

(No Model.)

C. SØRENSEN.
TRANSPORTABLE ENGINE.

No. 275,089.

Patented Apr. 3, 1883.

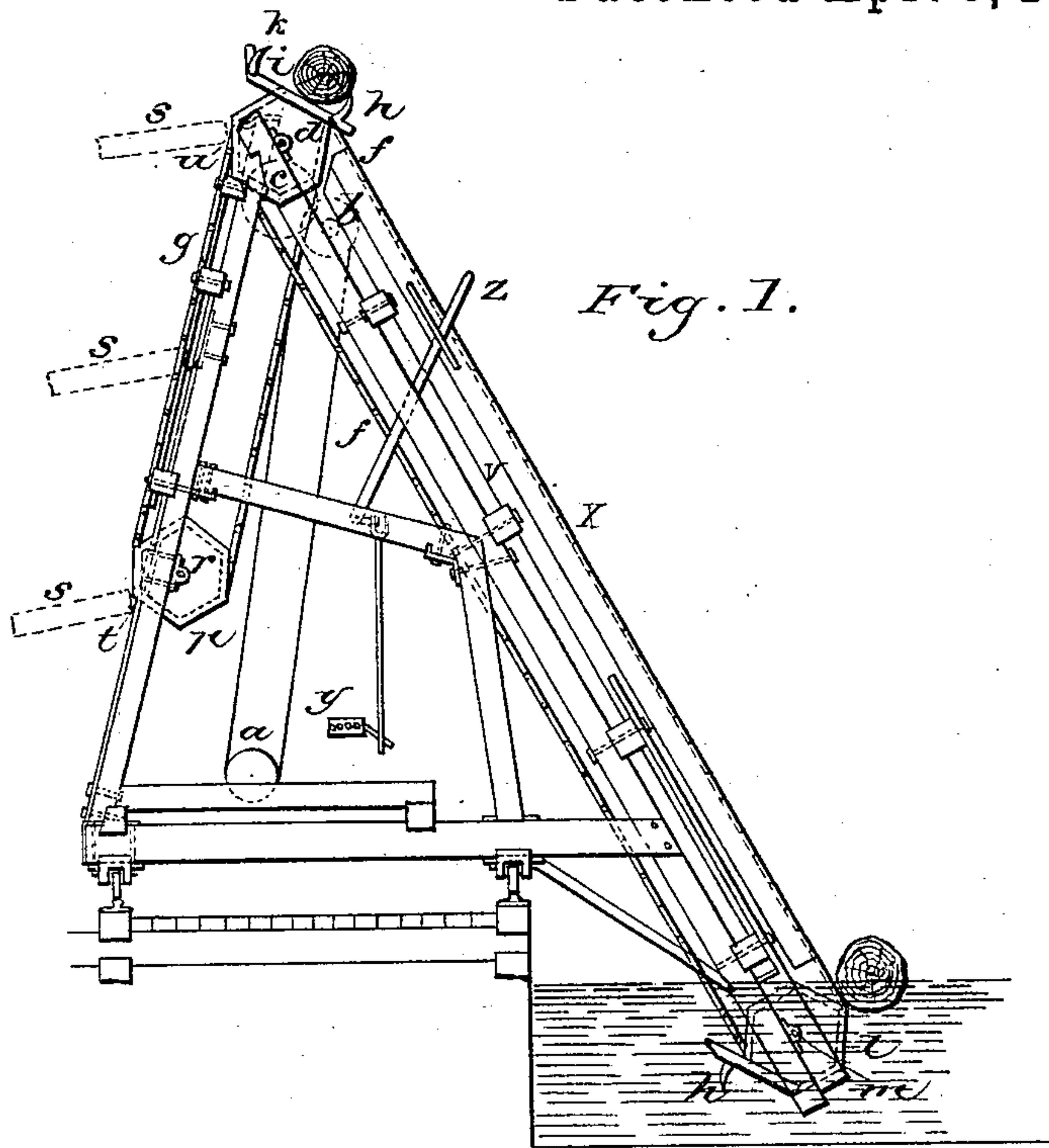


Fig. 1.

Fig. 2.

