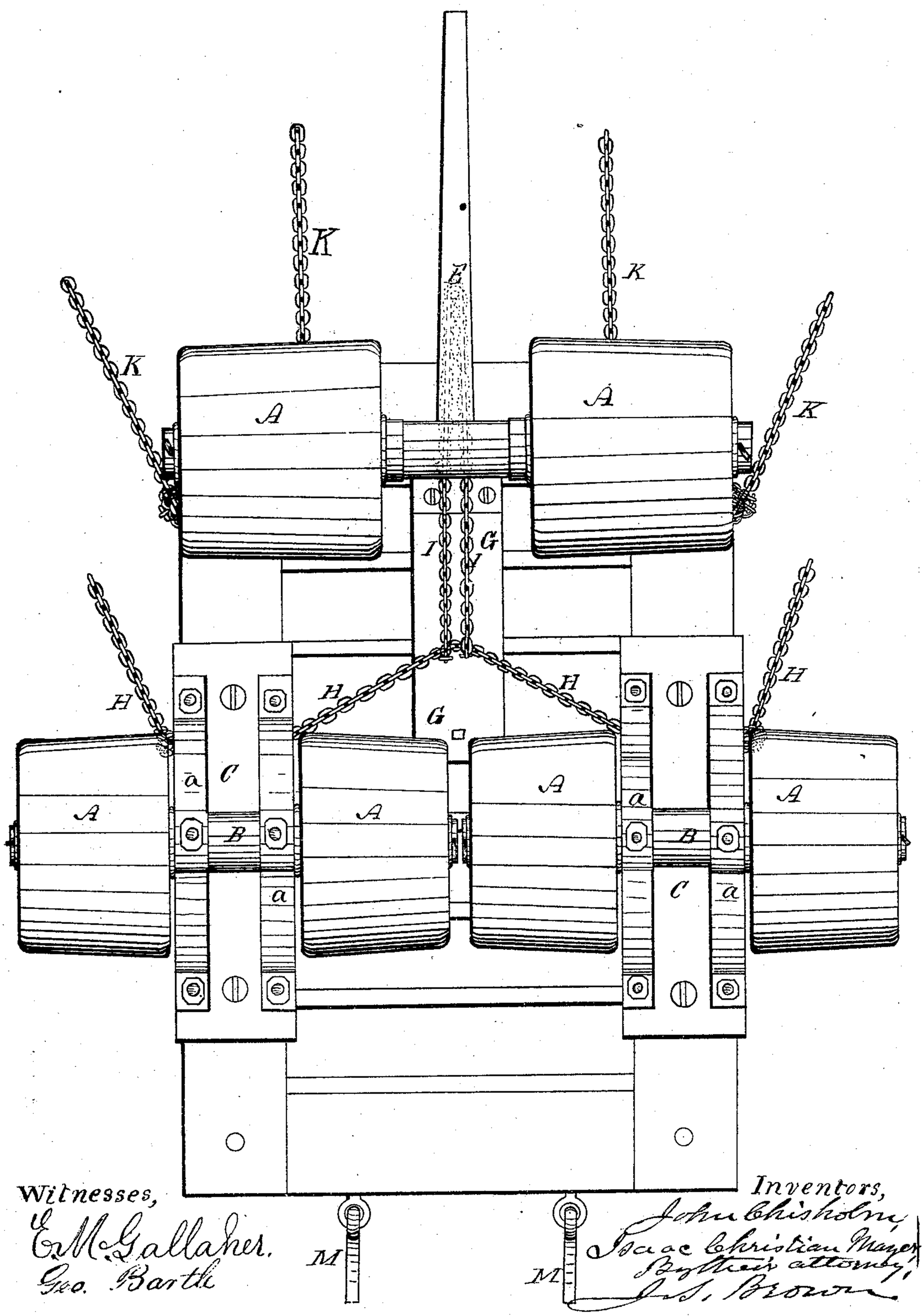
2 Sheets--Sheet 1.

J. CHISHOLM & I. C. MAYER.

Trucks.

No. 135,205. *Fig: 1.* Patented Jan. 28, 1873.



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2 Sheets--Sheet 2.

Trucks.

No. 135,205.

Fig. 2.

Patented Jan. 28, 1873.

