

(No Model.)

2 Sheets—Sheet 1.

J. DICK.
STRAW CUTTER.

No. 356,751.

Patented Feb. 1, 1887.

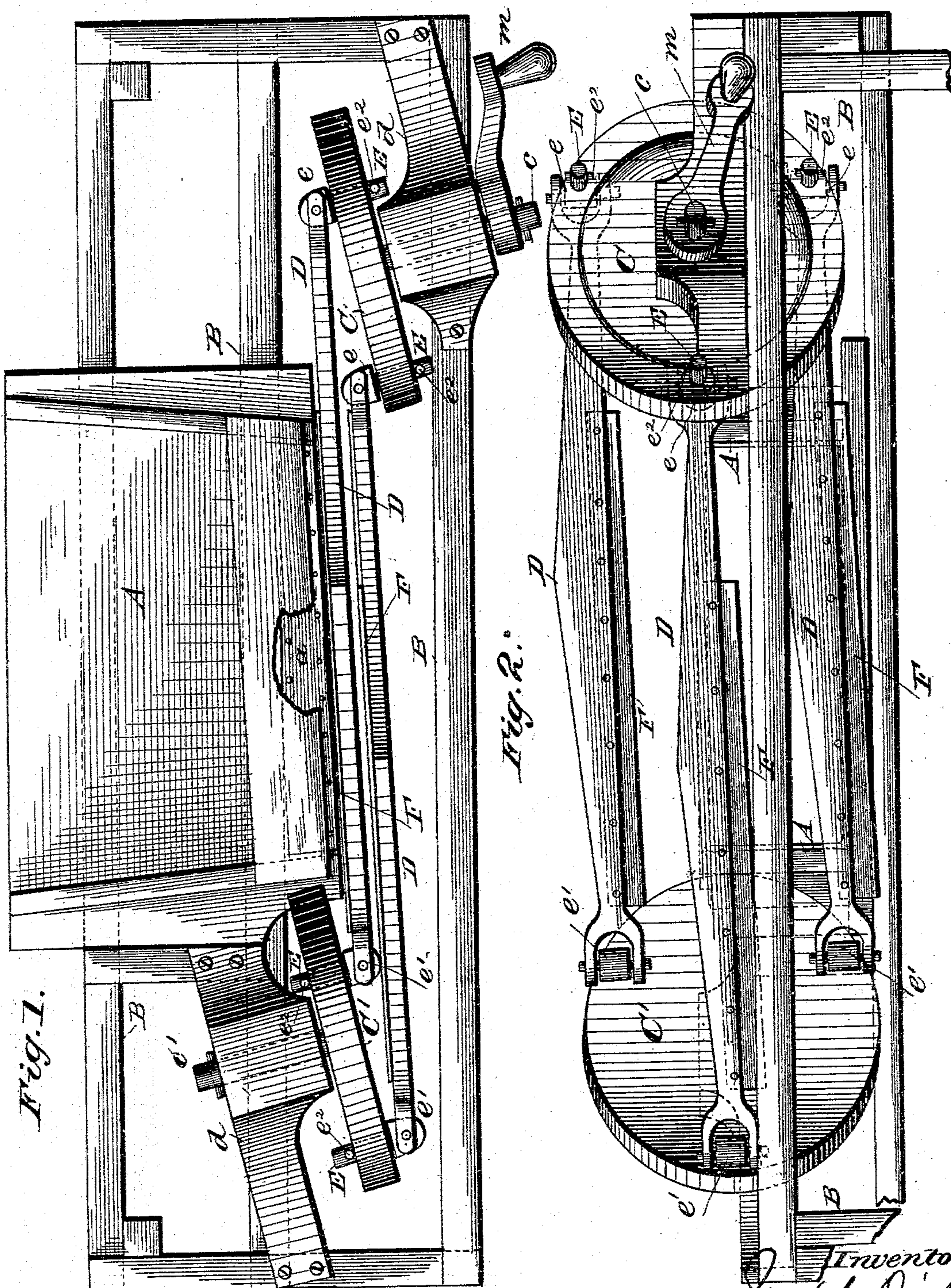


Fig. 1.

Fig. 2.

Witnesses:

Phil. C. Direrich.

Jos. L. Condron

Inventor:
Joseph Dick
by A. M. Smith
Attorney.