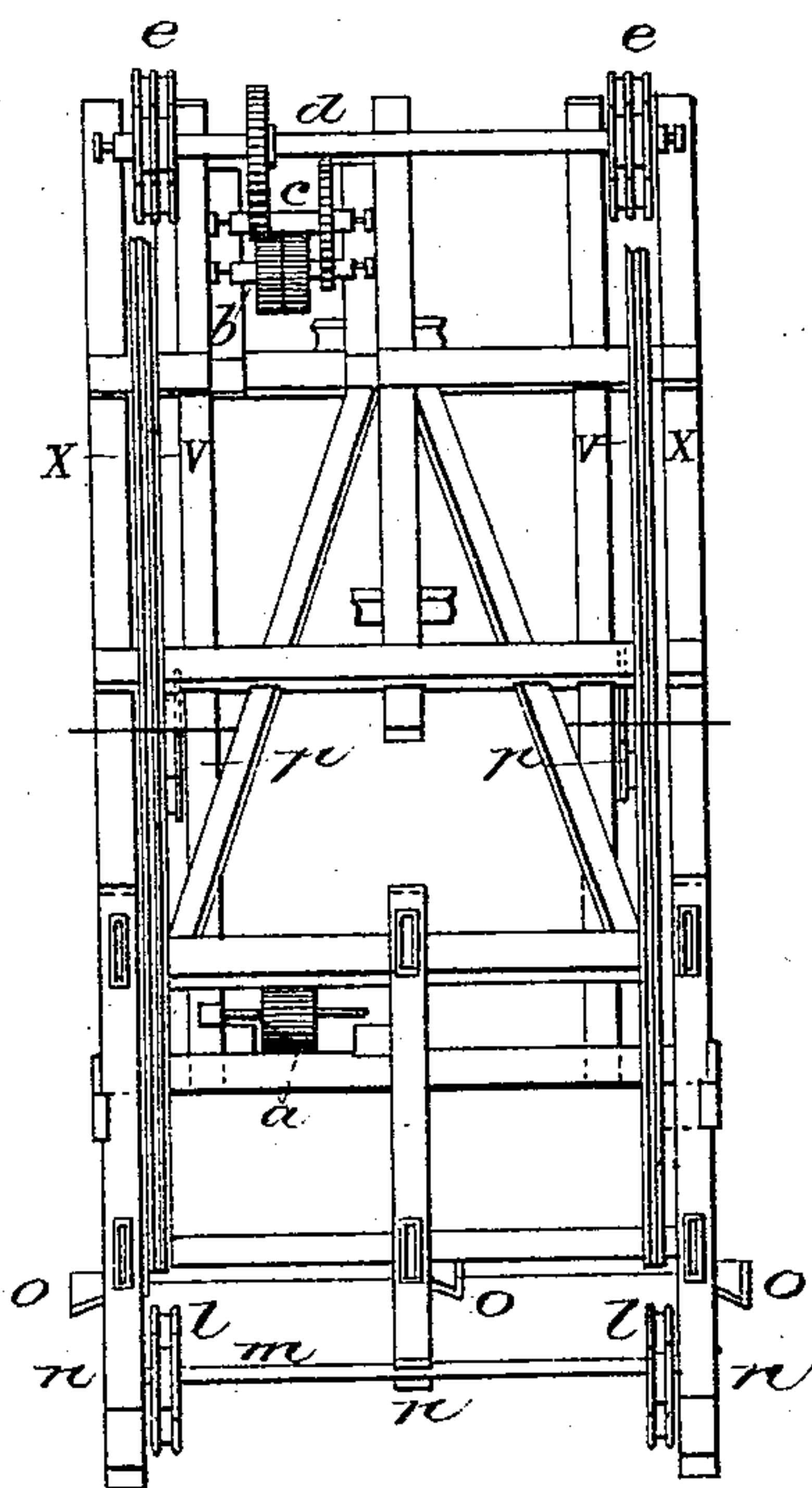
