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Patented Nov. 18, 1902.

E. C. BOYCE.
AMUSEMENT APPARATUS.

(Application filed Aug. 30, 1902.)

(No Model.)

2 Sheets—Sheet 1.

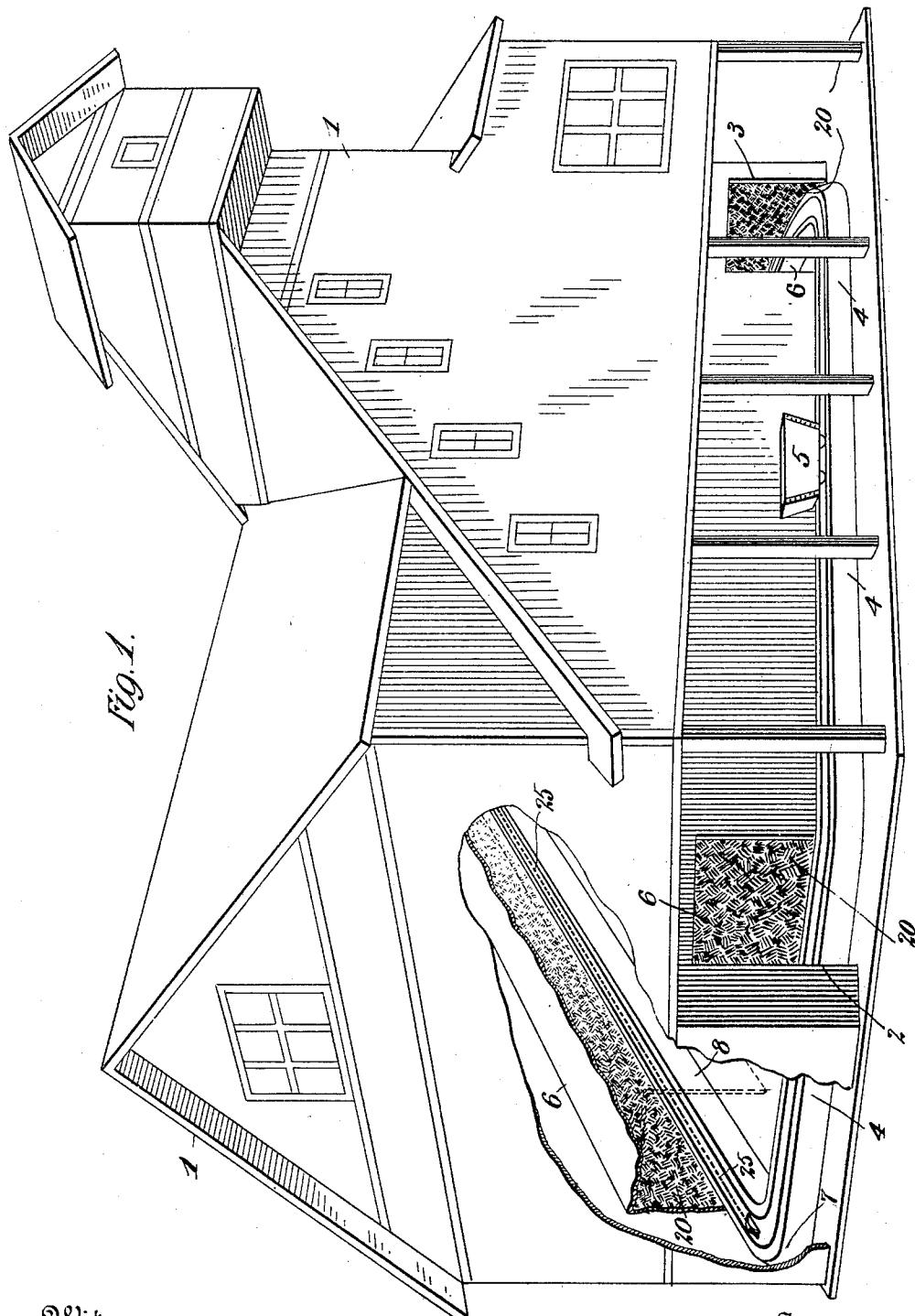


Fig. 1.

