H. HELFENBEIN.

HOISTING APPARATUS.

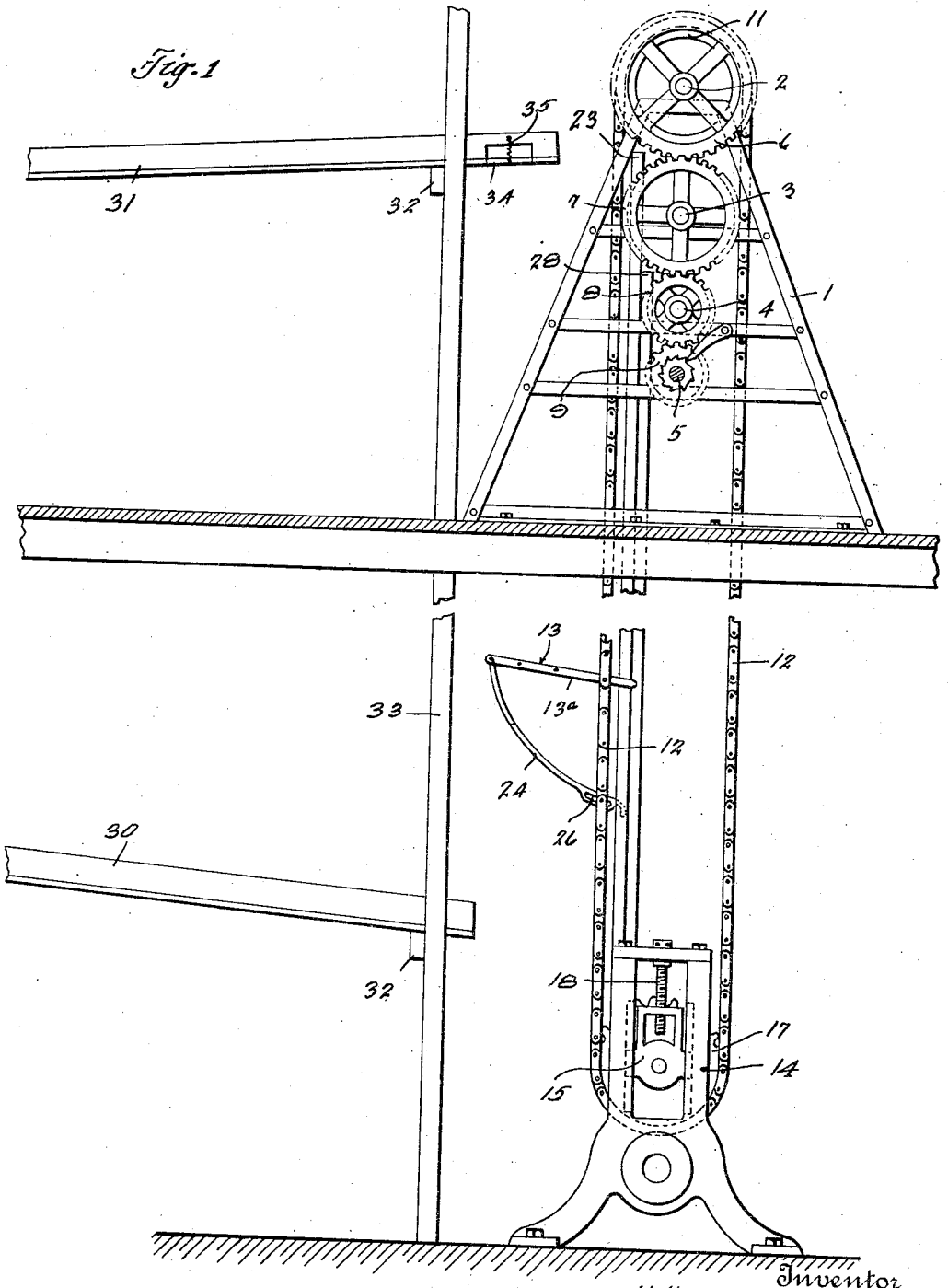
APPLICATION FILED FEB. 6, 1917.

1,239,271.

Patented Sept. 4, 1917.