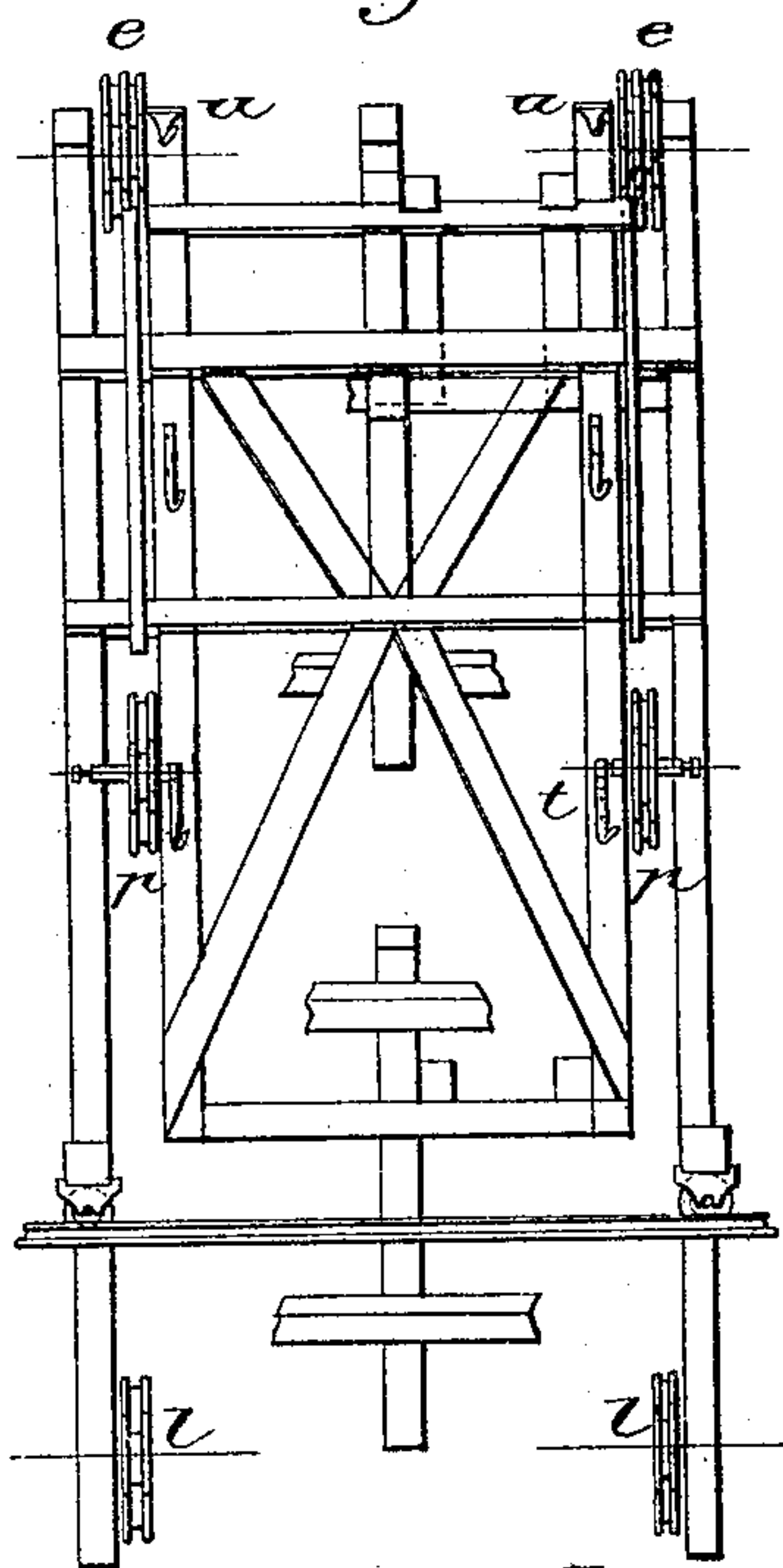


