C. H. CALESON.

EXCAVATOR.

APPLICATION FILED JULY 29, 1908.

912,806.

Patented Feb. 16, 1909.

2 SHEETS—SHEET 1.

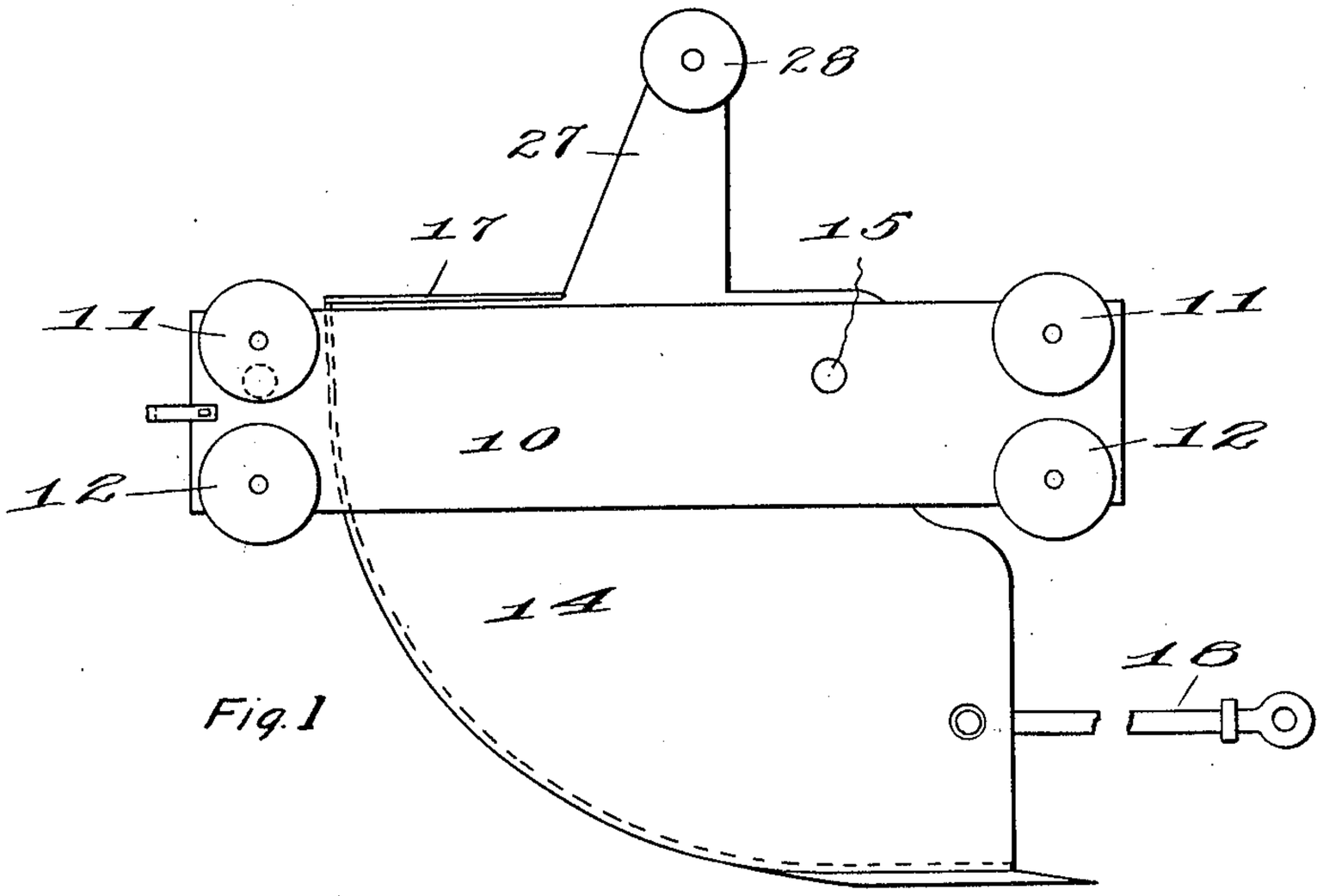

Fig. 1

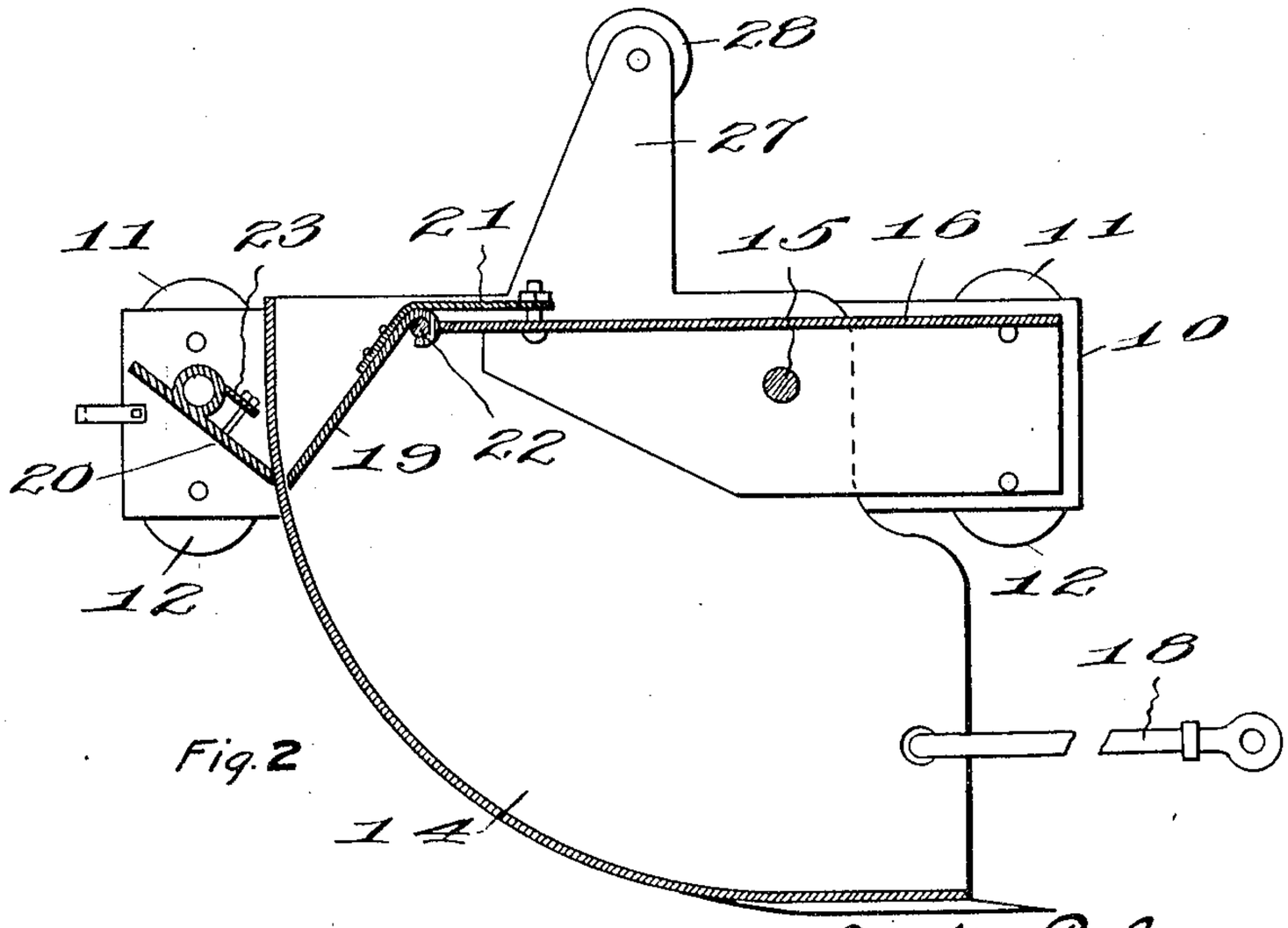

