

(No Model.)

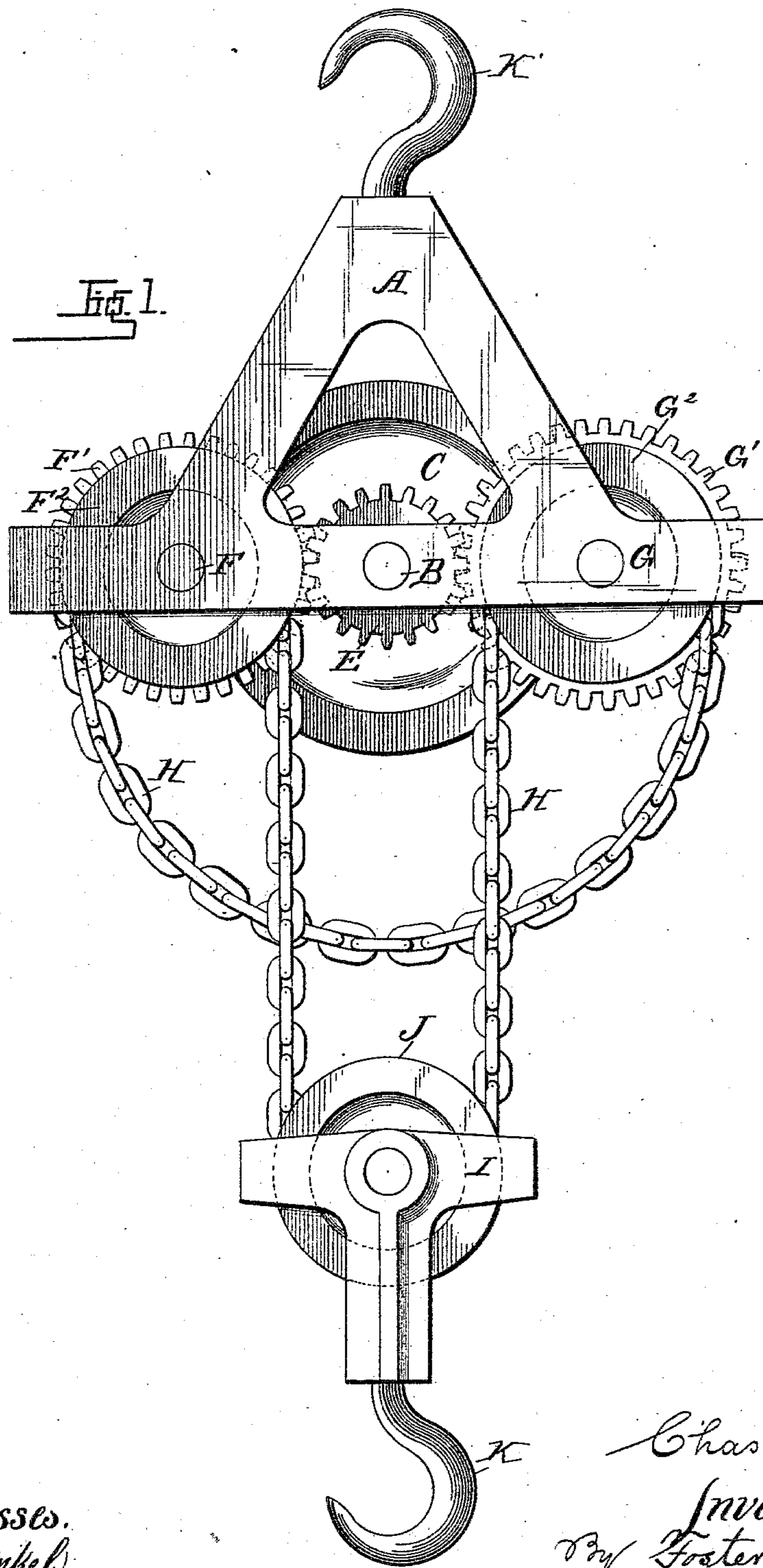
2 Sheets—Sheet 1.

C. A. TEAL.

CHAIN HOIST.

No. 296,364.

Patented Apr. 8, 1884.



Witnesses.
John Hinkel
A. C. Lammann.

Chas. A. Teal,
Inventor:
By Foster & Freeman
Attorneys.

