No. 850,973. PATENTED APR. 23, 1907.

S. P. SHAFER.

QUADRUPLEX CYCLE.

APPLICATION FILED JAN. 12, 1907.

4 SHEETS—SHEET 1.

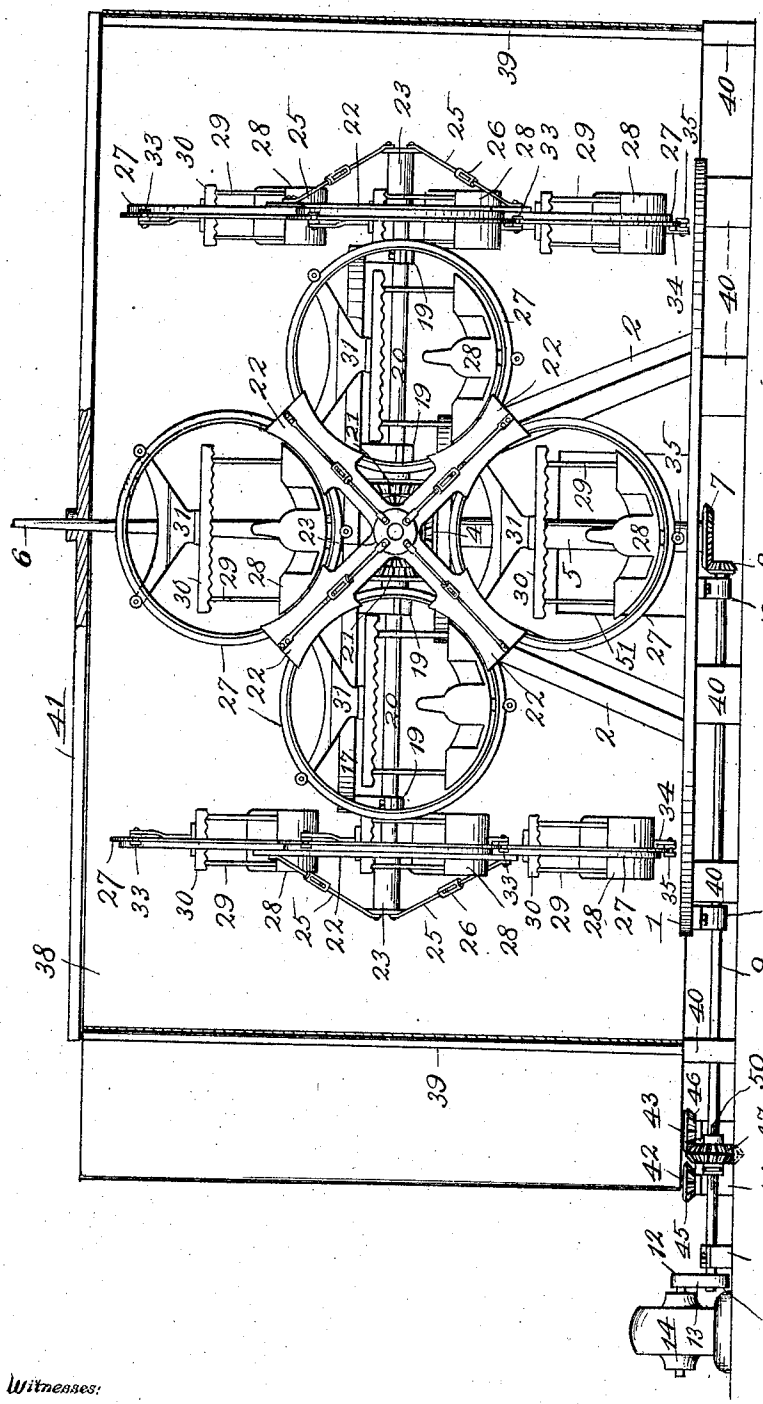

Fig. 1.

Witnesses:

R. C. Hamilton

M. Cox

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4 SHEETS—SHEET 2.