Fig. 2

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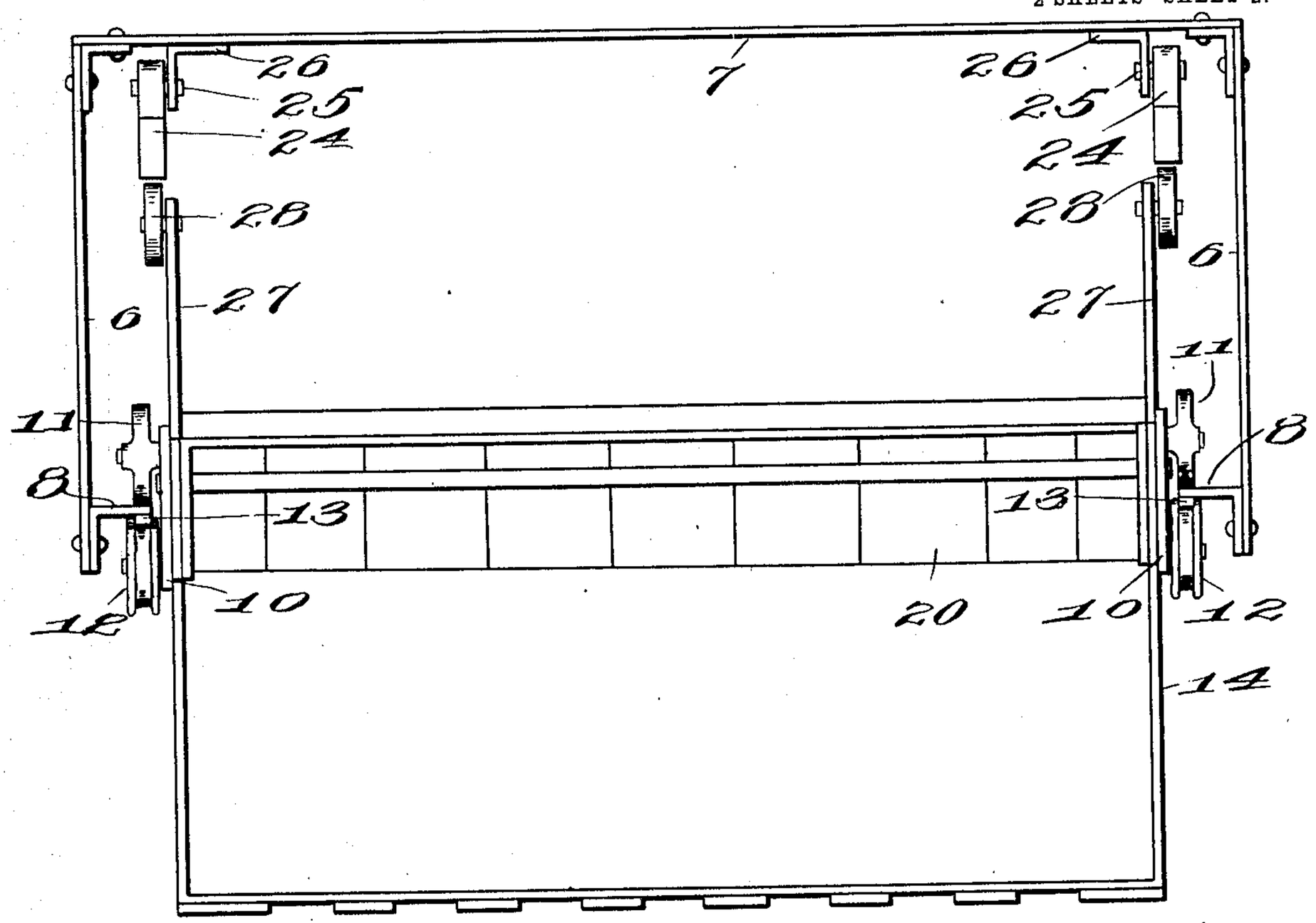

