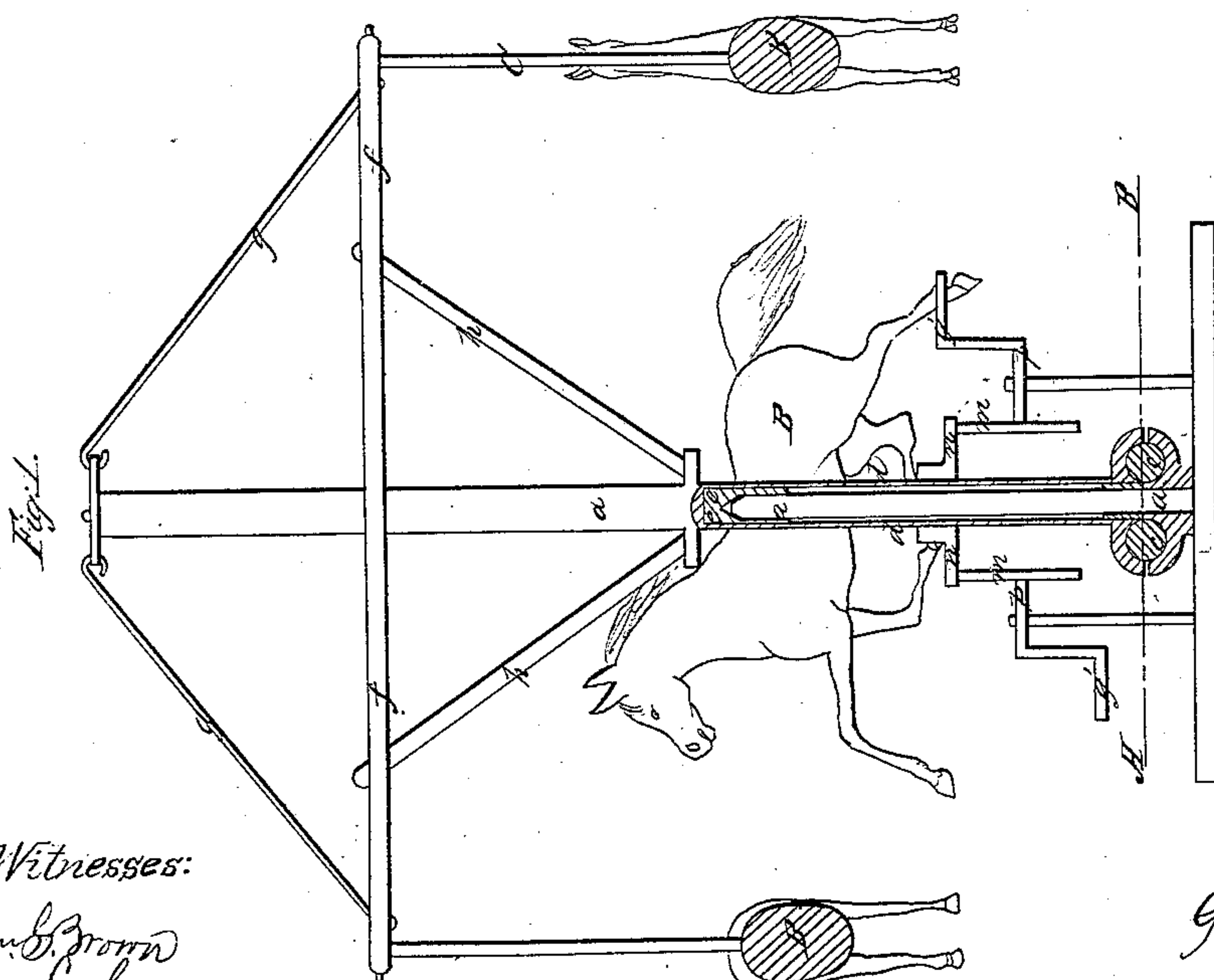