4 SHEETS—SHEET 1.

Fig. 1



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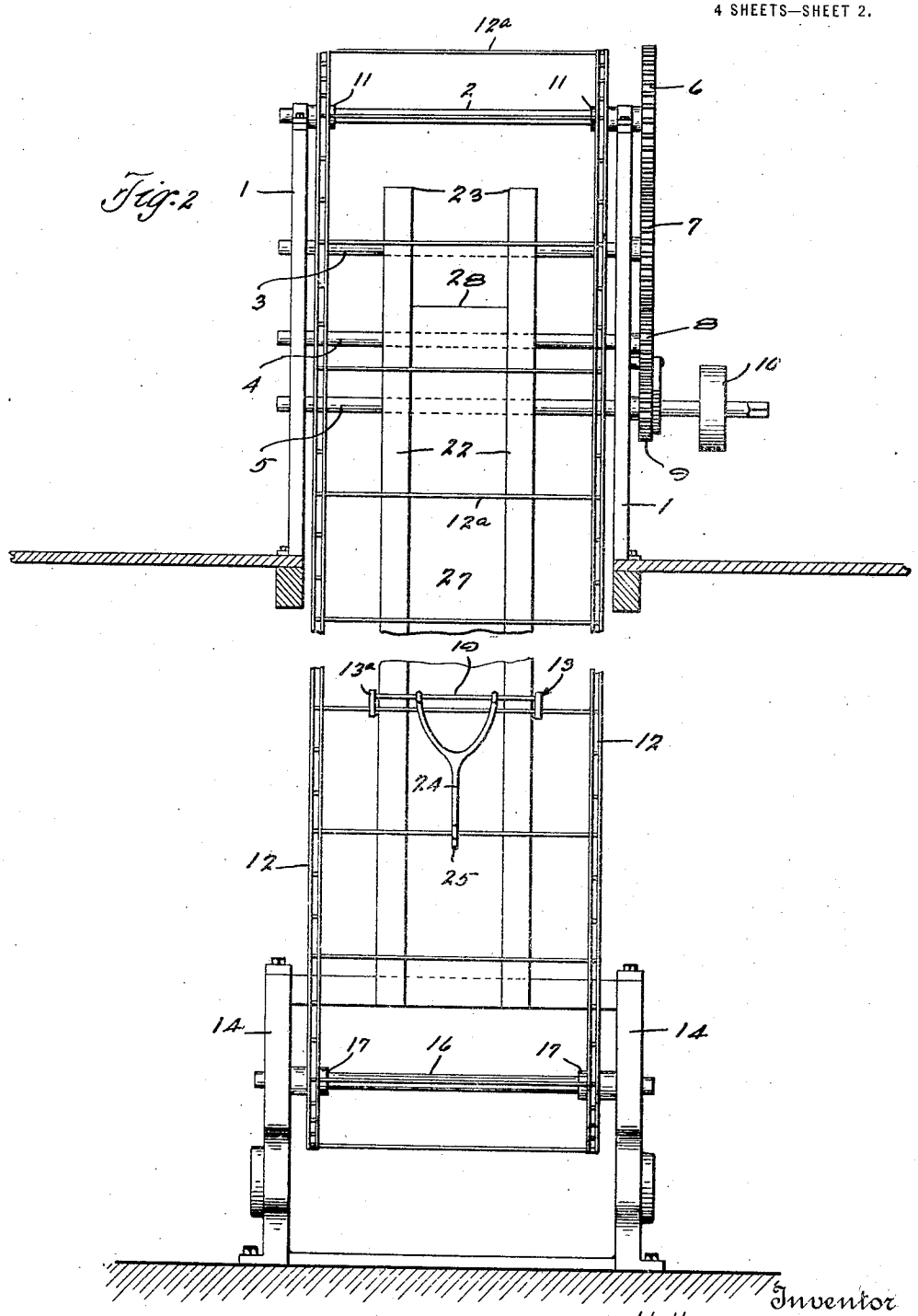
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4 SHEETS—SHEET 2.

Fig. 2



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4 SHEETS—SHEET 3.