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2 Sheets—Sheet 2.

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Fig. 3.

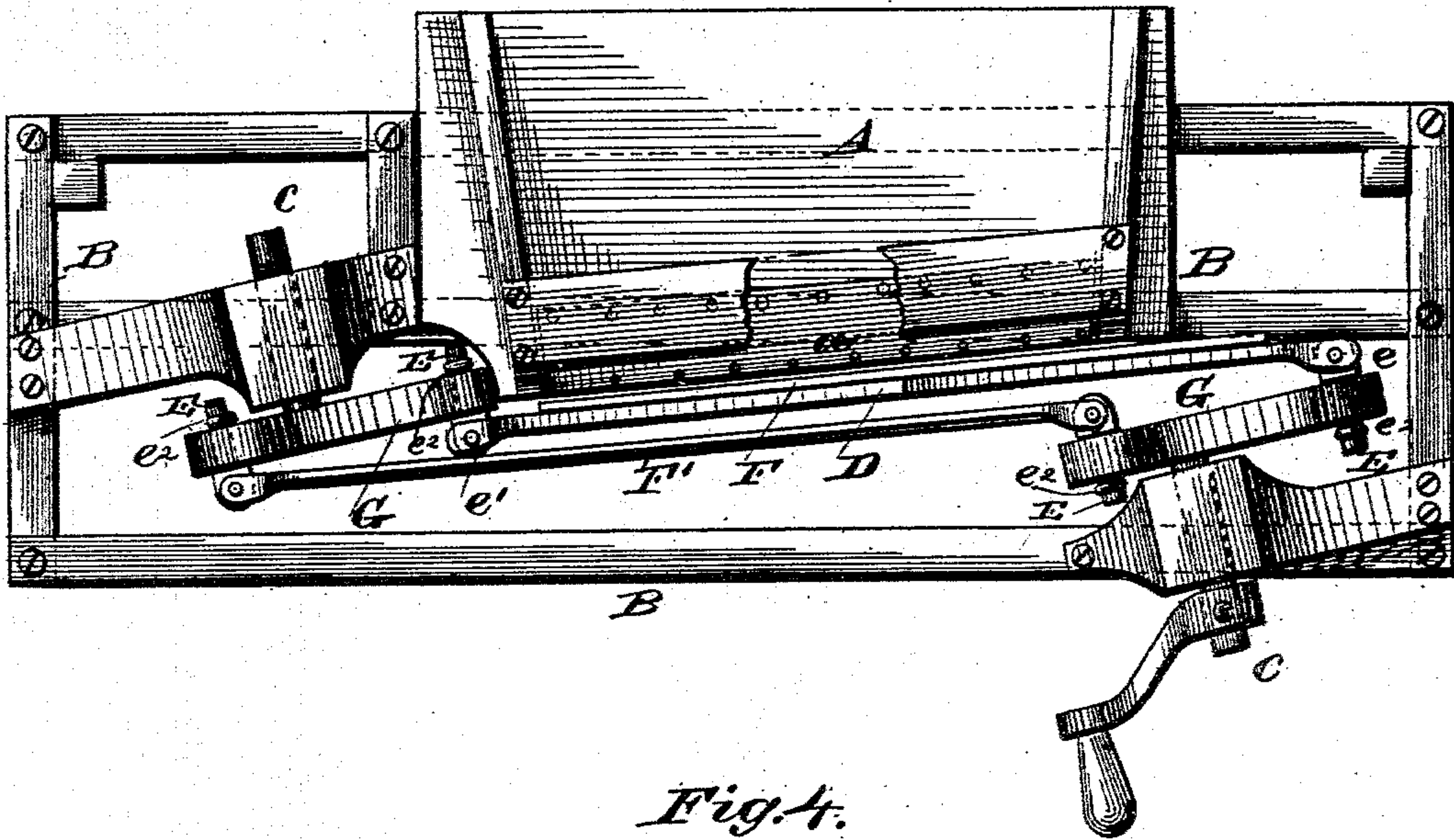


Fig. 4.