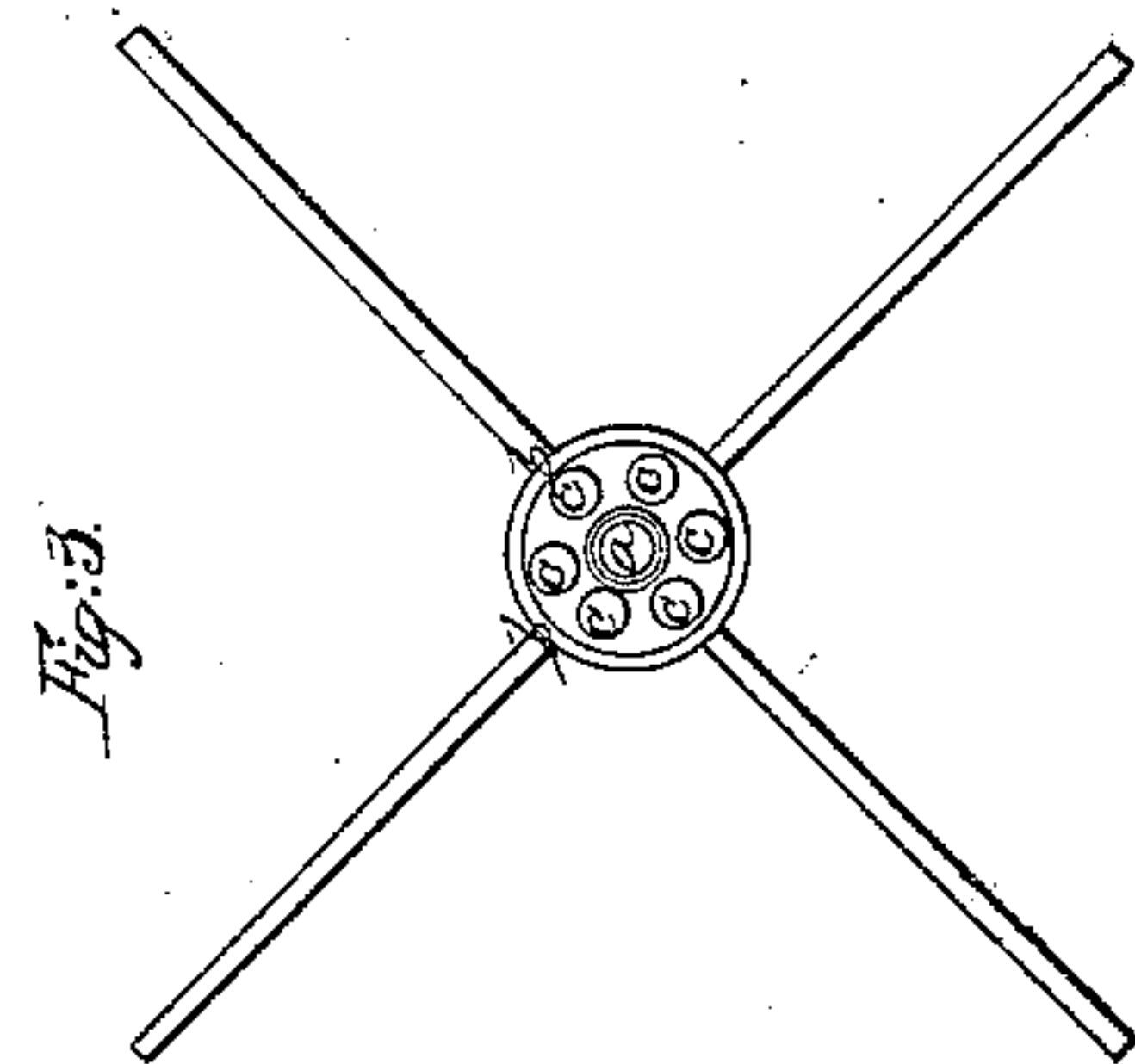
