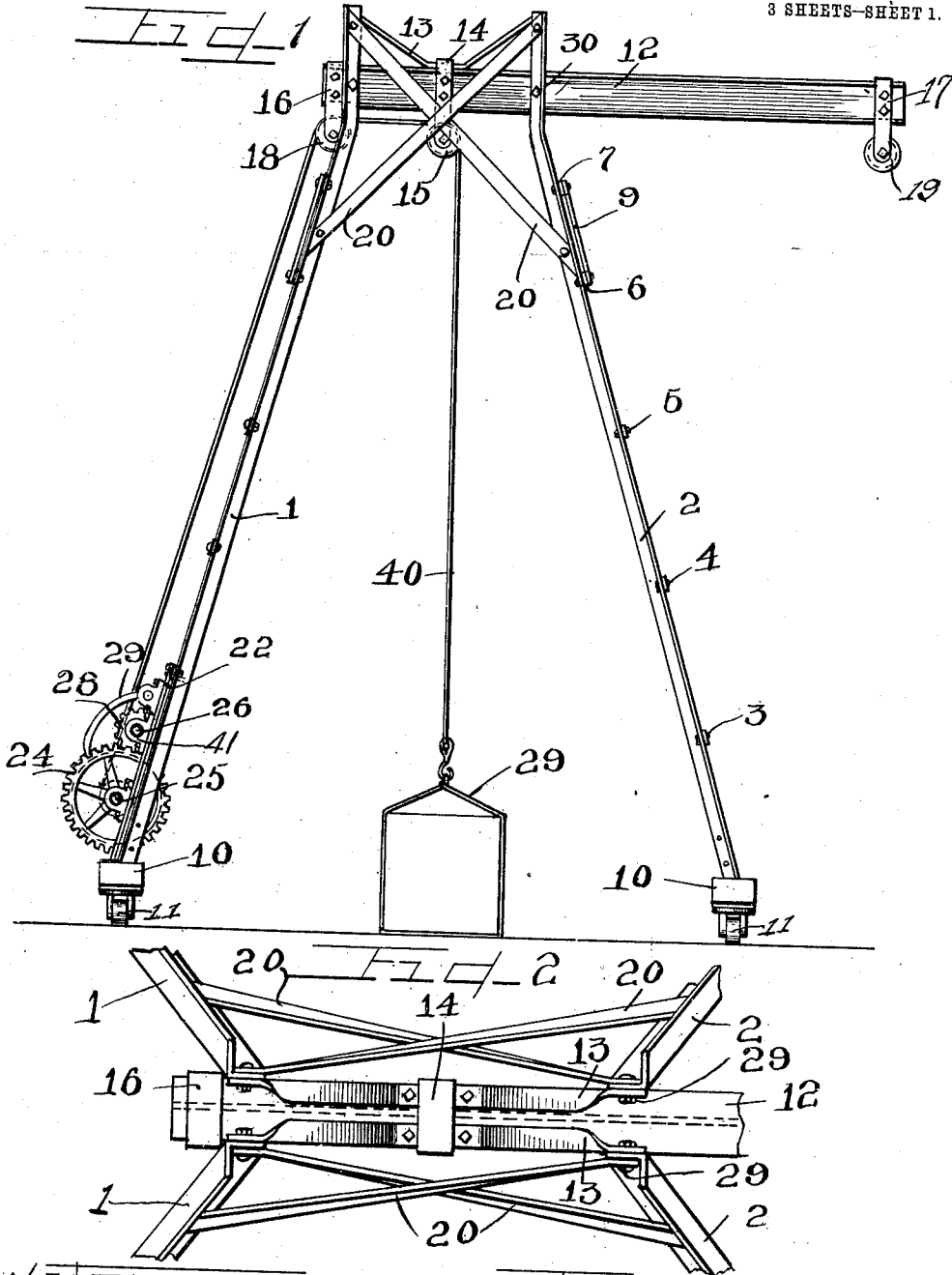


C. H. STRESENREUTER.
 BUILDER'S CRANE.
 APPLICATION FILED MAR. 7, 1910.

983,578.

Patented Feb. 7, 1911.