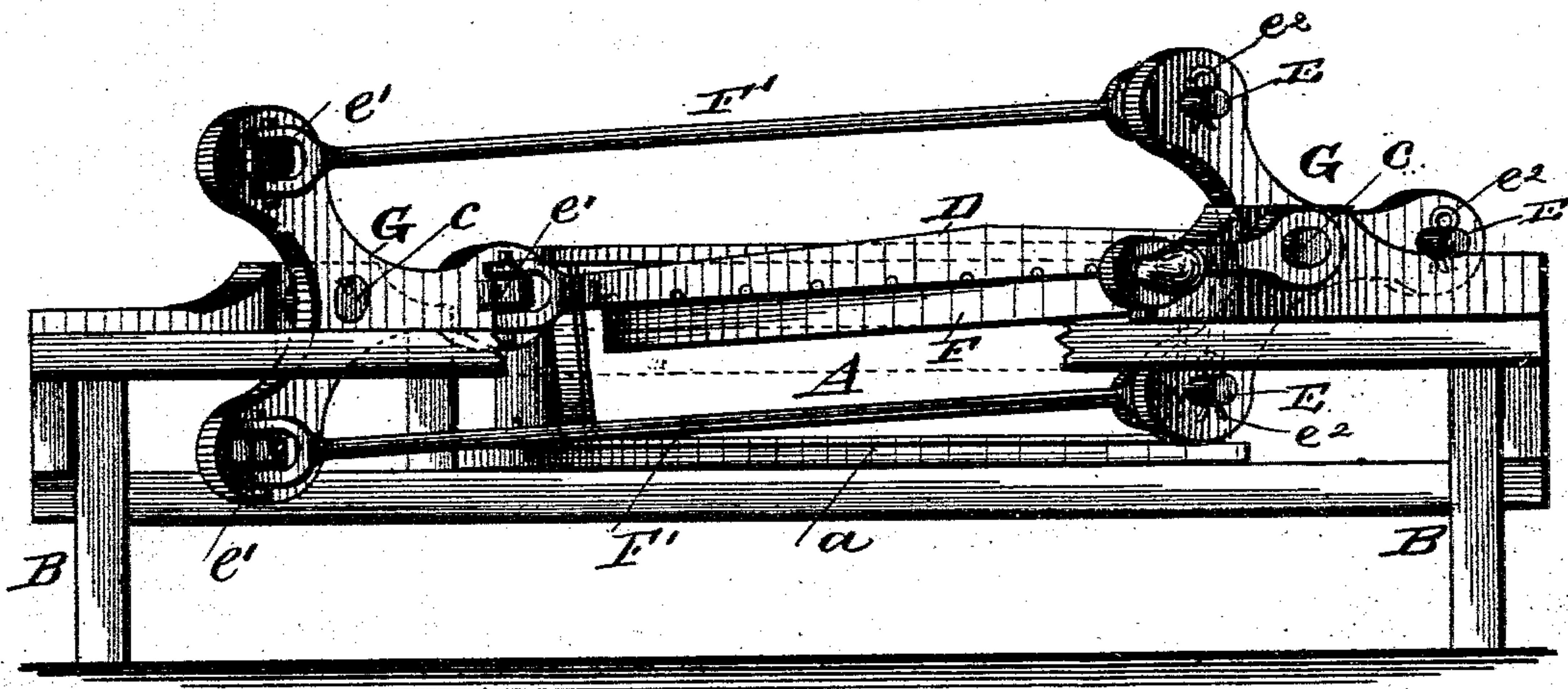
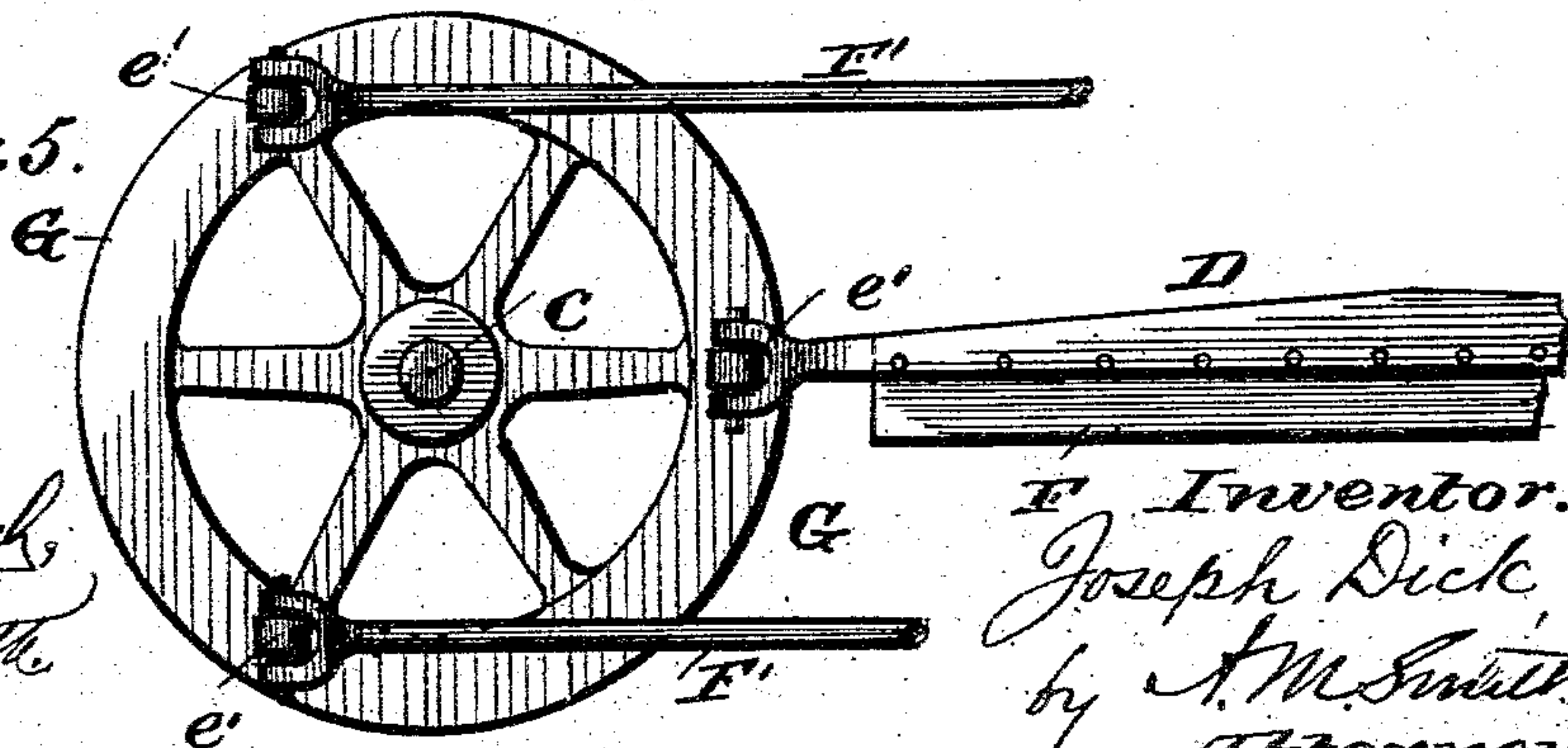


