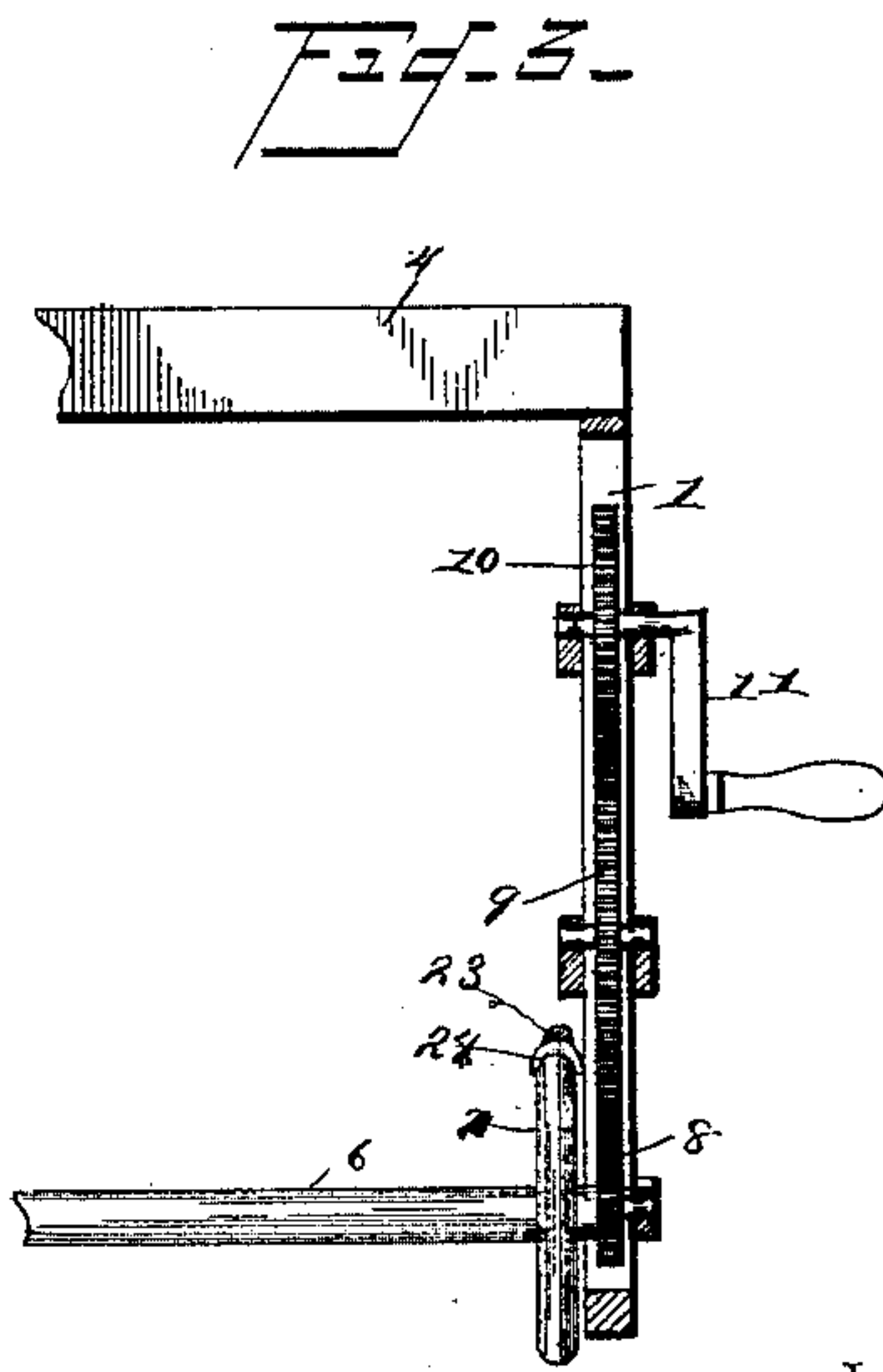
