No. 784,270. PATENTED MAR. 7, 1905.

A. H. MORTON.

PNEUMATIC CONVEYER SYSTEM.

APPLICATION FILED JULY 13, 1904.

2 SHEETS—SHEET 1.

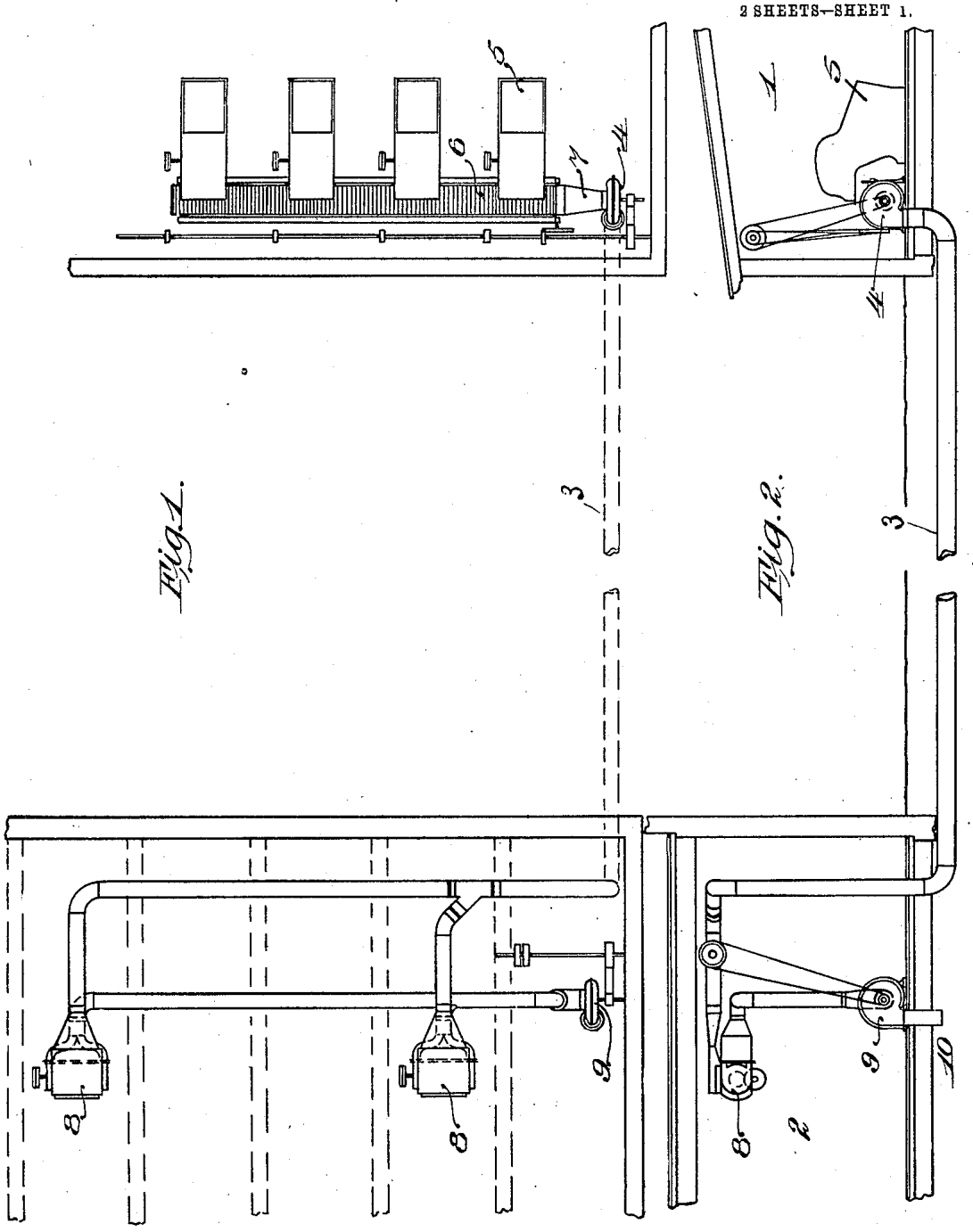

Fig. 1.

Fig. 2.

