

(No Model.)

C. T. THOMPSON.
VICE FOR HOLDING PIPES.

No. 566,246.

Patented Aug. 18, 1896.

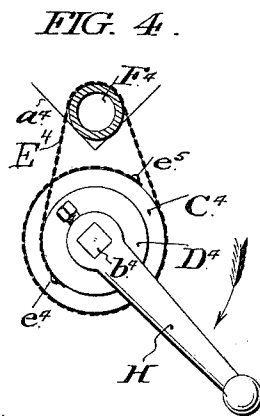
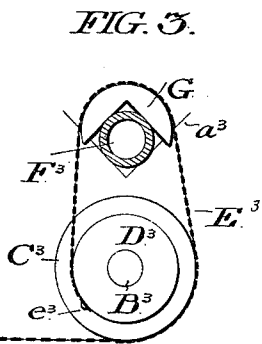
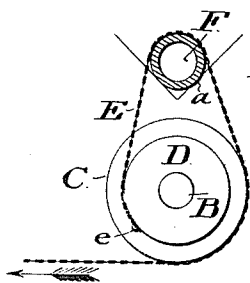
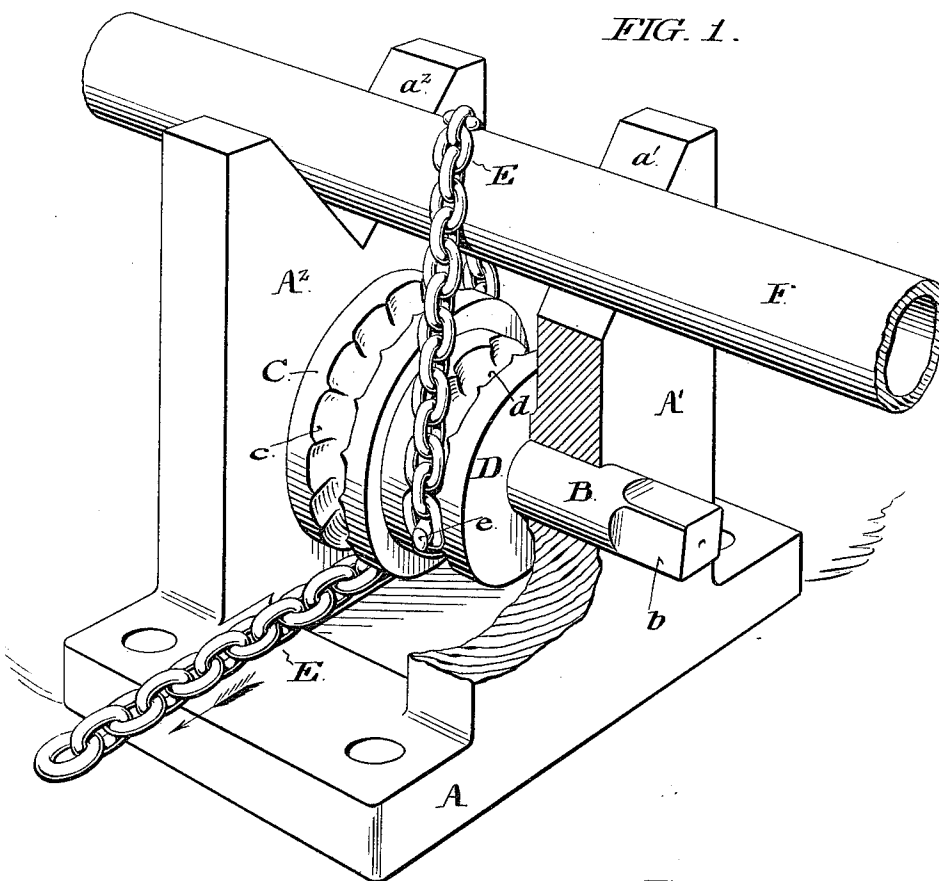


FIG. 4.

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VICE FOR HOLDING PIPES.

SPECIFICATION forming part of Letters Patent No. 566,246, dated August 18, 1896.

Application filed July 3, 1895. Serial No. 554,900. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. THOMPSON, of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Vises for Holding Pipes, &c., whereof the following is a specification, reference being had to the accompanying drawings.