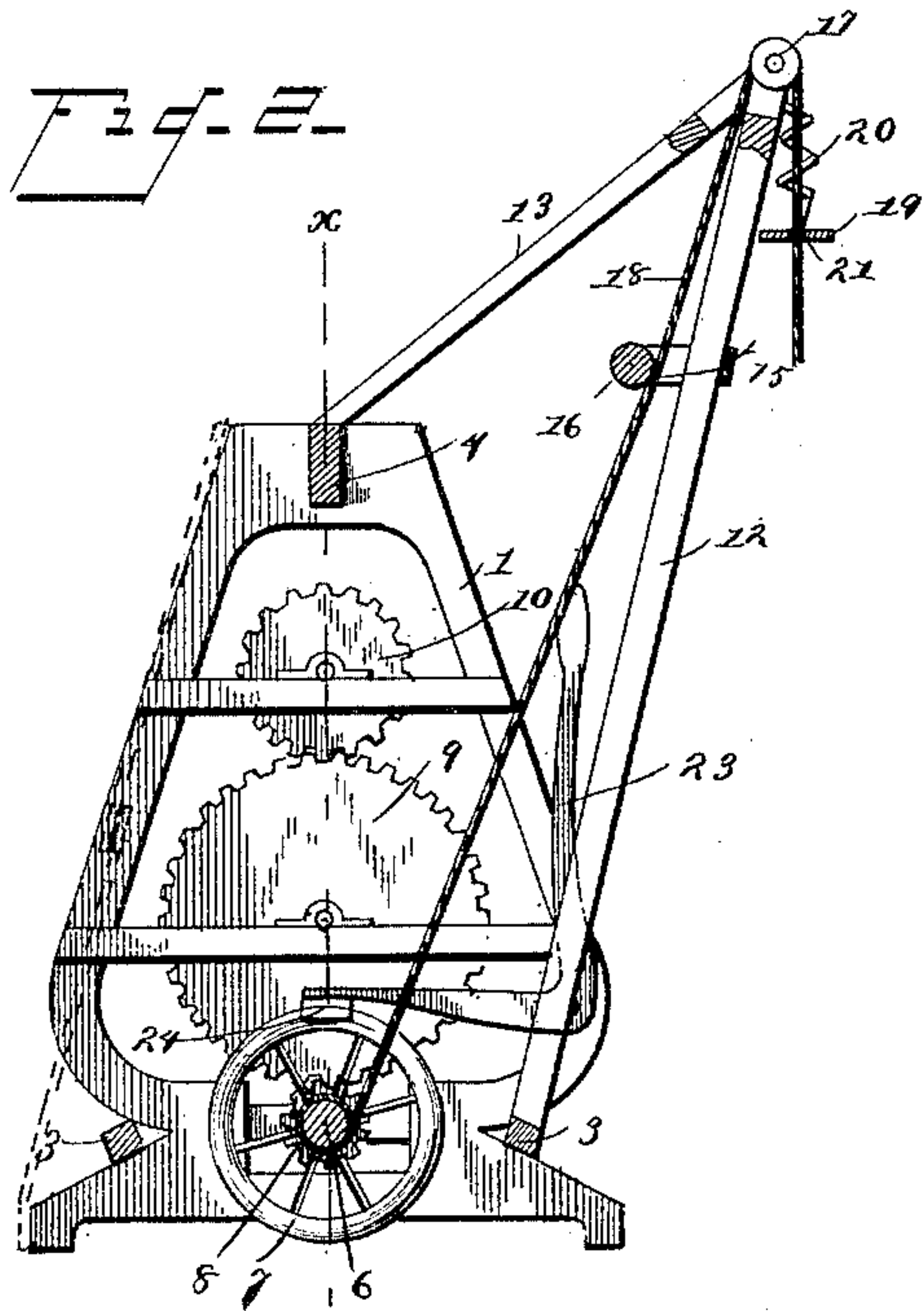