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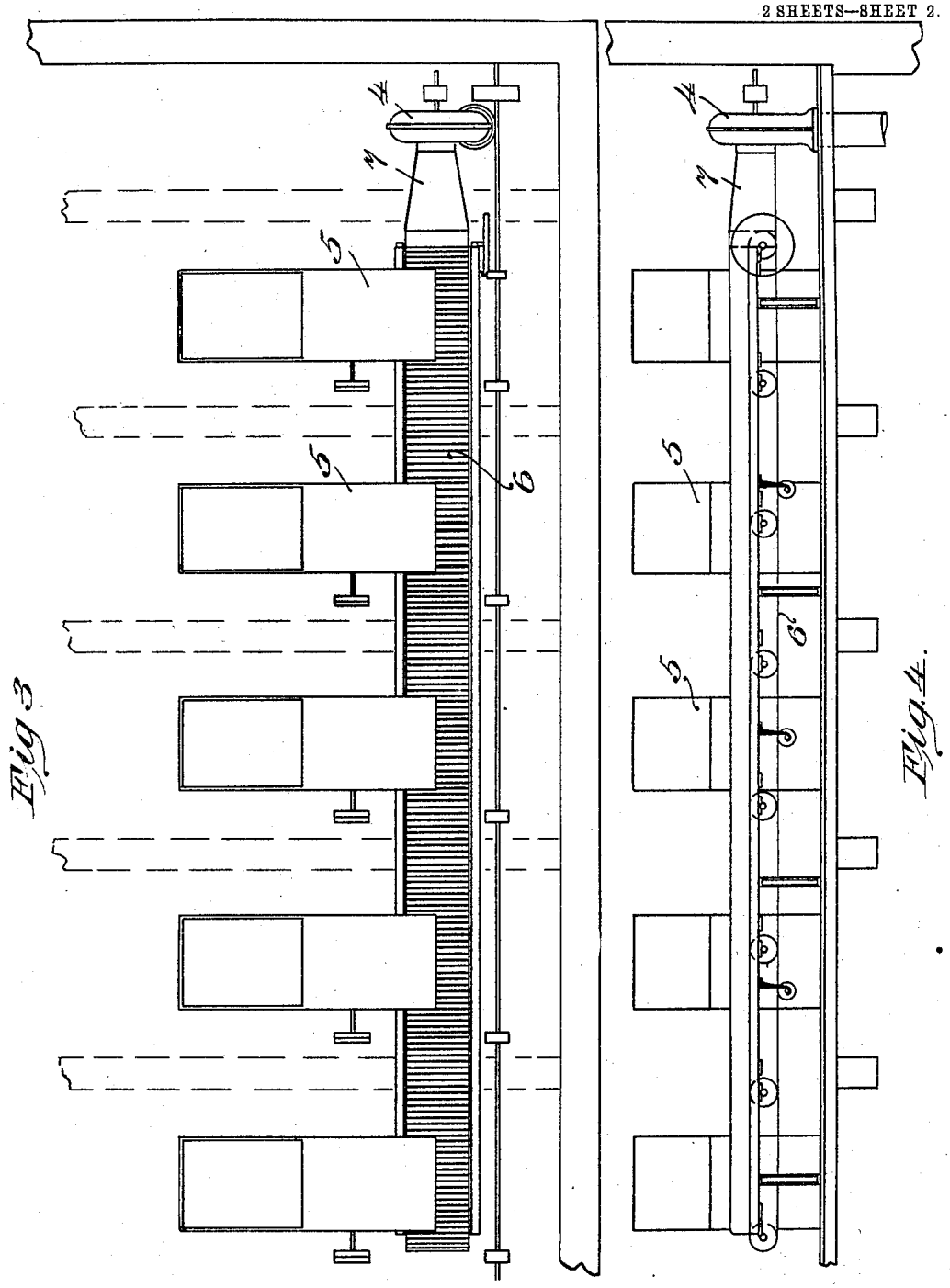

Fig. 3.

Fig. 4.

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No. 784,270. Patented March 7, 1905.

UNITED STATES PATENT OFFICE.

ALBERT H. MORTON, OF LOWELL, MASSACHUSETTS.

PNEUMATIC-CONVEYER SYSTEM.