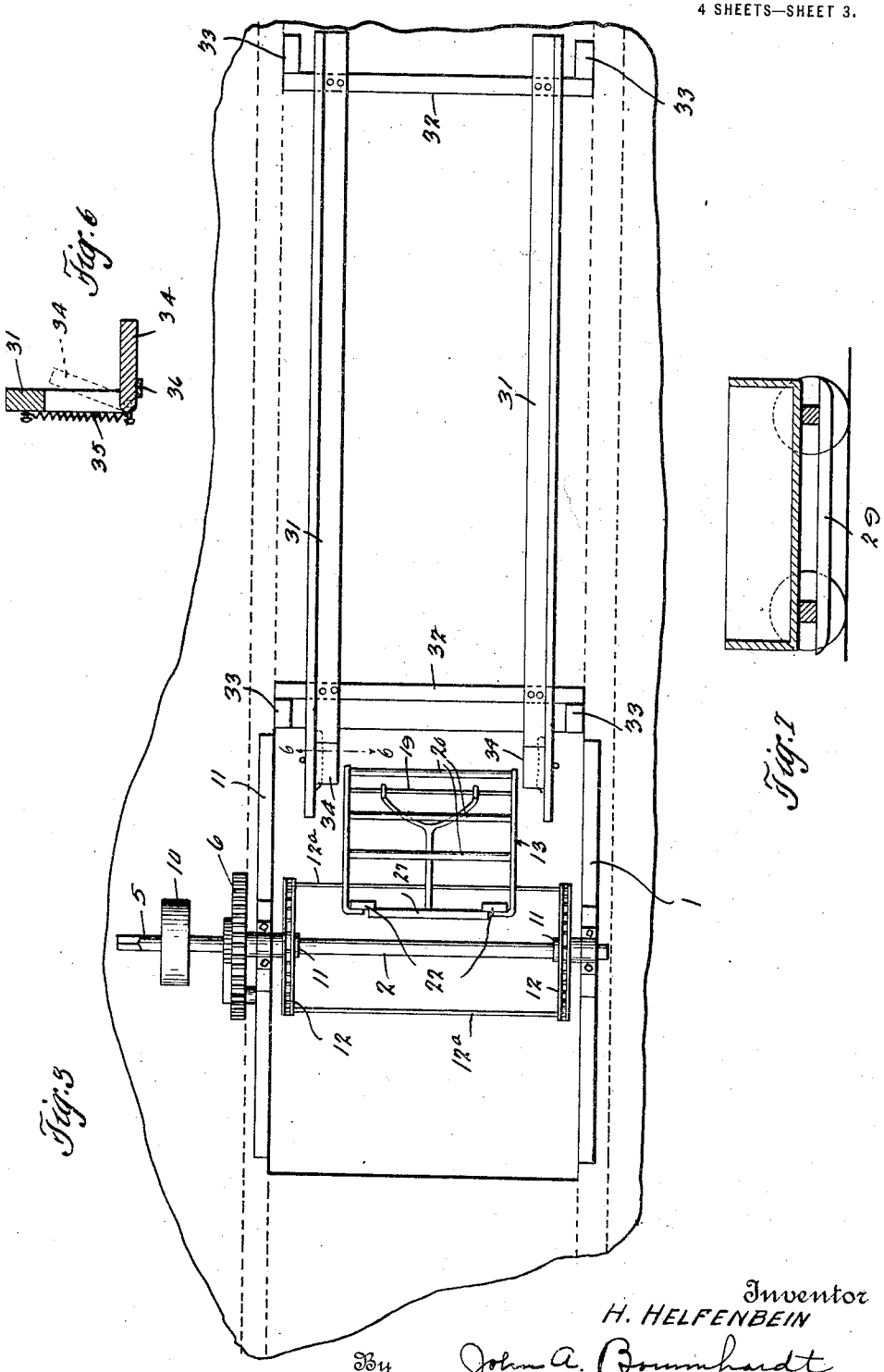


Fig. 5

Fig. 6

Fig. 1

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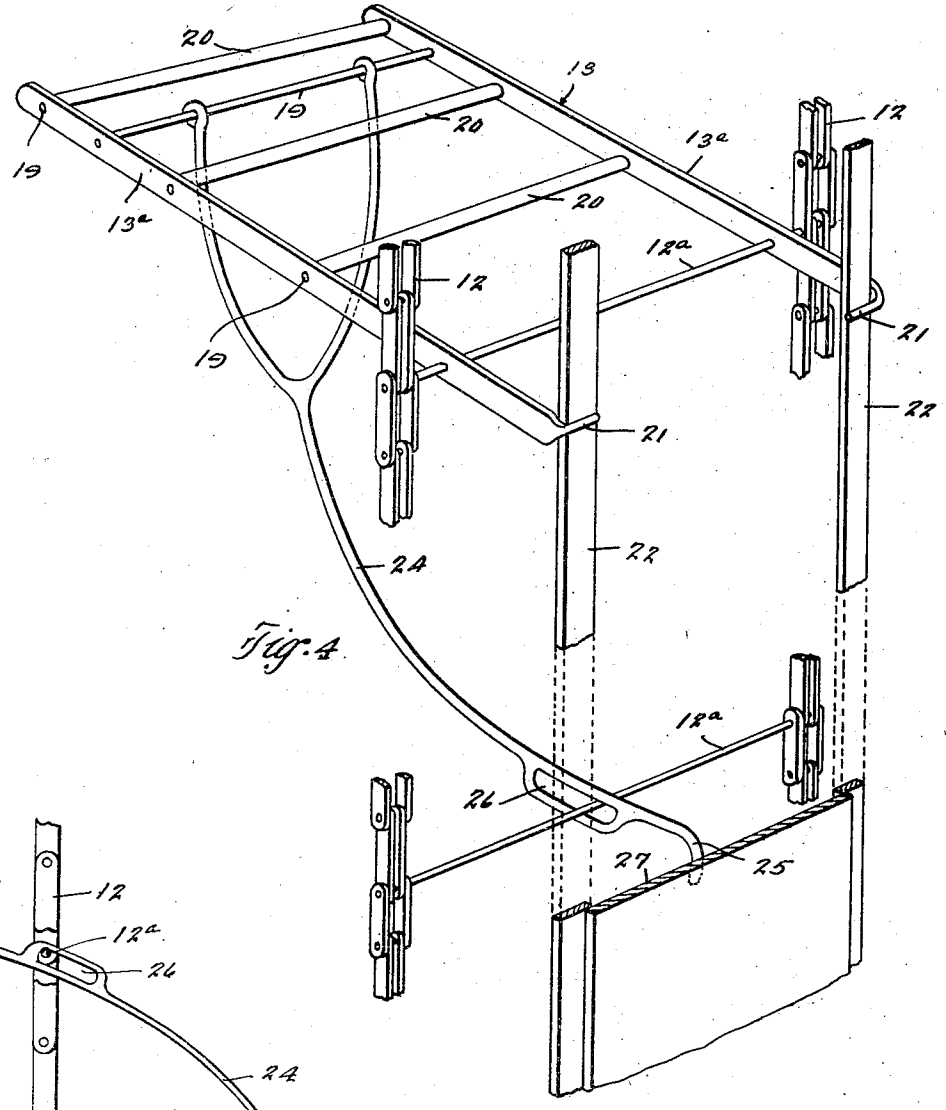


Fig. 4.

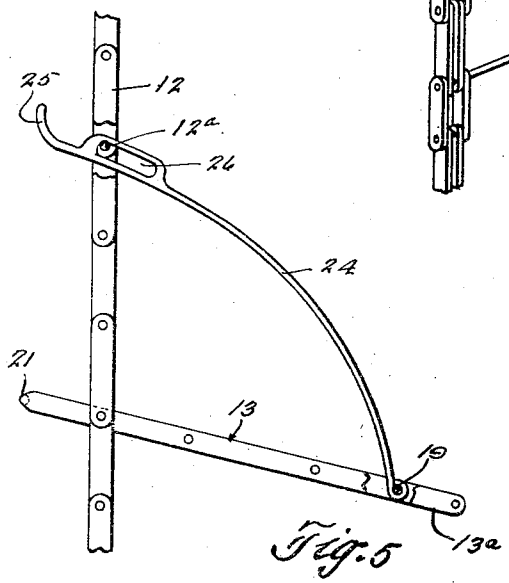


Fig. 5.

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UNITED STATES PATENT OFFICE.

HARRY HELFENBEIN, OF CLEVELAND, OHIO.

HOISTING APPARATUS.

1,239,271. Specification of Letters Patent. Patented Sept. 4, 1917.

Application filed February 6, 1917. Serial No. 146,901.

To all whom it may concern:

Be it known that I, HARRY HELFENBEIN, a subject of Russia, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hoisting Apparatus, of which the following is a specification.

This invention relates to elevators or hoists, and is especially adapted for hoisting building material. It embodies a pair of endless chain belts, with a flight on platform carried thereby, on which a car or the like containing building material can be placed for the purpose of hoisting the same. It embodies improved means for maintaining the flight in supporting position, and for supporting the belts, and for receiving and discharging the car.

In the accompanying drawings—

Figure 1 is a side elevation of the machine.