Fig. 3

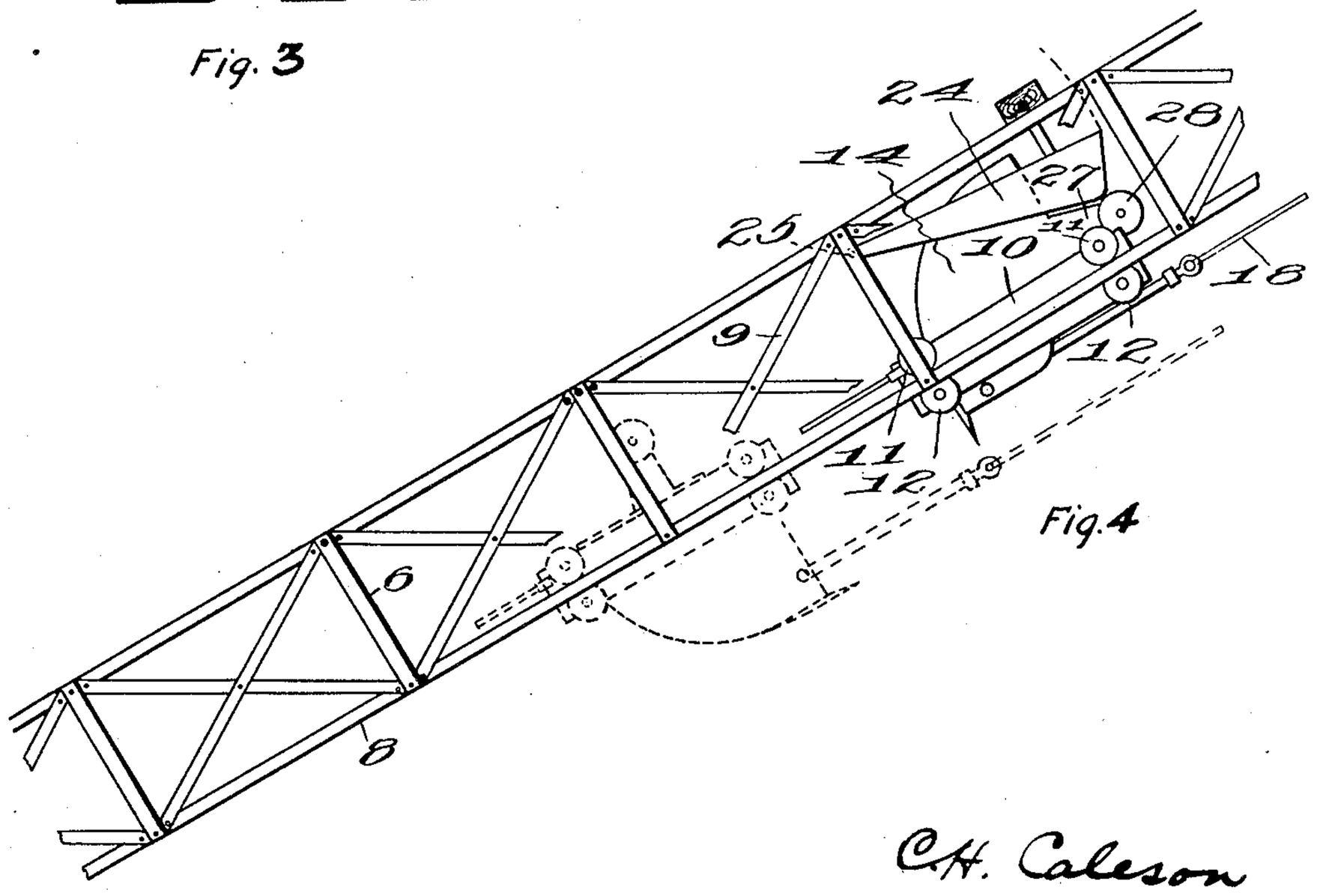

Fig. 4

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UNITED STATES PATENT OFFICE.

CHRISTOPHER H. CALESON, OF SPOKANE, WASHINGTON.

EXCAVATOR.

No. 912,806. Specification of Letters Patent. Patented Feb. 16, 1909.

Application filed July 29, 1908. Serial No. 445,911.

To all whom it may concern:

Be it known that I, CHRISTOPHER H. CALESON, citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Excavators, of which the following is a specification.

This invention relates to excavators, and particularly comprises a novel and improved form of bucket arranged to run up and down on an inclined track, which latter may be set at any angle desired. Novel and improved means are provided for dumping the bucket at the upper end of the run.

The invention will be found particularly useful on ditches and canals to operate on the sides thereof, and will excavate the dirt from the bottom of the ditch and raise the same to the banks or otherwise as desired.

The invention is illustrated in the accompanying drawings in which—

Figure 1 is a side elevation of the bucket; Fig. 2 is a longitudinal vertical section; Fig. 3 is an end view of the track and bucket; Fig. 4 is a side view of the track and bucket, the latter being shown in full lines in dumping position, and in dotted lines in carrying position.

Referring specifically to the drawings, the track as shown in Figs. 3 and 4 is preferably constructed of metal shapes, having side bars 6, upper cross bars 7 and rails 8 at the lower ends of the side bars, the rails being preferably formed of angle irons so that the carriage of the bucket will run on the flanges thereof. These parts are suitably braced, as indicated at 9, and are otherwise connected and bolted together to form a rigid track and structure within or along the under side of which the bucket operates. In use, the lower end of this track will be placed in a ditch and the upper end will be supported on the bank or dump, and obviously it may be set at any angle desired.

