

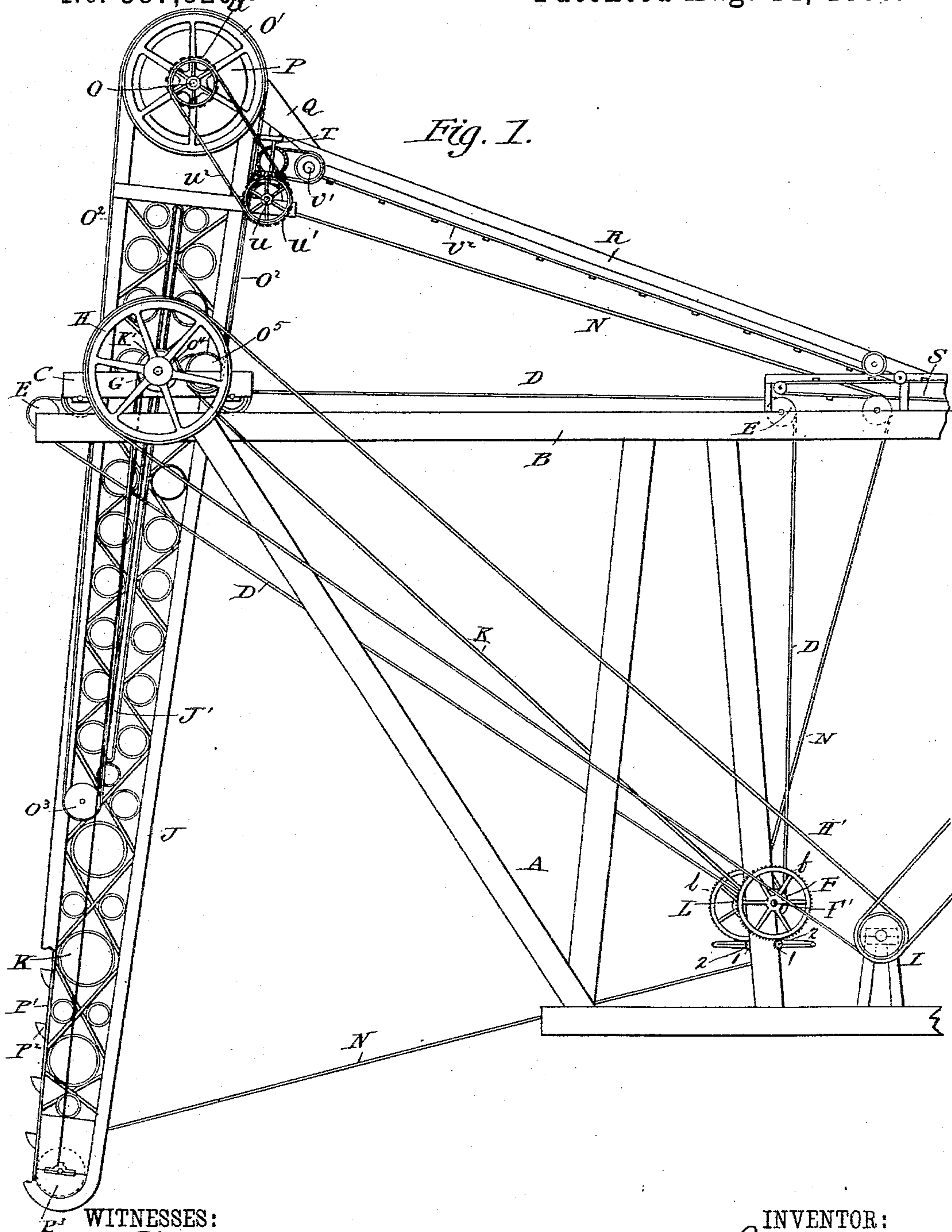
(No Model.)

2 Sheets—Sheet 1.

J. F. SIMMONS.
CONVEYER.

No. 387,820,

Patented Aug. 14, 1888.