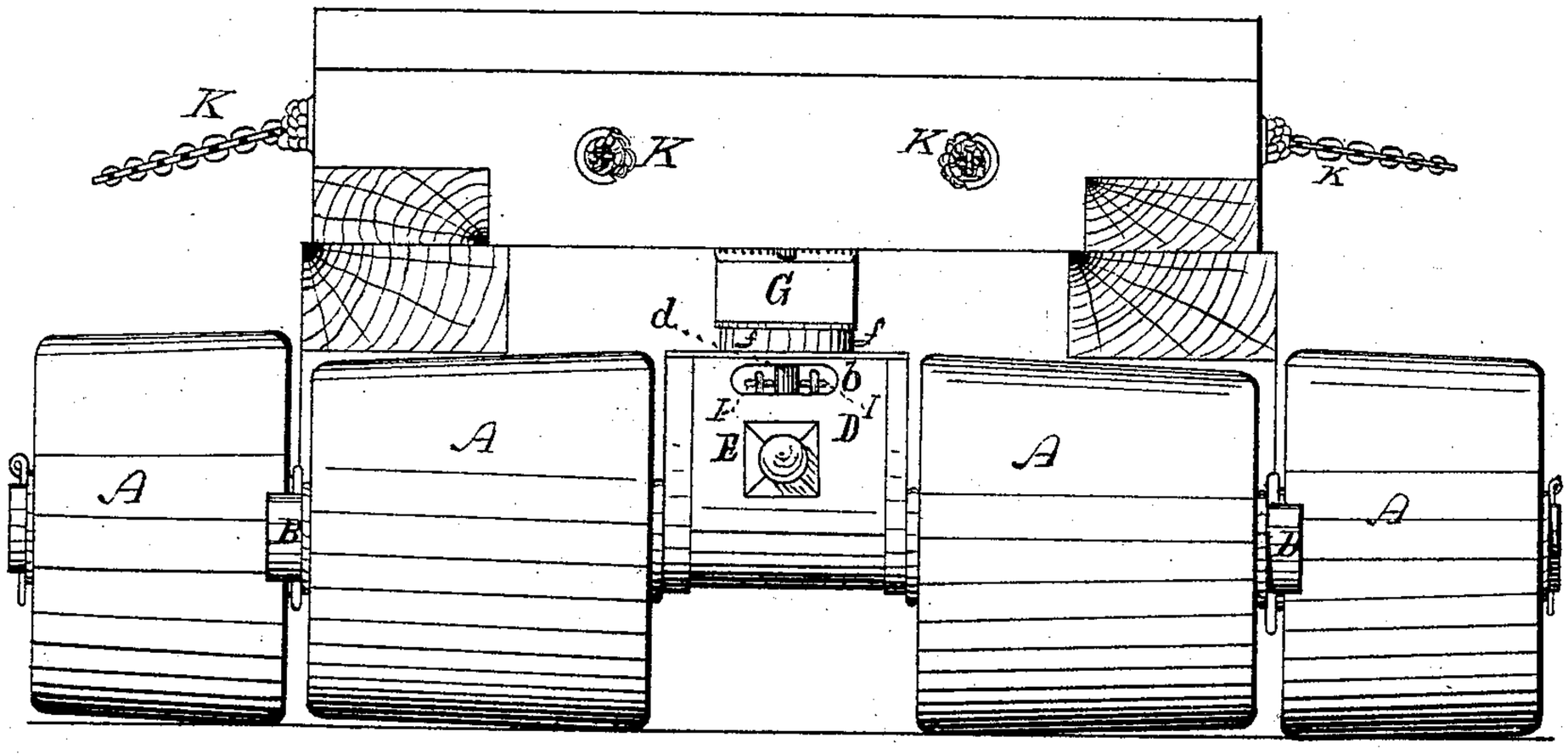


Fig. 3.