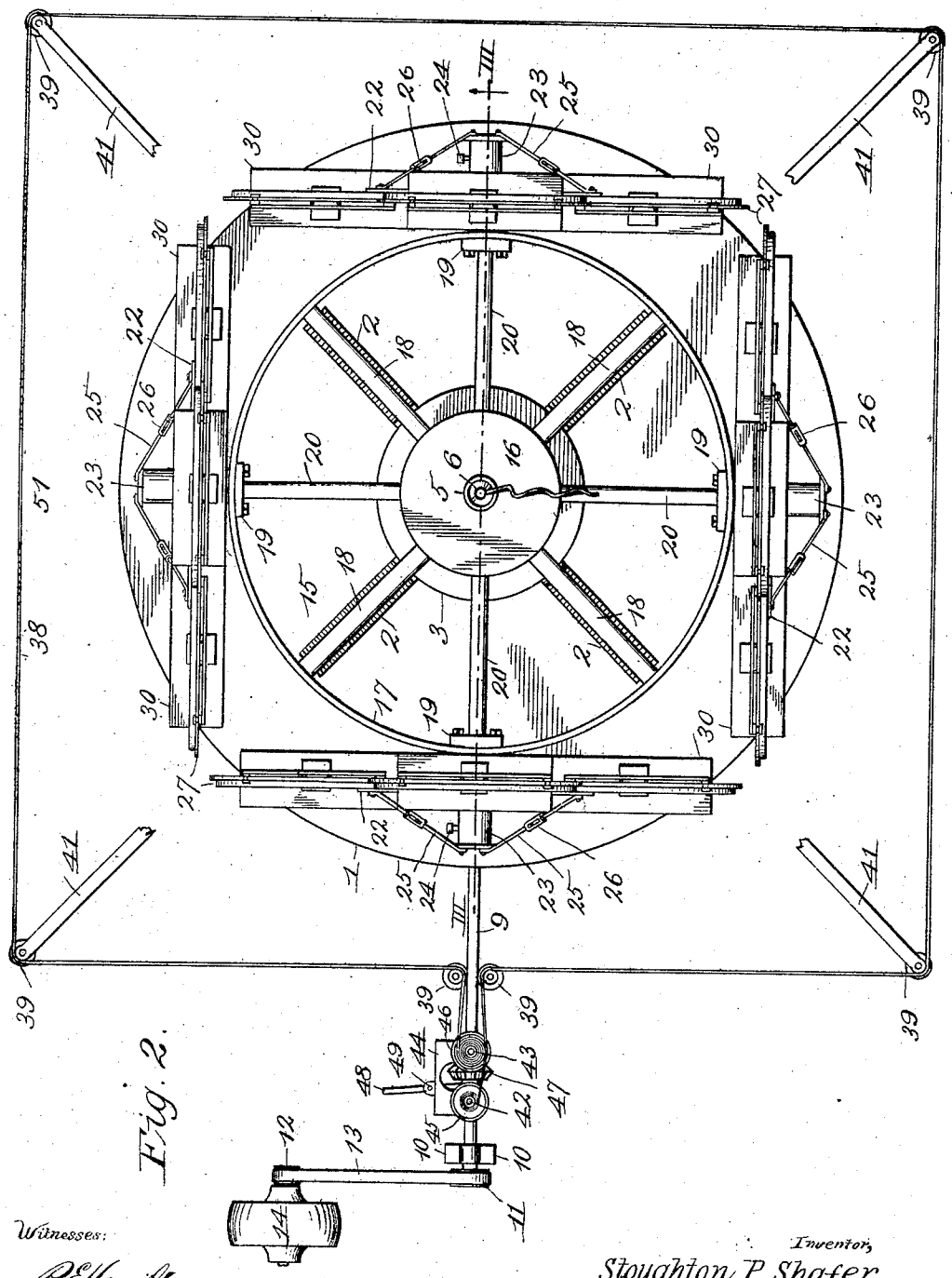

Fig. 2.