3 SHEETS-SHEET 1.



WITNESSES

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 J. C. Funnah

INVENTOR

Charles H. Stresenreuter.

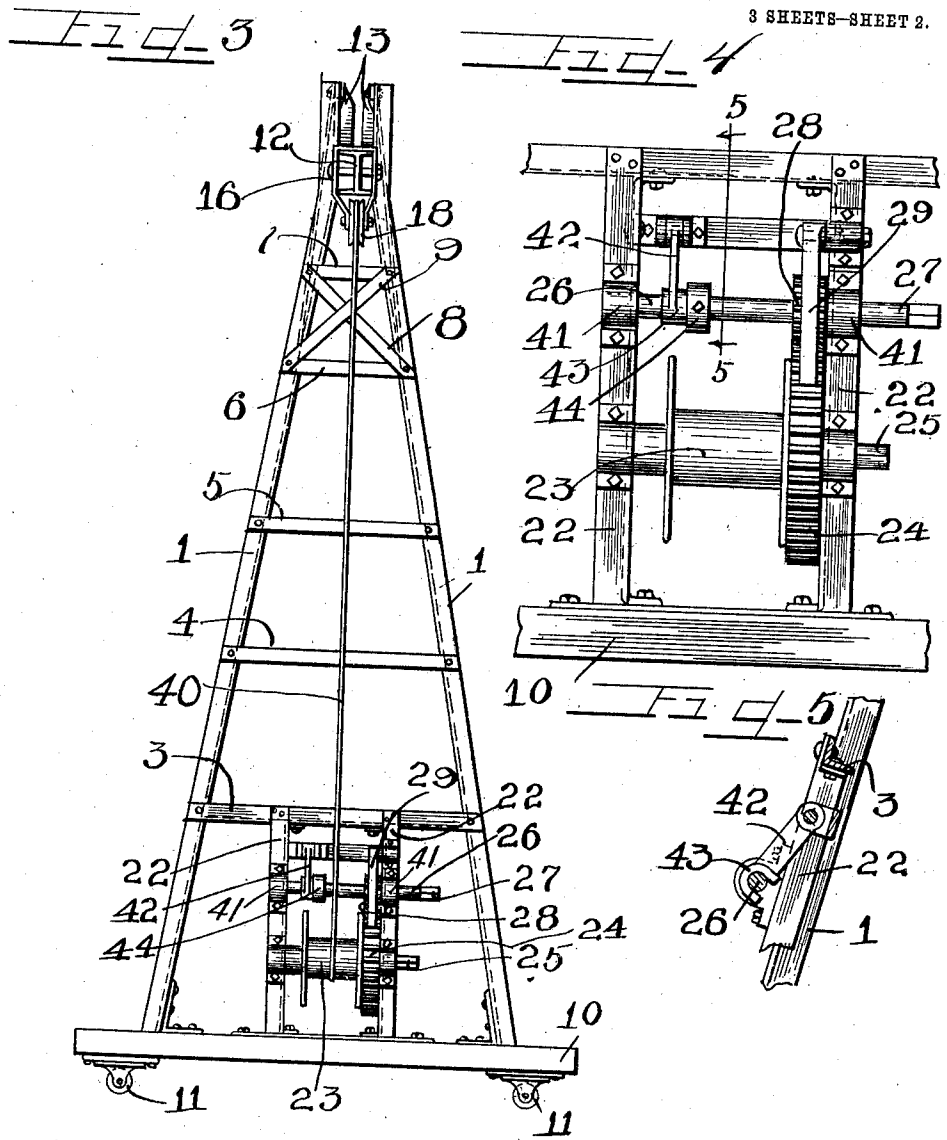
Charles H. Stresenreuter, Atty.

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3 SHEETS—SHEET 2.