WITNESSES:

J. Clark.
C. Sedgwick.

INVENTOR:

J. F. Simmons
Munn & Co

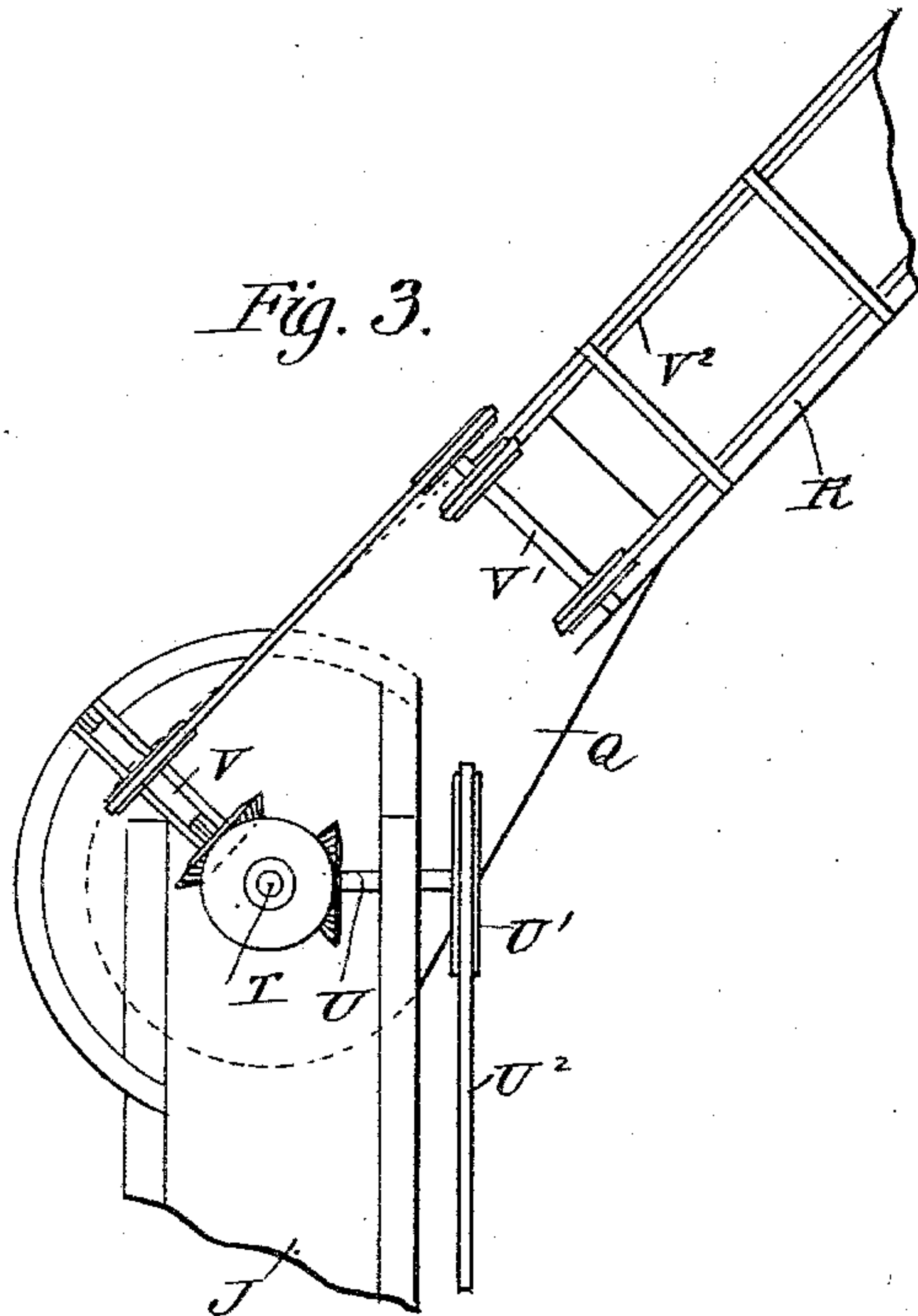
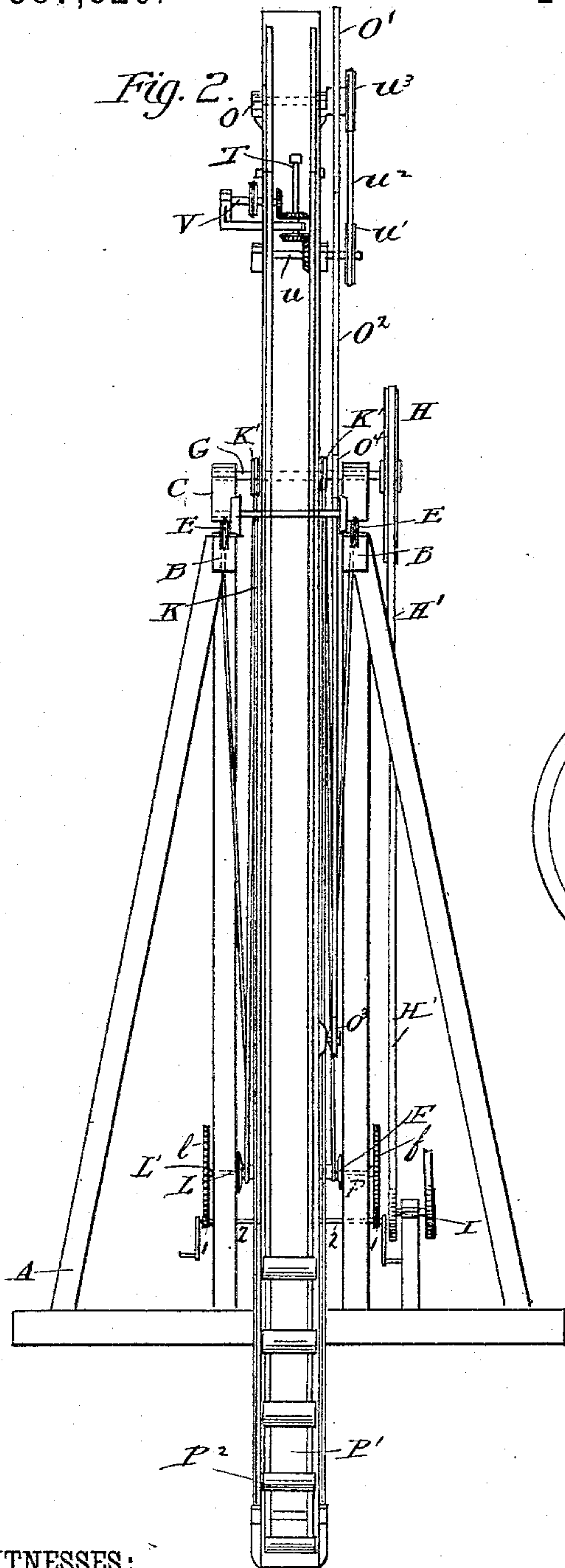
BY