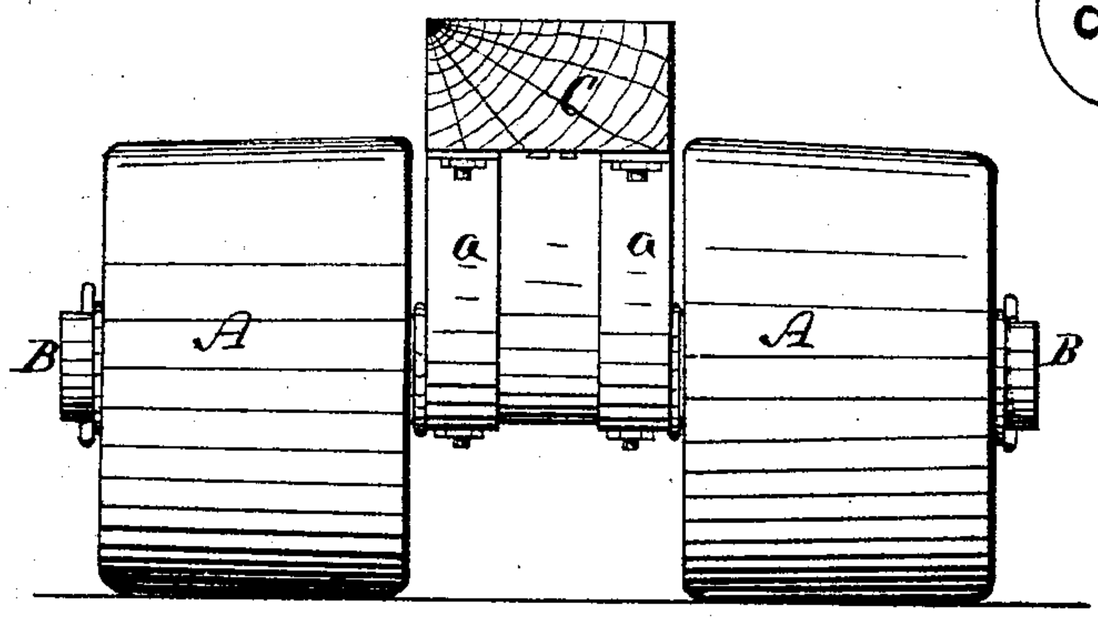


Fig. 5.