Witnesses:

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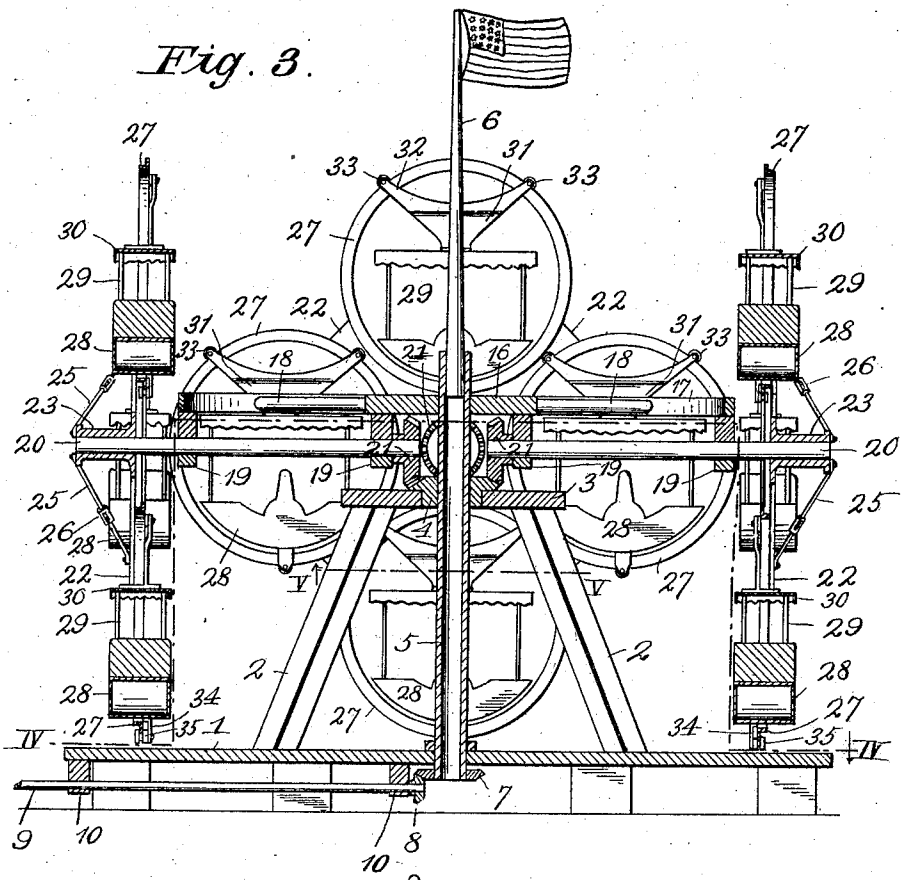
4 SHEETS—SHEET 3.

Fig. 3.



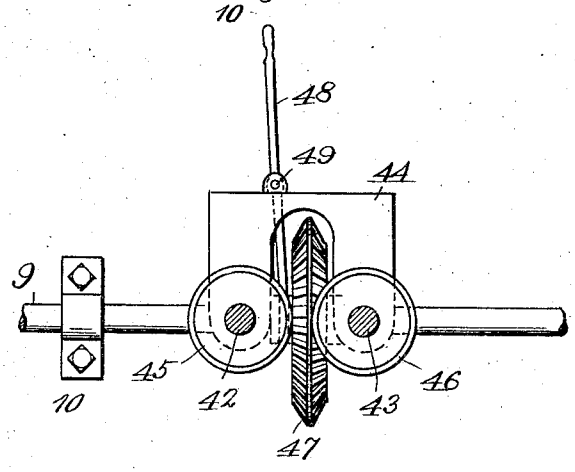


Fig. 7.

Witnesses:

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4 SHEETS—SHEET 4.

Fig. 4.