In said drawings, Figure 1 represents the apparatus in perspective, a portion of one of the uprights being broken away to facilitate the inspection of the interior construction. Fig. 2 is a diagrammatic view illustrating the operation of the device shown in Fig. 1. Figs. 3 and 4 are diagrammatic views illustrating the employment, in connection with the apparatus proper, of certain convenient adjunctive devices.

Referring to the type shown in Fig. 1, A represents a base-plate provided with two uprights $A^1 A^2$, arranged, as shown, at a suitable distance apart, each of said uprights having a V-shaped notch in its upper end, as indicated at $a' a^2$, respectively. A transverse shaft B extends through both of said uprights, being provided with suitable bearings therein, the end of said shaft being squared at b to receive a winch, if desired.

Between the uprights $A^1 A^2$ two differential chain-pulleys C D, respectively, are mounted to rotate together, preferably by rigidly attaching both of them to a transverse shaft B, the peripheries or bearing-faces of said pulleys being provided with the usual pockets or recesses $c d$, respectively, to engage with the links of a chain E. Said chain is maintained in operative engagement with both pulleys, one end being preferably secured to the smaller pulley, as at e , from which point the chain leads over a portion of the periphery of the smaller pulley D and passes, with an intermediate bight, to the periphery of the larger pulley C, whence it leads to a point of application of power. In the instance shown in Fig. 1 the power is intended to be applied directly by hand to the free end of the chain E.

The method of operation of the device is as follows: A pipe F or other similar article to be held in the vise is inserted transversely across the uprights and seated in the notches

$a' a^2$, the bight of the chain E embracing said pipe. The free end of the chain is then grasped by the hand and pulled hard until the chain jams upon the surface of the pipe, this result being of course obtained by reason of the fact that the larger pulley C takes up more rapidly than the smaller pulley D pays off.

Any attempt to turn the pipe to the right in Fig. 1 will, by reason of the frictional contact with the chain, tend to rotate the pulleys in that direction and a similar differential action will result, the tendency being to jam the bight hard upon the object held. By turning the pipe in the opposite direction the converse result will of course be effected and the chain will be loosened.

In Fig. 3 I have shown a modification of the device, which consists merely in interposing between the surface of the pipe or other object to be grasped and the chains a shoe or intermediate bearing device, the object of which is to minimize injury to the surface of the pipe. In said figure the parts are represented diagrammatically, similar letters to those previously employed being used to designate them, except that each of said letters is marked with the numeral "3" and the shoe is indicated at G. The operation is obviously similar to that just described.

In Fig. 4 the general arrangement is similar to that of Fig. 1, and the corresponding parts are indicated by similar letters with the numeral "4" added, the feature of difference being that instead of the chain E^4 having a free end it is attached at e^5 to the periphery of the larger pulley C^4 and a winch H is attached to the squared end b^4 of the shaft. Obviously the rotation of said shaft by the winch in the direction of the arrow will tend to wind up the chain on the larger pulley faster than it is paid off by the smaller one and thus cause it to jam upon the surface of the pipe F^4 . These adjunctive devices indicated in Figs. 3 and 4 are of course not vital to the invention, but they or other modifications may be found convenient in practice.

I have described my invention in its most obvious application, to wit, to the holding of a pipe, but it is evident that it is not thus restricted in its scope, nor is it essential that

the particular seat for the pipe or other object should be employed, it being only necessary that there should be some support upon which the jamming of the chain shall hold the object.

I am of course aware that the use of a chain in a pipe-vise is not, broadly speaking, new, and I do not claim the same. Heretofore, however, so far as I am aware, no such vise has possessed the capacity which is peculiar to my invention, to wit, that the grip upon the pipe or other object is intensified by any attempt to turn the object itself in a given direction. The main purpose of such apparatus being to hold a cylindrical object against rotation, this capacity is of the highest importance, since my vise can be applied, of course, with a view to the direction of rotative strain to which the object is to be subjected. Furthermore, the grip can be loos-

ened by a very slight turn of the object in the proper direction.

I claim—

1. The combination of a support, a pair of differential chain-pulleys mounted to rotate together, and a chain engaging said pulleys and adapted to embrace an object seated in said support, substantially as set forth.

2. The combination of a support, a pair of differential chain-pulleys mounted to rotate together, a chain engaging said pulleys and adapted to embrace an object seated in said support, and a shoe arranged within the embracing-bight of said chain, substantially as set forth.

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Witnesses:

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