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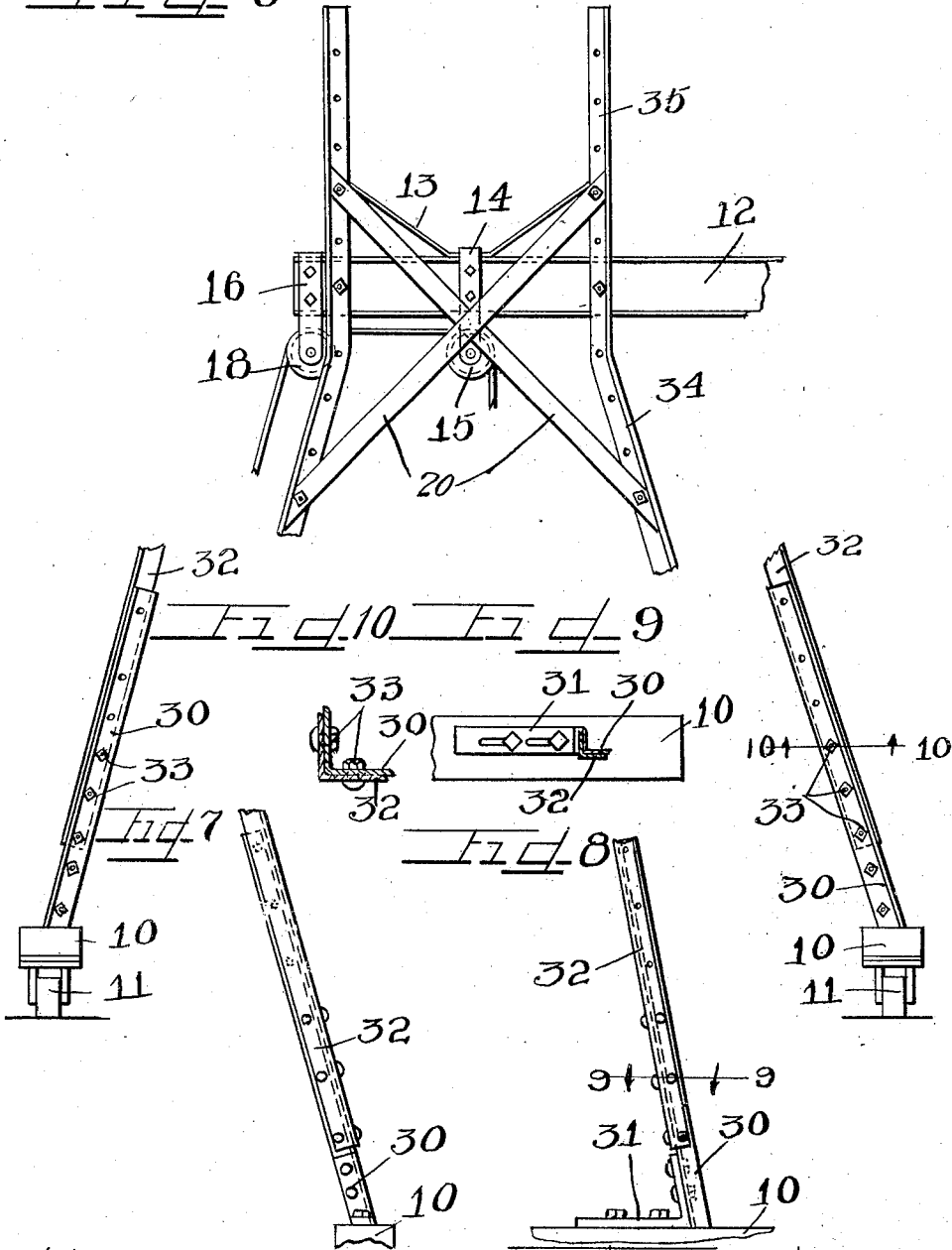
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3 SHEETS—SHEET 3.

Fig 6



WITNESSES
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BUILDER'S CRANE.

983,578.

Specification of Letters Patent.

Patented Feb. 7, 1911.

Application filed March 7, 1910. Serial No. 547,665.

To all whom it may concern:

Be it known that I, CHARLES H. STRESENREUTER, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Builders' Cranes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numbers of reference marked thereon, which form a part of this specification.