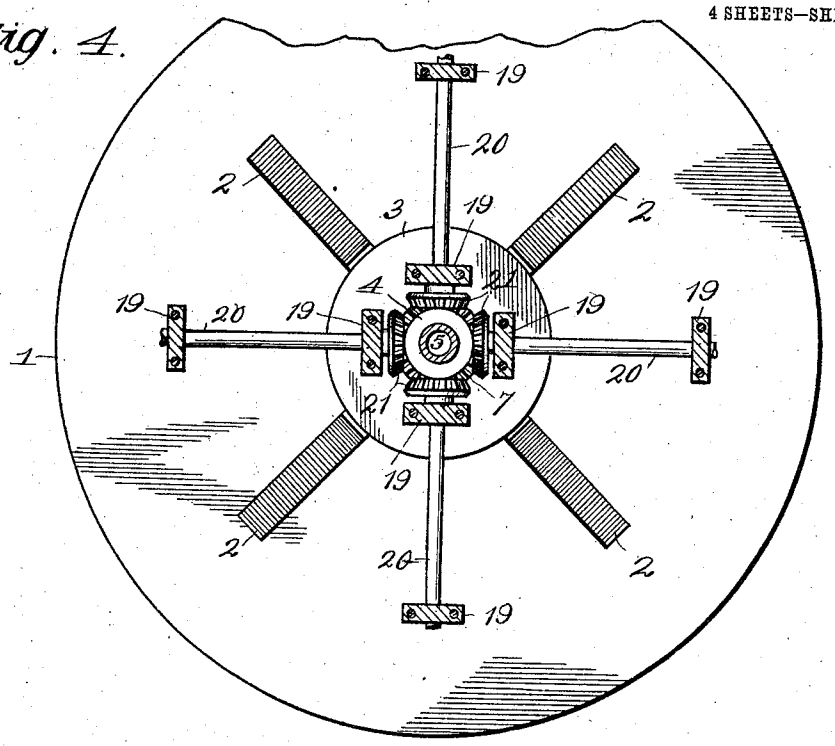
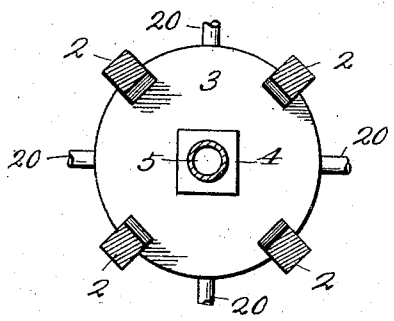


Fig. 5.



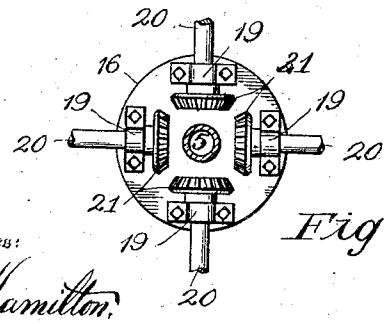
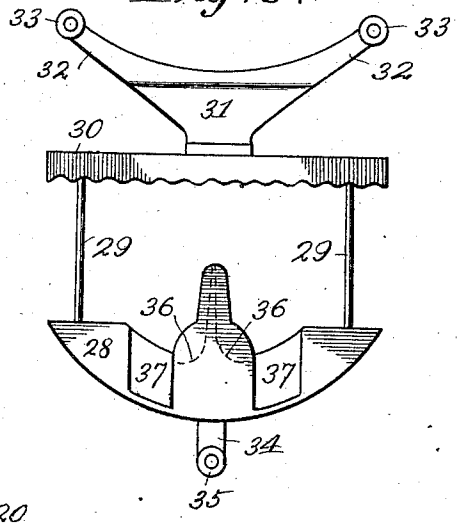


Fig. 6.

Fig. 8.



Witnesses:

R. C. Hamilton.

M. Cox.

Inventor,

Stoughton P. Shafer

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Atty.

UNITED STATES PATENT OFFICE.

STOUGHTON P. SHAFER, OF KANSAS CITY, MISSOURI.

QUADRUPLEX CYCLE.

No. 850,973. Specification of Letters Patent. Patented April 23, 1907.

Application filed January 12, 1907. Serial No. 351,923.

To all whom it may concern:

Be it known that I, STOUGHTON P. SHAFER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Quadruplex Cycles, of which the following is a specification.