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH DICK, OF CANTON, OHIO.

STRAW-CUTTER.

SPECIFICATION forming part of Letters Patent No. 356,751, dated February 1, 1887.

Application filed August 23, 1886. Serial No. 211,587. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH DICK, of Canton, county of Stark, State of Ohio, have invented a new and useful Improvement in Straw-Cutters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to machines for cutting straw, hay, and similar substances; and its object is to increase the ease and speed of the cutting action and to effect a drawing cut with straight knives.

To the above end my invention consists in a hay and feed cutter having one or more knives connected to a pair of actuating-disks or crank-wheels having their axes placed obliquely to the cutting-line, and two or more crank-pins for said knives, as hereinafter described and claimed.

My invention further consists in certain peculiar and novel features of construction and arrangement, as hereinafter explained.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a plan view of my improved hay-cutter, and Fig. 2 is an end elevation of the same. Fig. 3 is a plan view of a straw-cutter embodying modified features of construction in accordance with my invention. Fig. 4 is an end view of the same. Fig. 5 is also an end view showing another modification in the form of the crank-wheel.

In the said drawings, A designates the trough through which the material is fed to the cutters, said trough having at its discharge end a metal plate, *a*, against which the cutters work, and B designates the supporting-frame for the trough, and also for the cutting mechanism. At opposite sides of the trough A are placed two crank-disks, C C', which are mounted upon shafts *c c'*, the bearings of which are in blocks *d* upon the frame B, as shown.