Cranes and hoists of many different kinds have been heretofore constructed and have gone into more or less extensive use for many different purposes. In certain building operations, however, none of the cranes or hoists heretofore devised have proven entirely satisfactory either because inconvenient to handle to permit the same to be quickly moved from place to place on the job or because, although capable of use in one part of the structure, in others they are incapable of use. One of the operations sometimes requiring a hoist or crane of considerable power and capable of being quickly moved from point to point on the job is the placing of the massive beams and girders employed in building frame or other structures requiring their use and in consequence much vexatious delay is occasioned and unnecessary expense. In some portions of the work it has proven exceedingly difficult to satisfactorily use any of the heretofore existing cranes without great loss of time and in some instances, considerable danger.

The object of this invention is to provide a hoist or crane adapted for use in handling heavy bodies of any kind and adapted particularly for use in placing beams or girders.

It is also an object of the invention to afford a device of the class described movably freely upon the completed or partly completed floor to elevate and place beams and girders or other heavy objects for the next succeeding story.

It is also an object of the invention to afford in connection with a device of the class described a laterally projecting crane arm by the use of which the beams or girders at the ends or sides of the building may be placed as conveniently and readily as those intermediate the sides or ends.

It is further an object of this invention to provide a crane in which the uprights are

longitudinally adjustable and in which the hoisting beam may be adjusted independently of the adjustment of the uprights.

The invention consists in the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is an enlarged fragmentary top plan view thereof. Fig. 3 is an end elevation. Fig. 4 is an enlarged detail view of the winch embodied in my invention. Fig. 5 is a section on line 5—5 of Fig. 4. Fig. 6 is a fragmentary view illustrating a construction in which the crane beam is adjustable as to height. Fig. 7 is an enlarged fragmentary detail of the lower end of one of the adjustable uprights. Fig. 8 is a similar view taken at right angles with Fig. 7. Fig. 9 is a section taken on line 9—9 of Fig. 8. Fig. 10 is an enlarged section taken on line 10—10 of Fig. 6, with parts omitted.

As shown in the drawings: Four uprights 1 and 2, are arranged in pairs to afford opposite ends of the machine, and each, as shown, comprises an angle bar or other structural steel form of suitable length and cross section to afford the requisite strength and connected together in pairs by means of transverse bars 3, 4, 5, 6, and 7, and braced near the top, as shown, by means of diagonal members 8 and 9. Each pair of legs thus formed affording the ends of the machine, are supported upon a sill 10, provided with trucks 11, which permit the machine to be readily moved as upon a floor. The upper ends of said legs are bent at an angle corresponding with the inclination of said ends so that the upper ends of each bar are substantially vertical and parallel and are rigidly engaged together by means of an I beam 12, rigidly secured between each pair of legs at the top and extending, as shown, rearwardly beyond the legs afforded by the angle bars 2.

The frame construction shown in Figs. 6 to 10 inclusive is substantially the same as that shown in Figs. 1 to 5, with the exception that it is adjustable. For this purpose, short sections 30, of angle bars or other structural bars are secured to the sills 10, by means of brackets 31, the lower arms of which are slotted longitudinally, as shown in Fig. 9, to permit adjustment thereof. The lower ends 32, of the uprights and the sections 30, are provided with apertures

spaced uniform distances apart, which are adapted to register and bolts 33, rigidly secure the uprights to the lower sections. The upper ends 34, of the uprights, and the vertical sections 35, are provided with apertures spaced suitable distances apart, adapting the brace members 20 for adjustment to the desired position. The I beam member 12, is vertically adjustable and is secured in place by bolts. By this construction the crane can be adjusted as to height adapting it for use in buildings in which the distance from floor to floor varies. This is important and permits the same crane being used under many different conditions and adapts the crane being adjusted so as not to interfere with other work.

Rigidly connecting the upper ends of the front and rear legs 1 and 2, are metallic straps or bars 13, which are bolted to the legs and are bent downwardly to said I beam between said legs and rigidly clamped thereto by means of a saddle strap 14, which engages thereover and the ends of which project below the I beam and journaled between which below the I beam is a sheave 15. Corresponding straps 16 and 17, are engaged over the opposite ends of said I beam and journaled on the lower ends of each are sheaves 18 and 19. Transverse brace bars 20, are rigidly secured at the upper ends of each of said legs and extend downwardly and are bolted to the legs at the opposite end of the frame and approximately opposite the brace bars 8 and 9, as shown in Figs. 1 and 2, and rigidly secure said end frame members in unvarying relation with each other and positively support the crane arm afforded by the I beam 12.