ATTORNEYS.

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WITNESSES:

J. Clark.
Jas. M. Stanley

INVENTOR:

J. F. Simmons.
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UNITED STATES PATENT OFFICE.

JAMES F. SIMMONS, OF MANISTIQUE, MICHIGAN.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 387,820, dated August 14, 1888.

Application filed September 26, 1887. Serial No. 250,756. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. SIMMONS, of Manistique, in the county of Schoolcraft and State of Michigan, have invented a new and Improved Elevator and Conveyer, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved elevator and conveyer specially adapted for unloading and loading vessels, cars, &c.

The invention consists in the construction and arrangement of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improvement with parts broken out. Fig. 2 is an end elevation of the same; and Fig. 3 is an enlarged bottom view of part of my improvement, hereinafter more fully described.

On a suitably-constructed stationary frame, A, is held the horizontal track B, on which a carriage, C, is adapted to travel forward and backward by means of a rope, D, fastened by its ends to said carriage and passing over idlers E on the track B and then to a windlass, F, of any improved construction and located on the frame A. On the carriage C is mounted the transverse shaft G, carrying on one end a driving-pulley, H, over which passes a belt, H', which also passes over the pulley I, rotated in any suitable manner from suitable machinery located on the frame A or in its neighborhood. The transverse shaft G passes through slots J', formed in the center of the elevator-frame J, of suitable length and construction, and adapted to slide up and down on said shaft G, and also to swing on the same. The up-and-down motion of the elevator-frame J is accomplished by means of ropes K, each fastened by one end to the lower end of the elevator-frame J and then passing upward over a loose pulley, K', mounted on the shaft G, and then the rope K passes to a windlass, L, of any approved construction and mounted on the frame A.

The shafts F' L' of the windlasses F L both have large gear-wheels f l , respectively, at one end, which mesh with pinions 1 1, carried by crank-shafts 2 2, mounted in the frame below the respective windlasses. The windlasses may be operated by any suitable mechanism, however. It will be seen that when the windlass L is operated the rope K is wound up on or unwound from the same, thereby raising or lowering the elevator-frame J, with its contents. The swinging motion of the elevator-frame J is accomplished by means of a rope or ropes, N, fastened by one end near the upper end of the frame J and by the other end to the lower end of the frame J, and passing over suitable pulleys held on the main frame A. It will be seen that when a pull is exerted on the upper part of the rope N the upper end of the elevator-frame will swing inward and the lower end will swing outward, the shaft G being its fulcrum; and if a pull is exerted on the lower end of the rope N the lower end of the elevator-frame J will swing inward and the upper end will swing outward on the same fulcrum—the shaft G.