The bucket carriage consists of a pair of side frames 10 each of which has front and rear upper and lower wheels 11 and 12 which run respectively on the upper and end sides of the track 8. The lower wheels 12 are grooved, and run on a rib 13 on the under side of the track 8. A segmental bucket 14 is pivoted by a cross rod 15 between the carriage frames 10, the pivot rod passing through the opposite sides of the bucket. The side frames 10 are spaced apart by a flanged top plate 16 extending across between the carriage frames and assisting in supporting the bucket. At the upper edge the sides of the bucket have flanges 17 which are arranged to strike the upper edge of the side frames 10 to prevent the bucket swinging down below the horizontal or operative position. A cable 18 is attached to the sides of the bucket near the bottom thereof for the purpose of hauling the same up the track, and gravity will return the bucket to the bottom of the incline.

To dislodge coal or sticky soil from the bucket, scrapers 19 and 20 are provided, acting respectively on the upper and under side of the bottom of the bucket. The scrapers 19 are held in operative position on the bottom of the bucket by springs 21, said scrapers being pivotally hung or hinged at the rear end of the top plate 16, as indicated at 22. The rear scrapers 20 are held in position against the under side of the bottom of the bucket by springs 23. Said springs produce a yielding pressure of the scraper against the opposite sides of the bucket bottom, and the scrapers are set at a proper angle to clear the bucket bottom of any matter adhering thereto, when the bucket is dumped.

The bucket is dumped by means of a pair of trips 24, each comprising a triangular shaped block pivoted at 25 to an angle bracket 26 fastened to the top of the track. At each side the bucket has an arm 27 projecting upwardly and provided with a roller 28. The trips are properly positioned to be struck by these rollers.

In operation, when the bucket is hauled up from the bottom of the incline it will pick up a load of dirt from the side of the ditch, and on reaching the trips 24 the said trips will lift and allow the bucket to pass thereunder, the trips being lifted by contact of the rollers 28 therewith. The cable 18 is then slacked, after the bucket passes the trips, and the bucket slides back down the incline and the rollers 28 strike the blunt upper ends of the trips thereby tilting the bucket on its pivot 15, and dumping the same, and when dumped the rollers 28 will pass under the trips and the bucket will resume its former

position and run down to the lower end of the incline, for the next load. The trip blocks are shaped to produce the result indicated, and they operate automatically to dump the bucket in the manner described.

I claim:

1. The combination with a track, a carriage movable back and forth along the same, and a dumping bucket supported by the carriage, of trips mounted on the track, and arranged to dump the bucket.

2. The combination with a track, a carriage movable along the same, and a dumping bucket mounted on the carriage and having projecting arms, of a trip comprising a block pivoted to the track, to swing up and down and arranged to be struck and lifted by the arm to allow the bucket to pass in one direction and to strike said arms and tilt the bucket as it passes in the other direction.

3. The combination of a track having depending sides and rails at the lower edges of said sides, a carriage having wheels which run on said rail, a dumping bucket pivoted to the carriage and having upwardly extending arms, and trips pivoted in the upper part of the track and arranged to swing up and down and hanging in position to be struck by said arms, and shaped to allow the bucket to pass in one direction and to stop the arms and dump the bucket as it passes in the other direction.

4. The combination with opposite side frames provided with wheels, of a cross piece connecting the side frames and forming a top, and a segmental bucket pivoted between the side frames and arranged to swing up and down therebetween.

5. The combination with side frames provided with wheels, of a segmental dumping bucket pivoted between said frames, and a scraper supported by the frames and arranged to bear against the bottom of the bucket.

6. The combination with a pair of wheeled side frames, of a segmental bucket pivoted between the same and arranged to swing up and down, and spring pressed scrapers supported by the frames and bearing against opposite sides of the bottom of the bucket.

7. The combination with an inclined track, and a carriage which runs thereon, of a dumping bucket pivoted to the carriage and having upwardly extending arms provided with rollers, and trips comprising blocks pivoted to the track and arranged to be struck by the rollers, said trips having a long inclined side presented at an acute angle toward the lower end of the incline, and upper ends presented at an obtuse angle toward the upper end of the incline, whereby when the bucket is drawn up the track the trips will lift and pass the same, and when the bucket runs down the track the obtuse ends of the trips will strike the rollers and dump the bucket.

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

CHRISTOPHER H. CALESON.

Witnesses:

HUGO F. LUHMAN,

G. A. GRAHAM.