SPECIFICATION forming part of Letters Patent No. 784,270, dated March 7, 1905.

Application filed July 13, 1904. Serial No. 216,340.

To all whom it may concern:

Be it known that I, ALBERT H. MORTON, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pneumatic-Conveyer Systems; and I do hereby 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.

The present invention relates to improvements in pneumatic-conveyer systems.

In cotton-mills it is customary to store the supply of baled cotton in a building separate from the building in which the preliminary operation of opening is performed and to convey the cotton from the storehouse to the picker-room through a pneumatic tube by means of a draft of air forced through the tube by suitable blowers or exhausters. The cotton as taken from the bale is put into feeders which disintegrate or tear it apart more or less and deliver it uniformly to the pneumatic tube. At the delivery end of the conveyer the cotton is separated from the air by a condenser. The feeders commonly used are of a well-known type, and where a considerable quantity of cotton is handled it is necessary to use several feeders all delivering cotton simultaneously to the tube. It has been customary heretofore to arrange the feeders in a row and to carry the conveyer-tube along the row at the rear of the feeders. Each feeder delivers its cotton into a hopper which discharges through a lateral aperture in the conveyer-tube. In such an arrangement each aperture affords a passage for the ingress of air as well as cotton, and each aperture consequently diminishes the suction and the flow of air at the succeeding apertures. It has been found in practice that not more than three feeders can be successfully used in such an arrangement, owing to the fact that the diminished current of air at the last feeders, where more than three are used, is not sufficient to entrain the cotton delivered by such feeders unless special means are provided for transferring the cotton within the tube. Moreover, it is necessary, even when three feeders are used, to use an excessive air-current in order to entrain effectively the cotton from the last feeder, and this necessitates large blowers and a wasteful expenditure of power, while the limitation of the number of feeders limits the efficiency of the tube, which otherwise could convey a much larger quantity of cotton.

It is the object of the present invention to produce a conveying system in which any desired number of feeders may be made to deliver cotton to a single pneumatic tube and in which the waste of power above pointed out is avoided, while the efficiency of the tube is limited only by its capacity, and to this end the invention contemplates the use, with a pneumatic tube and a condenser, of a gang of feeders and means for collecting the cotton from the several feeders and delivering it all at one point into the pneumatic tube. The means most suitable for this purpose is an endless moving apron onto which the feeders discharge the cotton and which in turn discharges into a hopper attached to the end of the pneumatic tube; but the invention in its broader aspect is not limited to the use of an apron, since it contemplates any means for collecting the cotton from the several feeders, the gist of the invention residing in the arrangement by which the cotton is delivered to the tube at a single point instead of at several openings among which the indraft of air is divided.

In the drawings, Figure 1 is a plan view of a conveyer system embodying the present invention, and Fig. 2 is a sectional elevation of the same. Fig. 3 is a plan, and Fig. 4 a rear elevation, of the feeders, the apron, and the receiving end of the pneumatic tube.

In the illustrated embodiment of the invention the storehouse 1 and the picker-room 2 are connected by a pneumatic tube 3. The blower 4 forces a current of air through the tube. The feeders 5 are arranged in a row and discharge upon a moving endless apron 6 at the rear of the feeders. The apron discharges the cotton into a hopper 7, whence it passes through the blower 4 and thence into and through the pneumatic tube. The cotton is discharged from the tube into the condens-

ers 8, which may be of any usual or suitable form, and the cotton is here separated from the air-blast and discharged from the condensers, the air being exhausted from the condensers by an exhauster 9 and discharged into the dust-room 10.

Although the invention has been described particularly with regard to its use in conveying cotton, it is obvious that it is not limited thereto, but may be used in conveying any fibrous material adapted to be handled by automatic feeders and a pneumatic tube.

What is claimed is—

A conveyer system for cotton-mills, having, in combination, an open-ended pneumatic conveyer-tube, a gang of feeders for disintegrating the bale-cotton, collecting means for collecting the cotton from the feeders and discharging it into the open end of the conveyer-tube, and a condenser at the delivery end of the tube, substantially as described.

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

ALBERT H. MORTON.

Witnesses:

HORACE VAN EVEREN,

F. A. WILCOX.