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Fig. 3.

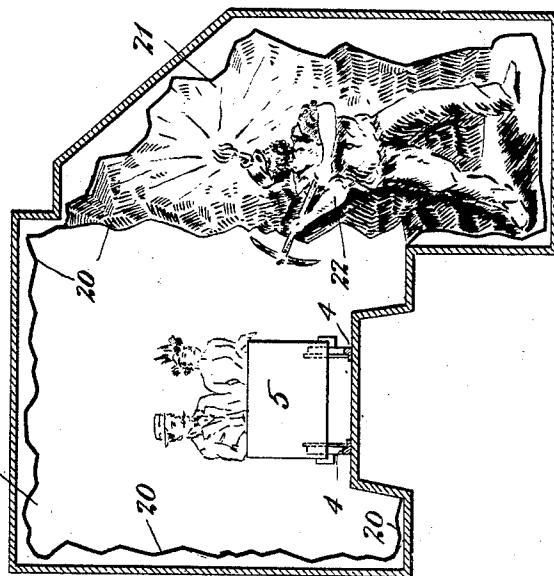
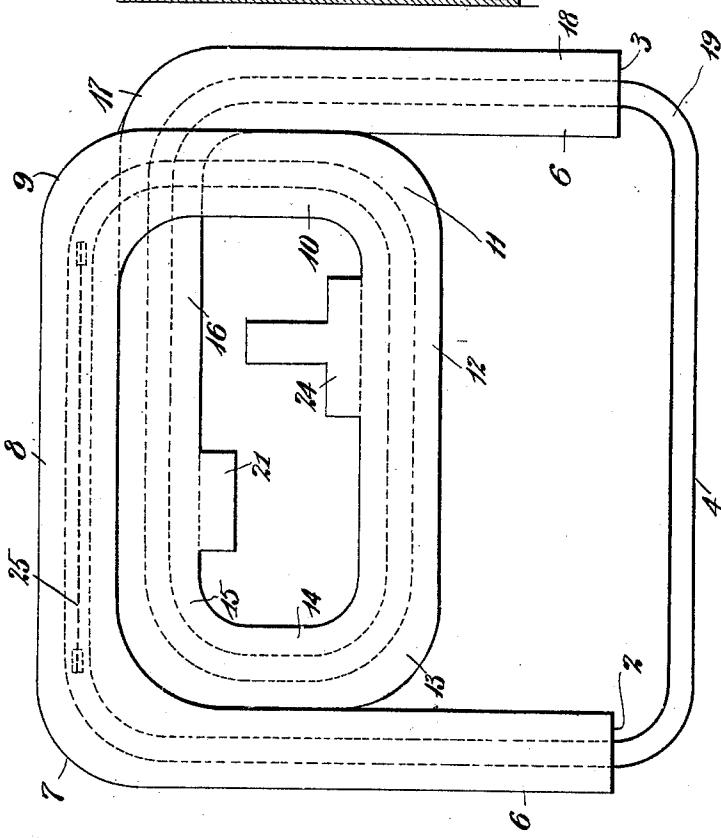


Fig. 6.



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UNITED STATES PATENT OFFICE.

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AMUSEMENT APPARATUS.

SPECIFICATION forming part of Letters Patent No. 713,737, dated November 18, 1902.