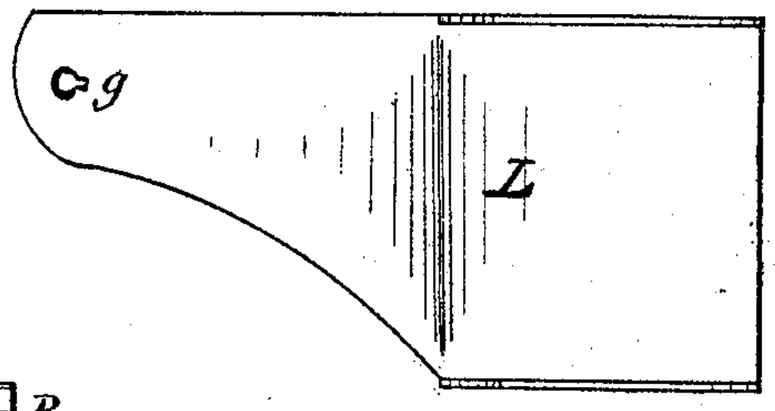
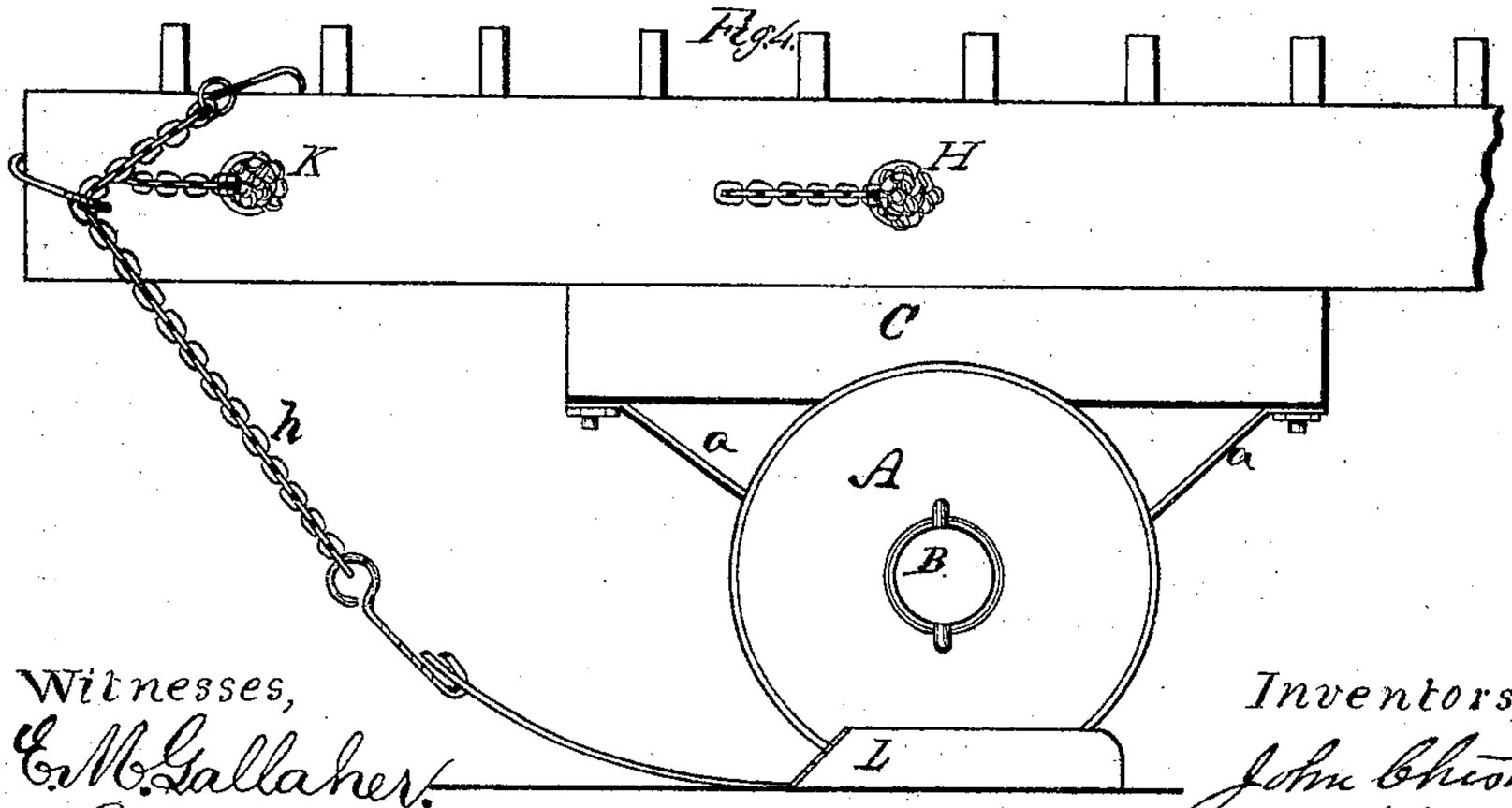