A winch of any suitable type is secured to the sill and cross bar 3, on the legs 1. Said winch may be of any suitable kind or character. As shown, however, parallel uprights 22, are bolted or riveted to the cross bar 3, and sill 10, and journaled thereon is the winch drum 23, secured to which is a gear wheel 24, and as shown, the shaft or gudgeon 25, for said drum projects beyond one of said frame members 22, and may be engaged by a suitable crank for rotating the drum when considerable speed of rotation is required.

Journaled on the frame members 22, above the winch drum is a winch shaft 26, which is also slidable in the bearings 41, and is provided with an angular end 27, projecting beyond one of said frame members for engagement by a winch crank. A pinion 28, is provided on the winch shaft which meshes with said gear and secured on said frame above the winch shaft is a gravity pawl 29, which normally engages the gear 24, to hold the same from reverse rotation when supporting its load.

Means are provided for permitting the

shaft 26, to slide longitudinally in the bearings 41, and for locking the shaft in the desired position. As shown, an arm 42, is hinged to the frame and is provided with a hooked end 43, which is adapted to engage shaft 26, and a collar 44, on said shaft bears against the hook 43, and locks the shaft from sliding movement. When it is desired to adjust the pinion 28, out of mesh with gear 24, the hook 43, is swung from the shaft and the shaft shifted until the collar 44, is on the opposite side of the arm 42, when the arm is returned to normal and locks the shaft from sliding with the pinion and gear out of mesh.

The operation is as follows: The hoisting line or cable 40, is served over the sheaves 15 and 18, and to the drum 23, while hoisting intermediate beams and girders and other materials and is provided with any suitable timber hooks, slings or other means 29, for engaging timber or other weight to be supported, the crane being positioned intermediate the posts or supports upon which the timber is to be laid and by means of the winch the load is hoisted or swung into place. The clearance between the sheave and the floor is, of course, sufficient to permit the beam or girder to be hoisted to full height. Having placed its load, the machine is pushed on to the next position where the operation is repeated until the girder or beam for one of the side or end walls is reached. When this occurs, the line is passed also through the sheave 19, and the machine adjusted to bring the end of the crane arm 12, over the desired position. In this position the beam or girder is hoisted into place without difficulty and the machine immediately wheeled to the next position where its use is required, obviating all delay.

Owing to the present construction, the machine is obviously self-supporting. Guy lines of any kind are not required, and, owing to the construction described, enormous strength with comparatively light weight is afforded, thus enabling the device to be readily handled by a comparatively small raising crew.

Inasmuch as the end frames are connected at their tops by means of the I beam and braces before described which are connected therewith by means of bolts, as shown in Figs. 1 and 2, the machine may be very quickly knocked down for shipment or transportation, should it be desired, and when so knocked down, occupies but very small space and may as quickly be re-assembled upon the job. This will readily be seen by reference to Figs. 1 and 2, in which, as shown, the braces 13 and 20, are connected at the top of each leg by means of a single bolt 29, and as shown, the legs are connected with the I beam arm only by means of one or more bolts 30, for each pair of legs. It thus

follows that the removal of six (6) bolts suffices to permit the knocking down of the structure in which event the side braces still connected at one end with the legs, fold alongside the same.

Of course, various details of the construction may be varied. Inasmuch, however, as I have shown but one (and that the preferred) form of the invention, I do not propose limiting this application for patent otherwise than necessitated by the prior art, as numerous details of the construction may be varied without departing from the principles of the invention.

I claim as my invention:

1. A hoisting device embracing pairs of inclined end members affording an unobstructed space at their sides therebetween, a truck supporting each pair of end members, braces rigidly connecting the sets of members at the top thereof, a winch supported on one pair of end members at the bottom thereof, a crane arm secured between the upper ends of the pairs of members, and affording a part of the connection between the end members and projecting beyond the same and sheaves secured on the crane arm.

2. A hoisting device embracing two frames inclined toward each other at the top, braces rigidly connecting the frames at the top only, a horizontal hoisting beam rigidly engaged between the frames at the top thereof, sheaves on said hoisting beam and a winch secured on one of the frames.