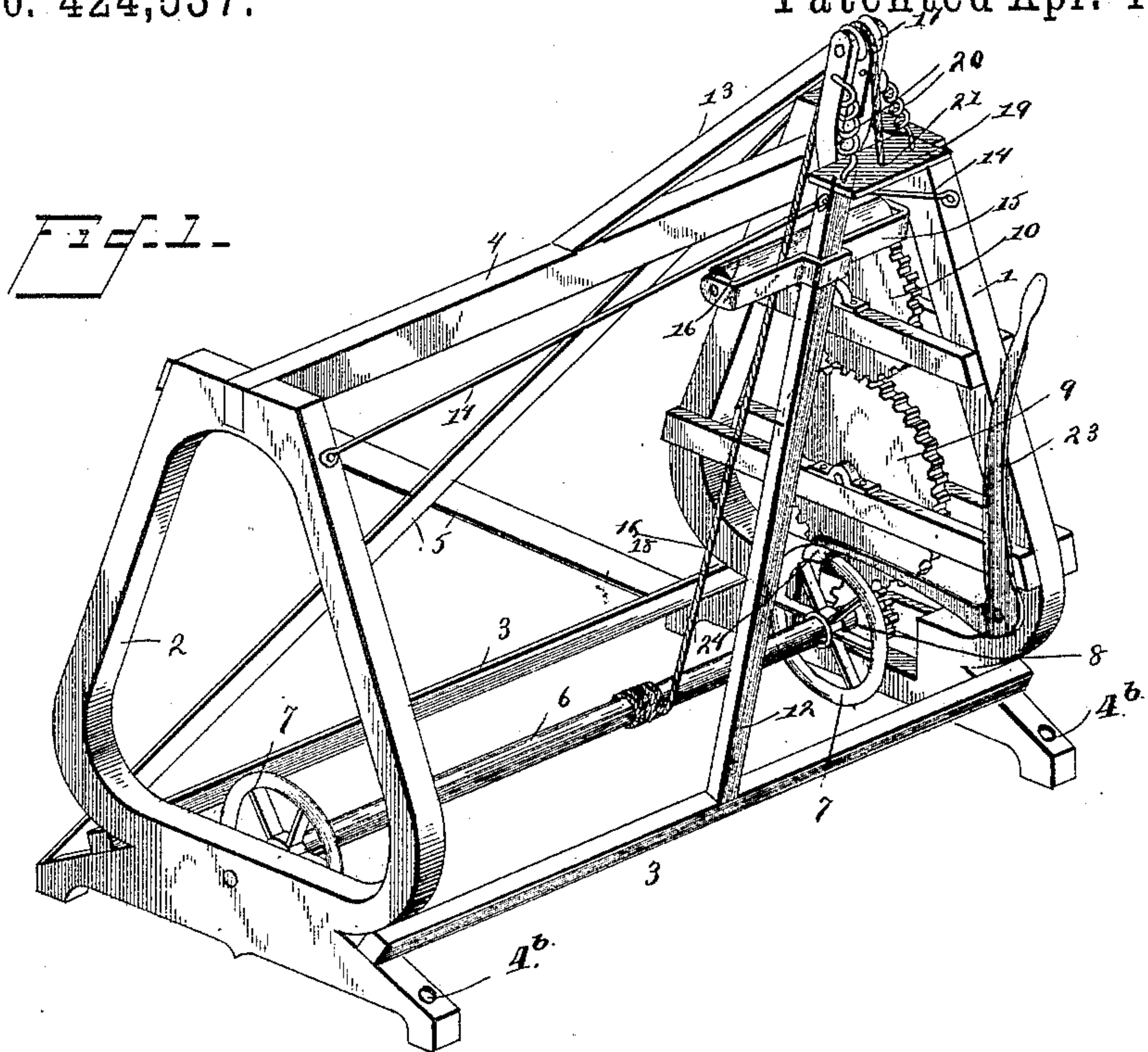