Fig. 2 is a front elevation.

Fig. 3 is a top plan.

Fig. 4 is a detail in perspective of the flight.

Fig. 5 is a side elevation of the same in reversed position, as when traveling downwardly.

Fig. 6 is a detail of the landing runway, in section on the line 6—6 of Fig. 3.

Fig. 7 is a detail of a car that may be used with the apparatus.

Referring specifically to the drawings, 1 indicates a top frame which may be moved from story to story as the building progresses, and mounted in this frame are shafts, 2, 3, 4 and 5 geared together by gears 6, 7, 8 and 9 at the ends of the shafts respectively. Power is applied to a pulley 10 on the shaft 5 and transmitted through the reducing gears and the shafts to sprocket wheels 11 on the shaft 2.

Chain belts 12 pass over the sprockets 11, and are driven thereby and these chains are held in spaced relation by rods 12^a one or more of which support or carry the flight or flights indicated at 13, and more particularly described hereinafter.

A bottom frame 14 is supported usually on the ground floor and has adjustable bearing blocks 15 for the shaft 16 which carries sprockets 17, for the lower ends of the chain belts. Links are added to the belts as the upper frame is moved from floor to floor, and the tension on the belts is maintained by adjusting the bearing boxes 15 by means of the screws 18.

The carrier or flight 13 consists of two side bars 13^a spaced by cross rods 19 on some of which are mounted rollers 20, and one of the rods 12^a extends through the side bars near the rear ends of the latter. These side bars are provided at their rear ends with hooks 21 engaging behind upright tracks 22 which extend vertically between the belts to a point near the upper sprockets, indicated at 23. The outer end of the carrier is supported by a brace 24 which has a slot 26 through which one of the rods 12^a passes, and the lower end of the brace is bent down as indicated at 25 to slide easily along an upright board or support 27, which projects up into the frame 1, the upper end thereof being indicated at 28. 30 is a loading runway and 31 is an unloading runway, supported by cross bars 32 and standards 33, and the car shown in Fig. 7 has lower bars or runners 29. The runway or tracks 31 have at the inner end thereof pivoted sections 34 which will lift and drop, the drop being stopped by straps 36 thereunder when the sections are swung down by springs 35.

In operation, the flight 13 is brought into line with the loading track or runway 30, and the car rolled from the same onto the carrier, the carrier passing between the tracks 30, and the runners 29 of the car resting on the rollers 20. The carrier is supported in lifting position by the brace 24 the lower end of which presses against the back board 25. Then by operation of the belts the carrier and car are lifted to the upper runway, and as the car comes up it strikes and lifts the pivoted sections 34, thereby permitting the car wheels to pass, after which the sections 34 drop, and immediately thereafter the end 25 of the brace runs off the end 28 of the supporting board, permitting the carrier 13 to tilt downwardly to the extent allowed by the slot 26, and when the carrier is so tilted the car rolls off by gravity onto the runway 31. After the car is discharged continued movement of the belts carries the flight around the upper sprocket wheels and down on the opposite side, when it automatically resumes its original position as shown in Fig. 5, so that after passing the lower sprockets it will pick up another car to repeat the operation. It will be noticed that to a large extent the

weight of the car is supported by the upright parts 22 and 27, which hold the chains in proper position and prevent buckling or swinging thereof.

I claim:

1. In a hoisting apparatus, the combination of a pair of belts, an upright supporting member extending lengthwise beside the belts, and terminating short of the upper end of the belts, and a carrier pivoted to the belts and having a brace pivoted thereto and depending thereunder the lower end of which slides in supporting contact along said member and means carried by the belts to hold the brace in supporting relation to the carrier.

2. In a hoisting apparatus, the combination of a pair of belts, a rigid guiding and supporting structure extending lengthwise between the belts and terminating short of the upper end thereof, and a carrier pivotally connected to the belts and having inwardly extending bars rigid therewith at opposite sides thereof and provided with hooks engaging behind opposite edges of said rigid guide, and also provided with a brace engaging the front side of said structure.

3. In a hoisting apparatus, the combination of a pair of belts, cross rods connecting the belts, a tilting carrier pivoted to one cross rod, and a brace connected to the carrier and having a slot through which another cross rod extends, to limit the tilt of the carrier.

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

HARRY HELFENBEIN.

Witnesses:
JOHN A. BOMMHARDT,
S. W. BRAINARD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."