Application filed August 30, 1902. Serial No. 121,586. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. BOYCE, a citizen of the United States, residing in the borough of Manhattan, city of New York, county and State of New York, have invented certain new and useful Improvements in Amusement Apparatus, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to the class of apparatus which is usually found at pleasure- 15 resorts for the purpose of the amusement, recreation, and instruction of sight-seers and pleasure-seekers; and with these objects in view my present invention consists in an apparatus embodying the representation or 20 reproduction of a coal-mine or other like mine in which there is combined a building or house that is typical of the particular mining region, a shaft or tunnel, drifts and galleries 25 or working levels extending through a devi- 30 ous course within the confines of the building, together with scenes characteristic of mining operations and life illustrated *en route* through the passages or tunnels, such 35 scenes including life-sized figures of the usual miners, the work-animals, such as mules, and mining machinery and tools which are generally found in this class of mine, and also a car-track having ascending and descend- 40 35 ing gradients of varying lengths extending through said passages or tunnels and one or more cars having suitable motive power for ascending some of the gradients, the cars being of the kind used in coal-mines for trans- 45 porting the coal; but in this instance they are provided with seats to accommodate passengers who are to be carried through the mine to view it.

I have illustrated a type of my invention in 45 the accompanying drawings, wherein—

Figure 1 is a perspective view of a typical building found in coal-mine regions, the building being on the order of what is generally known as a "coal-breaker." The car- 50 track with a car thereon is shown as running through the building and upon the outside thereof, one side of the building being par-

tially broken away to show the interior passage or tunnel. Fig. 2 is a plan view of the winding tunnels or passages through which 55 the car runs. Fig. 3 is an enlarged cross-sectional view of a tunnel or passage, showing the car-track with a car containing passengers and showing a gallery or working level where a miner is at work and in the act 60 of cutting coal with a pick.

Referring to the drawings, in which like numbers of reference designate like parts throughout, 1 is a frame building or house planned like an ordinary coal-breaker structure and having an entrance 2 and an exit 3 in the front thereof near the ground-level and through which passes a car-track 4, having a coal-car 5 traveling thereon. The shaft 6, starting at the entrance 2, extends in the way 65 70 of a tunnel or passage along a straight stretch for a short distance, thence it turns at 7 and runs on an ascending gradient 8 for a considerable distance, and turning again upon itself at 9 it continues for a short way, 10, 75 when it is curved again at 11 and proceeds on a straight path 12 until it turns again on itself at 13 and continues a short distance, (indicated at 14,) when another turn is made at 15, and a comparatively long straight stretch 80 85 16 follows until it turns again at 17 and proceeds on, as at 18, to the forward part of the structure and to the exit 3, from whence the track 4 extends and runs across the front of the exterior of the building to the entrance. 90 This makes an endless car-track extending through a circuituous route in the tunnels or passages, the grades of some of which ascend while others descend.

The bottoms or floors of the tunnels or 90 passages 6, as well as the walls and upper portions thereof, are lined with a suitable material 20, which in the artificial light used to illuminate the tunnels has the appearance of solid coal, like the face of a coal-working from 95 which the coal is mined, such surfaces being rough and jagged, as indicated in the drawings, and particularly in Fig. 3 thereof, and closely resembling the solid coal as found in the mines.

At suitable intervals along the route of the tunnels or passages 6 are illustrated by life-size figures miners at work in mining the coal and handling the same, as well as figures of

mules, which usually work in mines, together with all of the characteristic machinery and tools which are usually found in this class of mine. For example, at the point 21 in the 5 side of the stretch 16 of the tunnel there is shown what is known as a coal "breast" or "face" of a coal-working and at which a miner 22 is engaged at work with a pick cutting out the coal from the solid mass, the figure bearing 10 a hat with the usual miner's lamp fixed thereon and lighted to make the scene true and characteristic. At other points along the route the same scene as the one just described or other scenes may be shown—as, for instance, at the point 24 in Fig. 2 there is indicated another chamber or recess in the side 15 wall of the tunnel, wherein any desired and suitable scene may be illustrated, so as to be viewed by the passengers passing in the car 20 through the tunnel at that point.