3. A crane comprising parallel sills, truck wheels journaled thereto, frame members secured to the sills and inclining inwardly and said frames terminating at the upper ends in parallel portions, a crane arm secured to the parallel portions and extending outwardly from the frame and braces connecting the frame members at the upper ends.

4. A hoisting device embracing two frames inclined toward each other at the top, braces rigidly connecting the frames at the top only, a horizontal hoisting beam rigidly engaged between the frames at the top thereof, sheaves on said hoisting beam, a winch secured on one of the frames, and an individual truck supporting each frame.

5. A hoisting device embracing frames inclined toward each other and having the upper ends approximately parallel, braces rigidly connecting the frames at the top, a horizontal hoisting beam secured between the parallel ends of the frames and projecting laterally beyond the frames, sheaves on the extremities of the hoisting beam, a sheave secured to the hoisting beam intermediate the frames and a winch secured to one of the frames.

6. A hoisting device embracing frames inclined toward each other and having the

upper ends approximately parallel, braces rigidly connecting the frames at the top, a horizontal hoisting beam secured between the parallel ends of the frames and projecting laterally beyond the frames, sheaves on the extremities of the hoisting beam, a sheave secured to the hoisting beam intermediate the frames, a winch secured to one of the frames, a sill secured to the bottom of each frame and wheels journaled to each sill.

7. A knock down hoisting device embracing two frames inclined toward each other, a horizontal hoisting beam secured to each at the top thereof and projecting beyond the frames, diagonal braces connecting the tops of the frames and a winch on one of said frames.

8. A hoisting device embracing a structural steel tower, comprising frames, end members supporting the frames and the tower having open sides, braces connecting the frames at the top thereof, a hoisting beam also connecting said frames at the top and projecting beyond one of the same, sheaves on said hoisting beam, one between the frames and another at each extremity of the beam and a winch on one of the frames adapted to receive a line served over the sheaves on the hoisting beam.

9. A knock down hoisting device embracing two longitudinally adjustable frames inclined toward each other, a horizontal hoisting beam adjustably secured to the frames at the top thereof and projecting beyond one of the frames, braces connecting the top of the frames, and a winch on one of said frames.

10. A crane comprising parallel independent trucks, sections rigidly secured to each truck, upper sections adjustably secured to said sections, adjustable braces connecting the upper sections at the upper ends, and a hoisting beam adjustably secured to the upper ends of the upper sections.

11. A crane comprising parallel two sections secured to each truck and provided with apertures, uprights each apertured at the lower and upper ends, bolts extending through the lower apertures in the uprights and in the apertures in the sections to adjustably secure the uprights to said sections, brace bars connecting the uprights, a hoisting beam, bolts extending through the apertures in the upper ends of the uprights and through the beam to rigidly clamp the hoisting beam in place and said hoisting beam being vertically adjustable.

12. An adjustable hoisting device embracing frames inclined toward each other at the top, braces rigidly connecting the frames at the top, a horizontal hoisting beam rigidly engaged between the frames, sheaves on said hoisting beam and a winch secured on one of the frames.

13. An adjustable, knock-down hoisting

device embracing frames inclined toward each other, a horizontal hoisting beam secured to each at the top thereof and projecting beyond the frames, diagonal braces connecting the tops of the frames, a sill supporting each frame and trucks rigidly secured to the sills adapted to permit the device to be moved as upon a floor.

14. A hoisting device embracing longitudinally adjustable frames inclined toward each other, a hoisting beam adjustably secured to the frames, braces connecting the top of the frames, a sill supporting each frame, trucks secured to each sill, and a winch on one of the frames.

15. A hoisting device embracing adjust-

able frames inclined toward each other, adjustable braces connecting the frames at the top thereof, a hoisting beam rigidly engaged between the frames at the top and projecting beyond one of the same, sheaves on said hoisting beam, and a winch on one of the frames adapted to receive a line served over the sheaves.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

CHARLES H. STRESENREUTER.

Witnesses:

WM. P. O'GRADY,

FRANK M. STRESENREUTER.