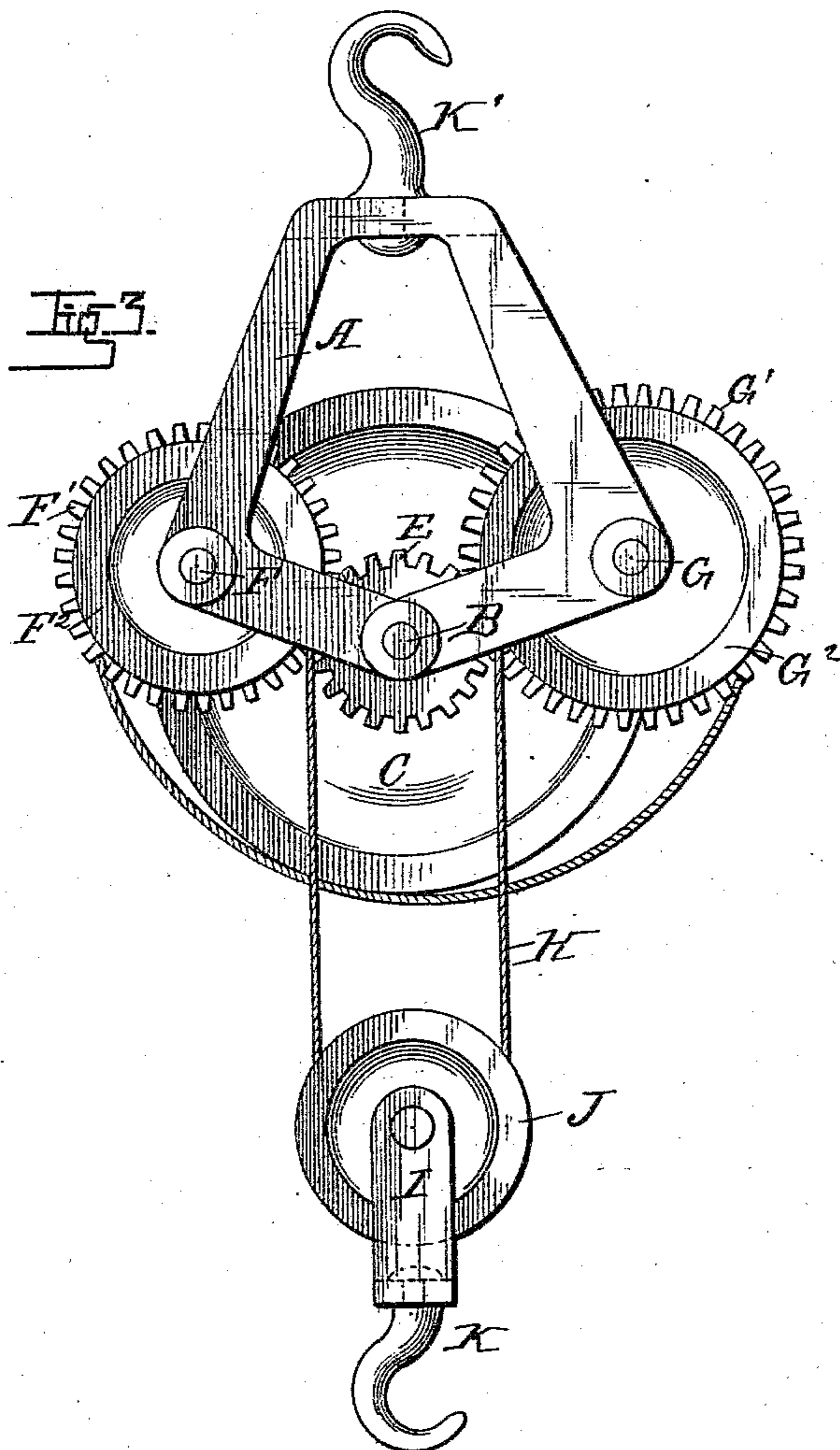
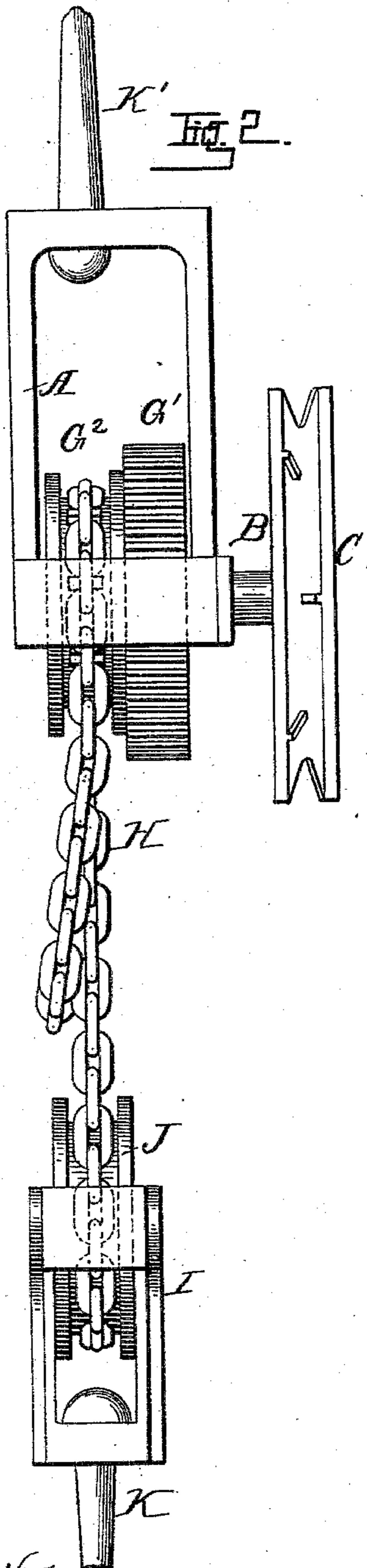
(No Model.)