The part of the car-track 4 which extends to the exterior of the building has a slight downward inclination from the turn 19 at the exit 3 to a point where it runs in the entrance 25 2, and it is upon this stretch of the track that the cars are stopped and held at rest to take on and let off passengers. The car, being loaded at this point with persons, is allowed to gravitate along the track into the entrance 30 2 of the tunnels 6, whence it continues on to the turn 7, at which point is arranged a moving cable 25, which travels upwardly along the upgrade 8, and the car is constructed to automatically grip this cable at the lower 35 point of the stretch of the cable, so as to be carried thereby up the principal ascending grade of the route. This upgrade practically ceases at the point 9, (see Fig. 2,) and from that point on to the exit 3 the car-track runs 40 on slightly descending and ascending gradients of varying lengths and so arranged that the car when it is released from the high end of the cable at the point 9 may run over the remainder of the route by gravity.

45 While I have shown but one car for the sake of simplicity, in actual use I employ a train of several cars. Of course a great variety of characteristic scenes may be represented along the route or way in its various 50 stretches and windings, though I have shown but one characteristic scene in Fig. 3. The tunnels or passages may be made with as many grades and convolutions as desired, and the interior of the same is illuminated with 55 electric or other lights practically throughout the entire route, though at two or more places there is an absence of light, and the car passes along at such places through darkness to make the reproduction of the mine more realistic.

60 and to lend variety to the effect. While I have not used many of the technical terms which are employed in connection with the various parts and structures in the coal-mine and while I have not illustrated many of such 65 features, it will be understood that the reproduction or representation of the mine is to embody all the well-known technical features

that may be desired. The so-called "adit" or opening by which the mine is entered or from which the cars make their exit may be 70 much more inclined than what I have herein shown, and, in fact, sufficient inclination may be given the same to cause the loaded car when entering the tunnel to gain sufficient momentum to carry it through over the entire 75 route of the passage.

This novel form of amusement apparatus in addition to affording considerable amusement to the passengers who use it at the same time it gives them a very good idea of what 80 the interior of a coal-mine is like and how the operations of mining the coal are carried on. By employing a sufficient number of representative scenes at intervals along the tunnels one may in a single trip of a few minutes 85 through the structure gain considerable insight into the workings of and the life in a mine of this character. I have actually used a structure substantially on the order herein set forth and on a scale sufficiently large to 90 have in use about three trains of three coal-cars each, and the same has been in daily operation for some time with great success.

I wish to be understood as not limiting my invention to the precise forms of construction 95 herein set forth, as various modifications may be made in the different parts thereof without, however, departing from the spirit of my invention.

Having thus described my invention, what 100 I claim, and desire to secure by Letters Patent, is—

1. An amusement apparatus embodying the representation or reproduction of a coal-mine or the like and consisting in the combination 105 of a building typical of the mining region or plant, the representation of a mine located in said building and comprising a suitable shaft or entrance, the usual drifts and galleries or working levels from where the coal 110 is in course of being mined or cut, and having scenes characteristic of mining operations illustrated in full-sized figures and objects *en route* through said subterranean passages, including miners, suitable mining machinery 115 and work-animals, the said subterranean passages being constituted by the said shaft, drifts and galleries or working levels and forming a continuous mining passage-way, a car-track extending through said subterranean 120 passages with ascending and descending gradients and making the circuit of the passages, and one or more passenger-cars running on said track and having suitable motive power for carrying them up some of said 125 gradients and being adapted to gravitate down and up other of the gradients, substantially as and for the purpose set forth.

2. An amusement apparatus embodying the representation or reproduction of a coal-mine 130 or the like and consisting in the combination of a suitable building or housing, the representation of a mine located in said building and comprising a suitable shaft or entrance,

the usual drifts and galleries or working levels from where the material is being mined and the same constituting a continuous subterranean mining passage-way, scenes characteristic of mining operations illustrated by figures and objects located at intervals through said passage-way, a car-track extending through said passage-way with ascending and descending gradients, and one or more passenger-cars traveling on said track through

said continuous mining passage-way, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of the two subscribing witnesses.

EDWARD C. BOYCE.

Witnesses:

WILLIS FOWLER,
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