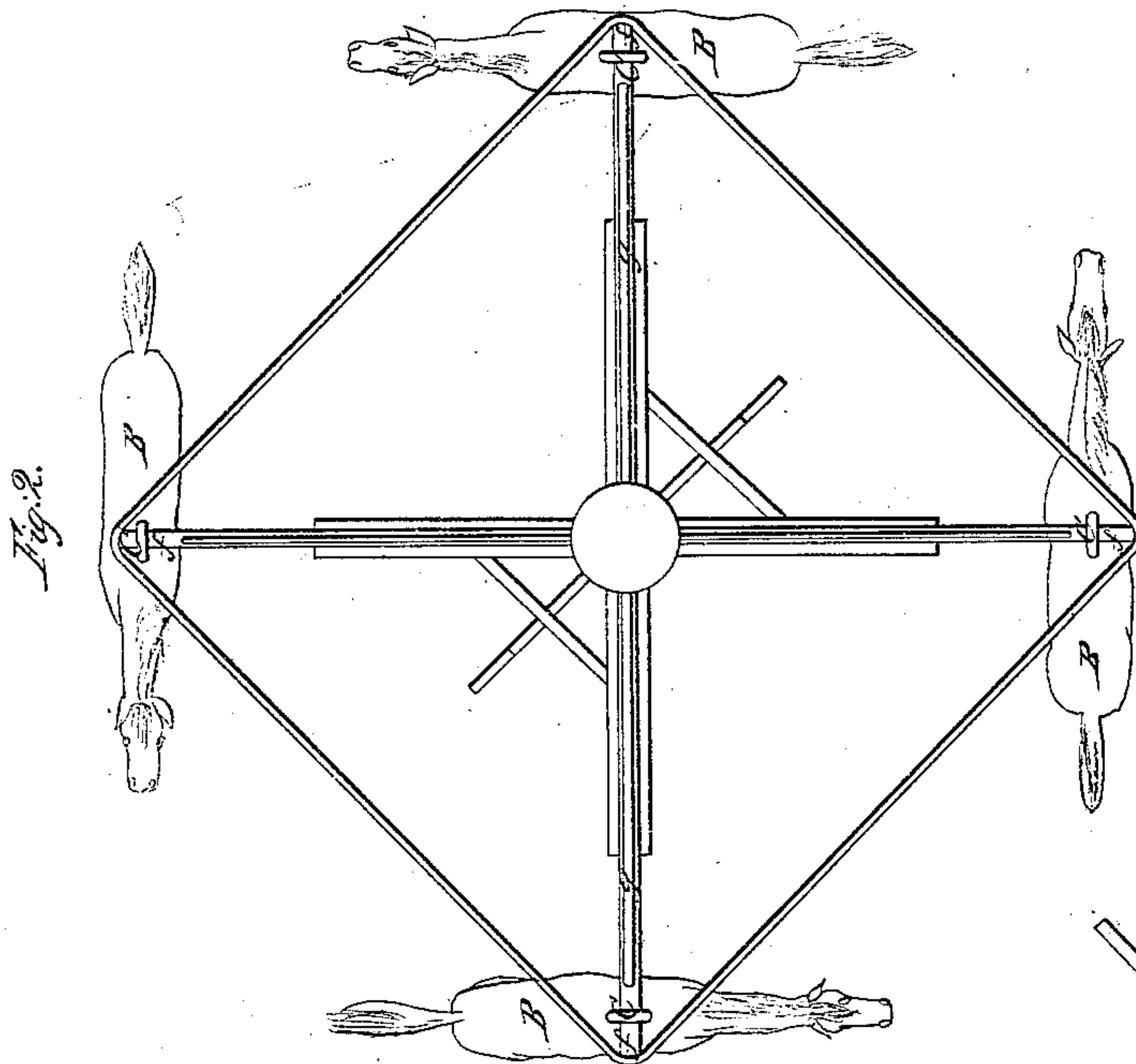