My invention relates to improvements in amusement devices, and consists in the novel construction, combination, and arrangement of parts hereinafter described, pointed out in the claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of the invention with a panorama forming part thereof in vertical section. Fig. 2 is a plan view of the invention. Fig. 3 is a vertical section on line III III of Fig. 2 with the panorama removed. Fig. 4 is an irregular sectional plan view on line IV IV of Fig. 3. Fig. 5 is a transverse section looking from below of the upper portion of a main frame and a main shaft forming part of the invention on line V V of Fig. 3. Fig. 6 is an inverted plan view of part of the gearing employed in carrying out my invention with the main shaft in cross-section. Fig. 7 is a detail view of a portion of the driving mechanism employed in carrying out the invention. Fig. 8 is a side elevation of a car forming part of the invention.

In constructing my device I employ a stationary frame comprising a platform 1, inclined standards 2 resting thereon, and a circular plate 3, supported by the standards.

4 designates a stationary bevel gear-wheel fixed to plate 3.

5 designates a vertical main shaft journaled in platform 1 and gear-wheel 4. Said shaft is provided at its upper end with a flagstaff 6 and at its lower end with a fixed bevel gear-wheel 7, which is driven by a pinion 8, fixed upon one end of a drive-shaft 9, journaled in bearings 10, and provided at its opposite end with a pulley 11, driven by pulley 12 through the instrumentality of an endless belt 13. Pulley 12 is mounted upon the end of a suitable motor 14.

15 designates a rotatable skeleton frame fixed to the upper portion of the main shaft in order to rotate therewith, and comprises a hub 16, fixed to shaft 5, a rim 17, and a plurality of radial arms 18, connecting the hub and the rim. Said frame is provided with a number of depending bearings 19, in which are journaled a plurality of radial shafts 20, provided at their inner ends with fixed bevel gear-wheels 21, which intermesh with the stationary gear-wheel. Thus when the main shaft is rotated gear-wheels 21 will roll around upon gear-wheel 4 and rotate their shafts 20. The outer end of each shaft 20 is provided with a pair of cross-arms 22, having an outwardly-extending hub 23, adjustably fixed to the shaft by a set-screw 24, so that each set of cross-arms may be arranged upon its shaft in the same relative position as its companion. The outer ends of each set of cross-arms are braced by tie-rods 25, which are tensioned with turnbuckles 26. Each set of cross-arms carries a plurality of annular tracks 27, radially arranged around the outer end of each shaft 20 and which revolve in a horizontal plane around shaft 5 and a vertical plane around their respective shafts 20, thus traveling in two directions at the same time.

Suspended within each annular track is a car consisting of a body portion 28, standards 29, a canopy 30, and a hanger 31, which latter consists of a pair of diverging arms 32, having journaled grooved rollers 33 at their outer ends, arranged to travel upon the track. Said rollers are arranged an equal distance on opposite sides of a perpendicular line intersecting the axis of the track, so that the car will maintain its proper position, as shown in Figs. 2 and 3, when the track is revolving. The car is also provided at its bottom portion with an arm 34, carrying a journaled grooved roller 35, which prevents the car from being swung outwardly by the centrifugal force exerted thereon in its circuit around shaft 5. Each car has a plurality of seats 36, adapted to accommodate four passengers, who may gain access thereto through openings 37 when the car is in proximity to platform 1.

38 designates a canvas or other fabric adapted to contain a panorama, consisting either of one continuous picture or a series of pictures. Said canvas is arranged to travel upon a plurality of guide-rollers 39, arranged equal distances apart and from shaft 5, said rollers being journaled in blocks 40 and struts 41. The ends of the canvas are attached to two rollers 42 43, upon which the

canvas is alternately wound. Said rollers are journaled in a frame 44 and provided at their lower ends with bevel-wheels 45 46, respectively.

47 designates a bevel gear-wheel slidably mounted upon shaft 9 and caused to turn therewith by a feather 50. Said gear-wheel has teeth at its opposite sides, so that it may alternately intermesh with and drive gear-wheels 45 46, it being shifted into engagement therewith by a lever 48, fulcrumed upon a pin 49.