(No Model.)

T. H. BRIDGES.
WINDLASS.

No. 424,537.

Patented Apr. 1, 1890.



Witnesses

Geo. E. Fitch.
Wm. Baggers

By *his* Attorneys,

C. A. Snow & Co.

Inventor

Thomas H. Bridges.

UNITED STATES PATENT OFFICE.

THOMAS H. BRIDGES, OF VALLEY MILLS, TEXAS.

WINDLASS.

SPECIFICATION forming part of Letters Patent No. 424,537, dated April 1, 1890.

Application filed September 27, 1889. Serial No. 325,237. (No model.)

To all whom it may concern:

Be it known that I, THOMAS H. BRIDGES, a citizen of the United States, residing at Valley Mills, in the county of Bosque and State of Texas, have invented a new and useful Windlass, of which the following is a specification.

This invention relates to an improved windlass for hoisting well-buckets and the like; and it has for its object to construct a device of this class which may be operated with the least possible expenditure of power and in a rapid and satisfactory manner.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of a windlass equipped with my improvements. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a partial transverse sectional view taken on the line *xx* in Fig. 2.

Like numerals of reference indicate like parts in all the figures.

The frame of my improved windlass is composed of the sides 1 and 2, connected at their lower ends by braces 3 3 and at their upper ends by a brace 4. The several parts of the frame are securely connected by means of bolts, and the side pieces are provided at their lower ends with brackets having perforations, as shown at 4^b, to receive bolts, by means of which the device may be secured in position for operation. Cross-braces 5 5 connect the upper and lower ends of the frame, as will be seen in Fig. 1 of the drawings.

The sides 1 and 2 of the frame are provided at their lower ends with bearings for the ends of the windlass-shaft 6, which is provided with balance-wheels 7 7, one of which is located adjacent to each of the side pieces 1 2. The end of the windlass-shaft which is journaled in the frame-piece 1 is provided with a small pinion 8, meshing with a gear-wheel 9, which is journaled in the side piece 1, which latter is provided with suitable braces to afford bearings for the spindle or shaft of the said gear-wheel and other gears to be hereinafter described. Suitably mounted in

the upper end of the frame-piece 1 is a spur-wheel 10, the shaft of which is provided at its outer end with an operating-crank 11. The spur-wheel 10 meshes with the gear-wheel 9, through which latter motion is communicated from the said spur-wheel to the windlass-shaft. The spur-wheel 10 is in practice intended to be made about six times larger than the pinion 8 upon the windlass-shaft, and it follows that the latter will make about six revolutions to each one of the operating-crank.

12 designates an upright the lower end of which is mounted in the front brace or cross-bar 3 and the upper end of which is connected with the top brace 4 by means of a brace or bracket 13. Guys or braces 14 also connect the upright 12 with the upper ends of the side pieces of the frame. The upright 12 is provided with laterally-extending arms or brackets 15, having bearings for a horizontal guide-roller 16, and the upper end of the upright 12 has a grooved pulley 17, over which passes the hoisting-rope 18, one end of which is permanently attached to the windlass-shaft.

19 designates a small horizontal platform, which is connected by means of coiled springs 20 to the upper end of the upright 12. The platform 19 is provided with a perforation 21 for the passage of the hoisting-rope, to the end of which the well-bucket is attached in the usual manner. To the inner side of the frame-piece 1 of the machine is pivoted a bell-crank lever 23, the lower arm of which has a shoe 24, adapted to bear against the periphery of one of the balance-wheels 7, and thus constituting a brake which may be readily manipulated by the handle formed by the vertical arm of the bell-crank lever.

In operation motion is imparted to the windlass-shaft by the operating-crank 11 and the intermediate gearing. Owing to the rapidity with which the windlass-shaft is revolved, and to the balance-wheels upon the said shaft, the hoisting-rope will be easily and quickly wound around the shaft, thus raising the well-bucket very easily and quickly. The guide-roller 16 will serve to guide the hoisting-rope upon the windlass-shaft and cause it to be wound evenly upon the latter for its entire length. The brake mechanism may be

used for the purpose of checking the rotation of the windlass-shaft suddenly in case of necessity, and in the event of the well-bucket reaching the surface too suddenly and unexpectedly it will strike against the spring-mounted platform 19, which will prevent injury to any part of the operating mechanism.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of a frame having the cross-bars near its lower and upper ends, the windlass-shaft journaled in the side pieces of the frame and having the balance-wheels and the pinion, the operating-gears mounted in one side of the frame and one of said gears meshing with said pinion, an upright mounted upon the lower front cross-piece of the frame and having a guide-pulley at its upper end, arms extending laterally from said upright, and a guide-roller journaled in said arms, substantially as set forth.

2. The combination of the forwardly-inclined upright 12, bifurcated at its upper end and having the guide-pulley 17, journaled in its forked upper end, the spiral springs 20, depending from the upper end of said upright, the perforated board or platform secured at

the lower ends of said coiled springs, and the hoisting-rope, all arranged and operating substantially as set forth.

3. As an improvement in hoisting apparatus, the combination of the frame, the windlass-shaft journaled in the side pieces of the same and having a balance-wheel near each end and pinion at one end, operating-gears journaled in one of the side pieces of the frame and one of said gears meshing with the said pinion, an upright having a guide-pulley at its upper end and braces connecting its upper end with the frame, brackets extending laterally from said upright, a guide-roller journaled in said brackets, the hoisting-rope, and a spring-mounted platform at the upper end of the upright, having a perforation for the passage of said hoisting-rope, all arranged and operated substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

THOS. H. BRIDGES.

Witnesses:

J. A. THOMAS,

JOS. A. MCMURRY.