Newhall & Cummings.
Flying Horse Mach.

N^o 94,234.

Patented Aug. 31, 1869.



Witnesses:

*Thos. Brown
 John E. Laram*

Inventors:

*Geo. L. Newhall
 John S. Cummings*

United States Patent Office.

GEORGE L. NEW HALL AND JOHN F. CUMMINGS, OF CHELMSFORD, MASSACHUSETTS.

Letters Patent No. 94,234, dated August 31, 1869.

FLYING-HORSE MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, GEORGE L. NEWHALL and JOHN F. CUMMINGS, both of Chelmsford, in the county of Middlesex, and State of Massachusetts, have invented certain new and useful improvements in the apparatus which we call the "Flying-Horse Machine," of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a central vertical section.

Figure 2, a top view.

Figure 3, a transverse section on the line A B of fig. 1, showing the balls *c* in the annular groove.

In the construction of our improved machine, we employ a rod or shaft, *a*, the lower end of which is firmly secured in a base or cross-stand, *b*, to be fastened to the ground or to a floor.

Upon this shaft we place a shell-shaft, *d*, which has projecting arms *f*, near its upper end.

Beneath these arms are braces *h*, to support them, and above said arms, and connected near their outer ends, and to the top of the shell-shaft, are truss-rods, *g*, forming double supports for the arms.

The horses *B* are attached to suspension-rods *C*, which are loosely connected to or near the ends of the projecting arms, and in such manner that when the machine is rotated, the horses swing outward by centrifugal force, and this gives them the appearance of flying through the air.

Surrounding the lower end of the central shaft *a*, and secured thereto, is an annular base or a shell, which has a half round groove, and above this shell is another similar one secured to the shell-shaft *d*.

The two grooves are in form and size the same, and form an annular round groove, for the reception of shot or balls, which we place therein. These balls *c* support the shell-shaft, the arms, and the horses, and the riders, and greatly relieve the friction between the parts.

The top end of shaft or spindle *a* is fitted into an inverted step, *e*, secured within the shell-shaft, and, if preferred, the weight of the revolving portion may be divided between the top of the spindle, and its step,

and the balls in the annular groove; then if one of these parts or devices should become deranged, the other is ample to support the load, and allow the apparatus to be used, while the deranged or disabled part is undergoing repairs, or being renewed, and as the machine is intended as a medium for diversion, recreation, or healthful exercise, where a small fee is collected of each participant, it is rather important to the owner, or the person in charge, that it should be in operating-condition continually.

The driving or propelling-mechanism consists of two gears, or two friction-wheels *m*, engaging with a similar device, *n*, secured to the lower portion of the shell-shaft, the former being arranged on a cross-shaft, *p*, supported in bearings at either side of the shaft *d*.

The shaft *h* is provided with cranks *g'*, on each end thereof, by which to turn the shaft to operate the machine. The shaft *p* may be a continuous one, or in two parts, each having a driver, *m*, to operate beneath the corresponding device *n*, on the shaft *d*, and each capable of operating the machine without the aid of the other.

The shell in which the annular groove is formed, and in which the friction-balls are placed, may be arranged above the shaft *p*, and the base of the spindle extended upward, if preferred, without departing from the principle of this invention, but the position of the shaft *p*, and the gears or devices *m*, beneath the similar device *n*, on the shell-shaft *d*, we consider the best, as it favors or insures the positive engagement and operation of such gears or actuating-mechanisms.

We claim the combination and arrangement of the spindle *a*, the shell-shaft *d*, the annular-grooved shell and balls *c*, the drivers *m* and *n*, and crank-shafts *p*, the arms *f*, braces *h*, truss-rods *g*, suspension-rods *C*, and the horses, all arranged and operating in the manner and for the purpose specified.

GEO. L. NEWHALL.
JOHN F. CUMMINGS.

Witnesses:

WM. S. BROWN,
JOHN E. CRANE.