In the upper end of the elevator-frame J is mounted transversely a shaft, O, carrying a pulley, P, over which passes the elevator-belt P', provided with the usual buckets, P², and also passing over a pulley, P³, mounted on a shaft rotating in the lower end of the frame J. On one end of the shaft O is secured the driving-wheel O', over which passes the driving-belt O², also passing over the idler O³, mounted on the elevator-frame J, and then the belt passes over the pulley O⁴, secured to the shaft G, after which said belt O² passes over the idler O⁵, mounted on the carriage C. Thus it will be seen that the rotary motion imparted to the shaft G from the main driving-pulley I imparts motion to said belt O², and consequently to the shaft O, thereby setting the elevator-belt P' in motion.

The buckets P² of the elevator-belt P' discharge on a spout, Q, leading into the conveyer R, discharging at its lower end into an endless slat belt, S, mounted on the track B and leading to any desired place to which the material to be elevated and conveyed is to be transferred. The spout Q is pivotally mounted

on a vertical shaft, T, mounted in suitable bearings on the upper end of the elevator-frame J, and carrying at its lower end a bevel gear-wheel meshing into a bevel gear-wheel secured to a transverse shaft, U, mounted in suitable bearings on the upper end of the frame J, and said shaft U carries a sprocket-wheel, U', over which passes the sprocket-wheel U², also passing over a sprocket-wheel, U³, secured to the shaft O, so that when the latter is rotated, as above described, it imparts a rotary motion to said shaft U, and by the bevel gear-wheels to said shaft T, which latter is provided with a second gear-wheel meshing into a bevel gear-wheel fastened on a transverse shaft, V, mounted in suitable bearings on the spout Q and swinging with the latter.

The shaft V is connected by suitable pulleys and belts with a shaft, V', carrying a pulley, over which passes a slat belt, V², which forms part of the conveyer R, through the box of which the upper part passes, as illustrated in Fig. 1. Said slat belt V² discharges directly on the slat belt S, before described.

The operation is as follows: The elevator-frame J, with its contents, is raised or lowered by adjusting the rope K, and is swung inward or outward by operating the ropes N. The entire frame J is moved inward or outward on the track B by causing the carriage C to travel forward or backward by adjusting the rope D by the windlass F. The elevator-belt P', with its buckets P², is set in motion from the main driving-shaft by the endless belt O², passing over the pulley O⁴, secured to the shaft G, rotated by said driving-pulley I. The conveyer-belt V² is set in motion from the main shaft O by the means above described, so that when a load is placed in the buckets P² the latter elevate the same and discharge it into the spout Q, from which it is transferred by the conveyer R and its slat belt V² to the slat belt S, which extends in a horizontal direction and transfers the material to any desired place.

It will be seen that the universal adjustment of my improved elevator and conveyer permits of its being used for loading and unload-

ing vessels, railroad-cars, and the like, transferring goods from a vessel to a car, or vice versa, and for various other purposes.

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

1. In an elevator and conveyer, the combination, with a carriage adapted to move forward and backward, of a shaft mounted transversely on said carriage and receiving a rotary motion, an elevator-frame having vertical slots through which said shaft passes, an elevator-belt and buckets mounted on the said frame, and an endless belt for imparting a rotary motion from said transverse shaft to the elevator-shaft, substantially as shown and described.

2. The combination, with the frame A, the horizontal track B, and the windlasses L F at the lower end of said frame, of the carriage C on the track, having a transverse shaft, G, the elevator-frame having slots into which the ends of the shaft pass, the idle-pulleys E E at the front and rear of the track, the rope D, leading from the windlass F over the said idlers to the opposite ends of the carriage, the rope N, leading from the windlass L to the opposite ends of the elevator-frame, a belt connecting the shaft G and the elevator-shaft, and the conveyer R, on which elevator-buckets deliver, substantially as set forth.

3. In an elevator and conveyer, the combination, with a carriage and a shaft mounted transversely on the same and receiving a rotary motion, of an elevator-frame having vertical slots through which said transverse shaft passes, an elevator-belt mounted on said elevator-frame and set in motion by said transverse shaft, a spout into which said elevator-belt discharges, and a conveyer connected with said spout and set in motion from the shaft of the elevator-belt, substantially as shown and described.

JAMES F. SIMMONS.

Witnesses:

ALFRED J. SIMMONS,
WILLIAM H. SIMMONS.