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHRISTEN SÖRENSEN, OF SUNDSVALL, SWEDEN.

TRANSPORTABLE ENGINE.

SPECIFICATION forming part of Letters Patent No. 275,089, dated April 3, 1883.

Application filed October 24, 1882. (No model.) Patented in Sweden July 25, 1882.

To all whom it may concern:

Be it known that I, CHRISTEN SÖRENSEN, of the city of Sundsvall, in the Kingdom of Sweden, have invented a Transportable Engine for Drawing up Timber, of which the following is a specification, reference being had to the accompanying drawings.

The object of this invention is to construct an apparatus by means of which the timber kept in the basin of a saw-mill may be heaved ashore and piled up.

Figure 1 is a side elevation; Fig. 2, a front view, and Fig. 3 the apparatus seen from back.

The apparatus may be put up either in a lighter, or, as shown in the accompanying drawings, on a railway running along the quay, so that it may be moved backward or forward along the place intended for the storing of the timber, due care being taken that the projecting nethermost part of the apparatus lie so deep in the basin that the water, when at its lowest height, reaches the upper edge of the nethermost chain-wheels.

The engine for raising the timber is propelled either by the machinery of the saw-mill or by a separate motor, which, in case the apparatus is placed in a lighter, may be put inside the wooden stand of the apparatus, which in that case will be lined with boards, and will answer the purpose of an engine-house.

If the motive power of the machinery is to be transferred, it will be done most easily by means of a simple guide for the axle-boxes, made of round iron bars, moving in a wooden bearing, the bifurcated ends of which are connected by universal joints. Every time the apparatus is moved, one bar or more is coupled on or disunited from the motion-bars. The transferring of the power may, besides, be done in any other way. The power is transferred to the axle *a*, and then it is again transferred by means of a strap to the axle *b*, from which it is transferred by two gearings to the main axle *d*, which is supported by three bearings and furnished at its ends with two double-grooved hexagonal chain-wheels, *e e*. In the grooves of these wheels run not only the two chain cables *f*, each provided with two lifting-hooks, *h h*, but also the two chains *g*, of which each is supplied with a lowering-hook, each in a groove of its own. The hooks *i* are fur-

nished with somewhat movable iron crows *k*. The chains *f* run in the nether part of the apparatus, around the hexagonal wheels *ll* on the axis *m*, which rests in movable bearings *n* by means of wedges *o*. The lower part of the chains *g* runs around the hexagonal wheels *p*, the axle-bearings *r* of which may be moved, as occasion requires, for the purpose of tightening the chains. The ascending parts of the cables run either on their rollers, or, more simply, as in the drawings, on iron-mounted wooden slides *v*, the outer iron-mounted edges of which, *x*, lie higher than the chains, and serve as sliding-planes for the logs. The cables *g*, when descending, also run on such planes or rollers.

The apparatus acts as follows: The logs in the basin are carried to the apparatus, where they are seized by the crows *k* and lifted up to the upper chain-wheels *e*, from which they fall against the hooks *i* of the chains *g*. By these they are carried down to the spars *s*, from which they are rolled down to the timber-pile. When the pile has attained a certain height the spars are removed from the nethermost hooks, *t t*, and hooked onto those above. When the pile reaches these the spars are removed to the uppermost hooks, *u u*, and the movable crows *k* are taken off from the hooks *i*. Each log hauled up is shoved aside by the arm *z*; but when the log has passed, the arm returns to its former position. By the combination of levers every such motion may be marked on the calculating apparatus *y*, which thus scores the number of logs hauled up.

The advantages of the apparatus are: The situation of the timber store is independent of that of the bridge on which the timber is hauled up. No waste of time is incurred, since it will be unnecessary to fasten any chains around the logs for the purpose of hauling them up. A large quantity of timber may be heaped up on a comparatively small spot, since the lifting height may be adjusted as one thinks proper. Besides, by the application of the apparatus in case a large quantity of timber has come down from the bars to the mill in a short time, it may be quickly landed, thus avoiding the risk of having much floating timber that may be exposed to a storm. On account of the facility of moving the apparatus, it will be

easy to place the timber stores so as to insure great order throughout. Another advantage is that the expense of piling up each log of timber will be much lower when it is done this way than in any other manner.

By using the apparatus for lowering the timber the latter is saved from being broken to pieces, which may easily happen when it falls from the uppermost point of the apparatus down upon a pile of timber of small height.

The lifting and lowering hooks can be replaced by some other suitable contrivance.

I claim—

1. The combination of the hexagonal chain-

wheels *ee* and *pp* with the chain cables *g*, provided with the lowering-hooks *i*, having movable crows *k*.

2. The combination, with a suitable frame, of the hexagonal chain-wheels *ll* and *ee*, their chain cables *f*, and lifting-hooks *h*, and the chain-wheels *pp*, their chain cables *g*, and lowering-hooks *i*, substantially as and for the purposes set forth.

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Witnesses:

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