D D D designate three straight knife-bars, each of which is connected to the rear face of the disk C by knuckle-joints *e*, and at its opposite end to the front face of the disk C' by knuckle-joints *e'*. Each cutter or knife-bar D

carries on its rear side a knife, F, the edge of which extends below the lower edge of the bar.

By reference to Figs. 1 and 2 of the drawings it will be seen that each knife-bar D extends transversely across the end of the trough A and parallel with the edge *a* thereof, and that the disks C C' stand obliquely to the cutting-plane of the knives. By virtue of this arrangement, as the disks revolve, they carry each knife-bar successively downward and inward toward and against the edge of the trough, and cause it to sweep with a longitudinal movement past said edge. It will also be seen that on their upward movement the knife-bars pass away from the end of the trough in such manner as to throw off the cut material and free themselves from the ends of the uncut material, and that as the disks revolve the knife-bars move successively past opposite sides of each other. Thus each knife acts snugly against the cutting-edge of the trough A and by or past the preceding knife on its inner side, and on its upward movement passes by the outer side of the succeeding knife. In the latter movement the knives clean their edges automatically by their close proximity to each other and their relative opposite movement.

The joints *e e'* at the ends of the bars D are at the outer ends of pins E, which pass through the disks C C', and are secured thereto by keys *e''*, or in other suitable manner, adapting the bars to be readily removed from the disks when it is desired to grind the knives.

A crank-arm is shown attached to the shaft of one of the disks C C', and serves as a means for operating the disks and knife-bars; but any other usual or suitable means may be employed for that purpose.

It will be readily understood by reference to Figs. 3 and 4 that a single knife may be used in lieu of the three knives or cutters shown, one or more connecting-rods, F, without blades being used to connect the two disks at points beyond the centers of the single knife-bar D, and that crank-arms or open crank-wheels G, with one or more wrist-pins or joints, may be employed in lieu of the solid disks without departing from the spirit of my invention. In the latter event the trough A

may be widened to nearly or quite approach the center of the shaft *c* on one side only, as best shown in Fig. 4, so that the material may be discharged freely over the crank-arms, or through the crank-wheels, as the case may be, and thus materially increase the capacity of the machine. The cutters or knives should in this event be lengthened at one end to correspond to the increased width of the trough, as shown at *f'* in Figs. 3 and 4.

I am aware that straw-cutters have heretofore been provided with a knife-carrying bar pivoted at its ends upon two revolving disks, and hence I do not claim such construction, broadly; but my invention differs from such preceding structures in that the opposite ends of the knife-bars are pivoted upon opposite sides of the disks or arms, and also in the oblique setting of the disks, whereby the peculiar inward and outward movements of the knives are produced.

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

1. In a straw or feed cutter, a knife extending across the supporting-frame, in combination with a pair of shafts set obliquely to the cutting-plane of the said knife and carrying cranks jointed to said knife, substantially as described.

2. The combination of the frame carrying oblique disks *C C'*, connecting-bars united at their ends to opposite faces of said disks, a

knife or cutter secured to one of said bars, and oblique shafts upon which said disks are mounted, substantially as specified.

3. The combination, with a series of knives extending across the supporting-frame, of a pair of shafts set obliquely to the cutting-plane of the knives, and a pair of disks connected to the ends of the knife-bars and set obliquely thereto, substantially as described.

4. The combination, with the frame *B*, carrying trough *A* and bearings *d*, of oblique shafts *c c'*, carrying disks *C C'*, the knife-bars *D*, connected pivotally at their ends to opposite faces of the disks, and the knives secured to said knife-bars, substantially as described.

5. The combination, with the frame *B* and the disks *C C'*, set obliquely thereon, of the knife-bars *D*, the knives secured thereto, and the pins *E*, connecting the bars pivotally to the disks, substantially as set forth.

6. The combination, with the frame of a straw-cutter and the feed-trough thereof, of a pair of shafts set obliquely to the discharge end of the trough and carrying oblique disks, connecting-bars jointed at their ends to opposite sides of said disks, and a knife secured to one of said bars, substantially as described.

In testimony whereof I have hereunto set my hand this 21st day of August, A. D. 1886.

JOSEPH DICK.

Witnesses:

W. P. BELL,
GILBERT CURTIS.