially as shown and described.

3. In a pneumatic grain-conveyer for separators, having a fan-blower and conveyer-pipe, the combination with said conveyer, of the air-supply pipe C′ connected to said blower; the grain-inlet pipe G′ joining the said air-supply pipe at its discharge end, the two connecting the said conveyer-pipe; the combined area of the said air-supply pipe and said inlet-pipe, being approximately equal to the said conveyer-pipe into which they discharge grain and air; the tapering part in said main pipe from C^3 to C^4; the elbow having the openings K in top of said elbow: the angular deflecting-lips *a* partly covering said openings, substantially as shown and described.

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

JAMES B. SCHUMAN.

Witnesses:
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EDWIN EATON.