Fig. 4.



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UNITED STATES PATENT OFFICE

JOHN CHISHOLM AND ISAAC C. MAYER, OF TORONTO, CANADA.

IMPROVEMENT IN TRUCKS.

Specification forming part of Letters Patent No. **135,205**, dated January 28, 1873.

To all whom it may concern:

Be it known that we, JOHN CHISHOLM and ISAAC CHRISTIAN MAYER, now residing in Toronto, in the county of York, Province of Ontario, Canada, have invented an Improved Apparatus for Moving Houses and other Buildings and Heavy Bodies; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making part of this specification—

Figure 1 being an upward view of the apparatus as applied to the bottom of a building ready for moving the same; Fig. 2, a front view of the same; Fig. 3, a front view of one of the side trucks of the apparatus; Fig. 4, a side view of a part detached, showing the application of one of the improved brakes applied to the trucks; Fig. 5, a top view of one of the brakes.

Like letters designate corresponding parts in all of the figures.

The essential parts composing our improved apparatus are, first, three or more trucks, on which the building is supported and moved; second, a set of chains, or their equivalents, peculiarly arranged to prevent spreading or injuriously straining the timbers of the building; third, a set of peculiarly-applied brakes, to prevent a too rapid movement of the building in descending steep hills.

Our improved trucks are constructed substantially in the following manner: Each side or rear truck has two wheels, A A, of solid wood, preferably sycamore, which is close and tough in fiber, so that they do not require to be iron-banded. They may be made of any desired dimensions; but, for general use, we make them twenty-five inches in diameter, and twenty-one inches axial dimensions, or thereabout. Their peripheries are made slightly tapering from the inner to the outer faces. These wheels revolve on a heavy axle-tree, B, made preferably of hickory or oak—say, nine inches square, and having bearings tapering from nine to eight inches in diameter—and they are fastened thereon, as usual, with linch-pins and washers. The body C of each truck is a single timber, of white-oak or other strong, tough wood—say, four feet long, twelve inches wide, and six inches thick—bolted upon the top of the axle B at right angles thereto, and secured thereon by strap-braces *a a* of iron—say, about three inches wide and one-half inch thick—bolted to the under side of the axle and to the ends of the body. We also plate its upper surface with half-inch iron. These body-timbers occupy the full distance between the wheels A A, which, with the dimensions above given, are one foot apart. The front truck is made in the same manner as the side trucks above described, except that in place of the transverse body-timber there is an additional block, D, laid longitudinally upon the axle-tree between the wheels, and bolted thereto, the top being plated with thick iron, and banded to the axle with straps of iron one by two inches. The axle of this truck is mortised to receive the pole E; and a hole, *b*, is made through it from front to back side, through which one of the brace-chains extends. A bolster-block, G, about six feet long, nine inches wide, and six inches thick, and plated with iron on its under surface for about six inches at the forward end, is securely fastened to the floor-timbers of the house at the center of the inner end thereof. Its forward end rests on the axle of the front truck, as represented, and is coupled thereto by a king-bolt or pivot-pin, *d*, of sufficient size—two and a half inches in diameter, or thereabout—which passes through the said bolster-block and into the sill of the house several inches. The lower end fits and turns in a vertical hole through or in the axle of the front truck, as represented. A metallic washer, *f*, is placed around this king-bolt between the bolster-block and axle-tree to reduce friction and allow the truck to turn freely under the house.

Two side trucks are placed under the building about two-thirds of the way back from the front end, under which the front truck is placed in the middle. For houses of ordinary size—say, twenty-five by thirty feet dimensions—three trucks are sufficient; but for large buildings additional side trucks are employed.

The arrangement of brace-chains, which constitutes another feature of our invention, is for the purpose of binding the sides of the house together, and preventing them from spreading while in the act of moving it. One chain, H, of sufficient strength, is extended across the building about midway of its length and through holes in the side sills thereof, the holes

being bushed with iron to prevent injury to the sills thereof. The chain is fastened at the ends to prevent its drawing inward through the holes, the readiest way of fastening which is to tie knots in the chain outside of the sills. A doubled chain, I, which we term the "bridle-chain," has its ends tied or secured to the middle of the cross-chain H, and its doubled end is passed through the hole *b* in the axle of the front truck. To this bridle-chain the middle team of horses is hitched, or a traction-engine, if one is used for the purpose. Other chains K K are passed diagonally through the sills near the front corners, by which chains other teams, when required, draw. The action of all these chains, when the teams are pulling, is to press and bind the sides of the building together so as to effectually prevent spreading or racking its timbers.

Brakes L L are applied to two or more of the wheels of the side trucks. These brakes are made of plate-iron, about one-half of an inch thick, and shaped substantially as represented in Fig. 5, the main part of each brake being wide enough to embrace the whole tread of the wheel, with side edges turned up two or three inches; while the forward end tapers on the outward edge inward, and also bends upward. It has a hole, *g*, in the front end to receive a hook or other fastening, by which to attach it to a drag-chain, *h*, or its equivalent, secured to the sills or other part of the house in front of the truck. The brakes are so situated as to drag directly under the tread of the wheels, and thus cause the wheels to ride thereon and retard the motion.

These brakes are put in place when the trucks are to descend a hill, and at the bottom they are unfastened, and the truck-wheels pass over them. A brake for the outer wheel of each side truck is sufficient for the purpose.

The advantages of these improved trucks with broad wheels are such as to obviate several objections to truck-wheels of narrow tread. They do not cut up streets or roads, and rather improve than injure them; and they do not destroy or injure pipes or drains under the streets, while they secure the building from the possibility of falling over when the road is sidling or when the trucks are making short turns. Fewer men and horses are required than when rollers are used, and the speed of moving, especially in turning corners, is much enhanced, while the trucks are of simple and cheap construction.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The side trucks, composed, each, of the tapering wheels A A, axle B, body C, of a single timber, at right angles to the axle, and the strap-braces *a a*, constructed as described, and arranged, in combination with the front truck, substantially as herein specified.

2. The front truck, composed of the tapering wheels A A, axle B, having the chain-hole *b* therein, and the bolster-block G, held upon the axle by the king-bolt *d*, constructed and arranged substantially as herein specified.

3. The brace-chains H I K K, arranged substantially as and for the purpose herein specified.

his
JOHN + CHISHOLM.
mark.
I. C. MAYER.

Witnesses:
A. CHRISTIE,
WM. MORTIMER CLARK.