2 Sheets—Sheet 2.

C. A. TEAL.
CHAIN HOIST.

No. 296,364.

Patented Apr. 8, 1884.



Witnesses:
John Hinkel
A. E. Farnsworth

Chas. A. Teal,
Inventor:
By Foster & Freeman
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES A. TEAL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
MARTHA R. P. TEAL, OF SAME PLACE.

CHAIN-HOIST.

SPECIFICATION forming part of Letters Patent No. 296,364, dated April 8, 1884.

Application filed February 15, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. TEAL, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Chain-Hoists, of which the following is a specification.

My invention relates to chain-hoists such as are generally used in raising or lowering heavy bodies and are operated by hand; and it has for its object to construct a simple, cheap, and durable chain-hoist that can be conveniently used and easily operated, and at the same time will be capable of exerting great power.

In carrying out my invention a suitable strong and substantial frame-work is provided for supporting the shafts, and upon the central or main shaft, and preferably outside of the frame, is provided a comparatively large hand chain-wheel or drive-pulley, which is preferably provided with corrugations, projections, or sprockets on its bearing-surface, to prevent the endless hand-chain from slipping, and upon the same shaft is fixed a pinion-wheel. At each side of the main shaft is another shaft supported in the frame, and upon these shafts are secured gear-wheels engaging with the pinion-wheel, and secured upon the same shafts, and preferably close to the gear-wheels, are the chain-pulleys. To produce the differential action of the chain-pulleys upon the chain, the chain-pulleys may be of the same diameter and the gear-wheels engaging with the pinion on the main shaft of different diameters, and this will cause the part of the chain passing over the pulley attached to the shaft having the smallest gear-wheel to travel faster than the part of the chain passing over the pulley attached to the larger gear-wheel; or the gear-wheels may be of the same diameter and the chain-pulleys of different diameters; or both chain-pulleys and gear-wheels may be of different diameters. The chain-pulleys may be provided with suitable sprockets or similar projections to prevent the chain or cable passing over them from slipping, and the loop of the chain formed by the part of the chain depending from the sides of the wheels next each other supports the sheave of the pulley-block,

to which the weight to be moved is attached. A suitable swivel-hook is provided to attach the hoist to a support.

In order to more particularly describe my invention, reference is made to the accompanying drawings, in which—

Figure 1 is a side view of one form of hoist. Fig. 2 is an end view of the same. Fig. 3 is a side view of another form of hoist.

The frame-work A is made of suitable size and strength to stand the strains to which the hoist will be subjected in the use for which it is intended. Upon a central shaft, B, supported in the frame, is the hand chain-wheel C, and upon the same shaft is fixed a pinion-wheel, E. On opposite sides of the shaft B are located the shafts F and G, each carrying a gear-wheel, F' and G', engaging with the pinion, and upon each of these shafts is secured a chain-pulley, F² and G². The chain H passes over the chain-pulleys, and in the inner loop thereof it supports the sheave I of the pulley-block J, having a hook, K. A swivel-hook, K', is secured to the top of the frame for supporting the hoist.

In Fig. 1 the gears F' and G' are of different sizes and the chain-pulleys F² and G² are of the same size, so that the pulleys will act differentially upon the weight in a well-known manner, and in Fig. 3 both the chain-pulleys and the gear-wheels engaging with the pinion-wheel E are of different sizes.

Suitable projections, corrugations, or sprockets, a, may be provided to keep the chain or cable from slipping.

The operation of the hoist is apparent, and need not be specifically described.

By this construction it will be seen that I produce a very simple, cheap, and durable hoist that is adapted to be made of any size, and one that is not liable to get out of order. By simply varying the size of the gear-wheels or chain-pulleys any desired relative action may be attained, so that the power or force exerted upon the hand-chain may be multiplied as many times as is necessary to raise the weight required.

Having thus described my invention, what I claim is—

1. The combination, substantially as herein described, with a frame-work, of a shaft carrying a hand chain-wheel and a pinion, and two gear-wheels engaging with said pinion 5 and operating the chain-pulleys.

2. The combination, substantially as herein described, with the frame, of a pinion-shaft carrying the hand chain-wheel, a shaft on each side thereof having gears meshing with said 10 pinion, and chain-pulleys upon said shafts, the arrangement being such that one chain-pulley will move faster than the other.

3. A chain-hoist consisting of a frame, A,

shaft B, carrying a pinion and hand chain-wheel, shafts F G, carrying gears F' G' and 15 chain-pulleys F² G², chain H, passing over said pulleys, and a pulley-block, the whole adapted to form a differentially-acting hoisting apparatus, as set forth.

In testimony whereof I have signed my name 20 to this specification in the presence of two subscribing witnesses.

CHARLES A. TEAL.

Witnesses:

B. FRANK TEAL,
VICTOR S. DELACROIX.