In practice the passengers are admitted to the outer portion of platform 1 through an opening 51 in the panorama, and after the lowermost cars have been filled shafts 20 are intermittently turned to bring each succeeding car within easy reach of the remaining passengers. Shaft 5 is then continuously rotated until the canvas is unwound from one of its rollers and wound upon the other roller. As shaft 5 rotates the cars will, through the instrumentality of the intervening gearing, revolve around shafts 20 in a vertical plane and around shaft 5 in a horizontal plane, thus combining the movements of a ferris wheel and a merry-go-round. The revolving annular tracks will also create the illusion that the cars are looping the loop, which, combined with the movement of the panorama, will lead the passengers seated within the cars to imagine that they are traveling in four directions at the same time.

Having thus described my invention, what I claim is—

1. In an apparatus of the character described, a rotary frame carrying a plurality of driven shafts, a plurality of annular tracks which simultaneously travel with the frame and revolve around the shafts, and cars carried by said tracks which latter rotate around the former.

2. In an apparatus of the character described, a horizontal rotary frame carrying a plurality of driven shafts, a plurality of annular tracks which simultaneously travel with the frame and revolve around the shafts, and cars carried by said tracks each of which latter rotates around its respective car.

3. In an apparatus of the character described, a rotary frame carrying a plurality of radial driven shafts, a plurality of annular tracks which simultaneously travel with the frame and revolve around the shafts, and cars carried by said tracks, substantially as described.

4. In an apparatus of the character described, a skeleton rotary frame carrying a plurality of driven shafts, a plurality of annular tracks which simultaneously travel with the frame and revolve around the shafts, and cars carried by said tracks, substantially as described.

5. In an apparatus of the character described, a rotary frame carrying a plurality of driven shafts, cross-arms fixed to said shafts, annular tracks fixed to said cross-arms, and cars suspended within said tracks.

6. In an apparatus of the character described, a stationary frame, a stationary bevel gear-wheel in the upper portion thereof, a main vertical shaft journaled in said frame and gear-wheel, a horizontal frame fixed to the main shaft, radial shafts journaled in said horizontal frame, bevel gear-wheels fixed to the inner ends of said radial shafts and intermeshing with the stationary gear-wheel, annular tracks which simultaneously travel with the horizontal frame and revolve around the radial shafts, and cars suspended within said tracks.

7. In an apparatus of the character described, a main vertical shaft, a radial shaft arranged to simultaneously rotate upon its own axis and revolve around the main shaft, a plurality of annular tracks radially arranged around said radial shaft with which they travel, and cars suspended within said tracks.

8. In an apparatus of the character described, a stationary frame consisting of a platform, standards, and a top plate supported by said standards, a bevel gear-wheel fixed to said top plate, a main shaft journaled in the platform and the fixed gear-wheel, a rotary frame fixed to the main shaft, radial shafts journaled therein, bevel gear-wheels fixed to said radial shafts which intermesh with and revolve around the fixed gear-wheel, a plurality of annular tracks which simultaneously travel with the rotary frame and revolve around the radial shafts, and cars suspended within said tracks.

9. In an apparatus of the character described, a plurality of rotary shafts which revolve around a common axis, a plurality of annular tracks carried by said shafts, a car suspended within each track, a hanger supporting each car having diverging arms provided with rollers engaging its respective track, and an arm projecting from the bottom of the car also provided with a roller engaging the track, substantially as described.

10. In an apparatus of the character described, the combination with a panorama, of a rotary frame carrying a plurality of driven shafts, a plurality of annular tracks which simultaneously travel with the frame and revolve around the shafts, and cars carried by said tracks which latter rotate around the former.

11. In an apparatus of the character described, the combination with a panorama, of a main vertical shaft, a radial shaft arranged to simultaneously rotate upon its own axis and revolve around the shaft, a plurality of annular tracks carried by said shafts, cars suspended within said tracks,

and means for simultaneously operating the panorama and the main shaft, substantially as described.

12. In an apparatus of the character described, the combination with a panorama, of a main vertical shaft, a radial shaft arranged to simultaneously rotate upon its own axis and revolve around the shaft, a plurality of annular tracks carried by said shafts, cars suspended within said tracks, and means for driving the panorama and the main shaft in reverse directions.

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

STOUGHTON P. SHAFER.

Witnesses:

F. G. FISCHER,

M. COX.