

(No Model.)

J. McILVRIED.
NAIL MACHINE.

No. 331,988.

Patented Dec. 8, 1885.

Fig. 2.

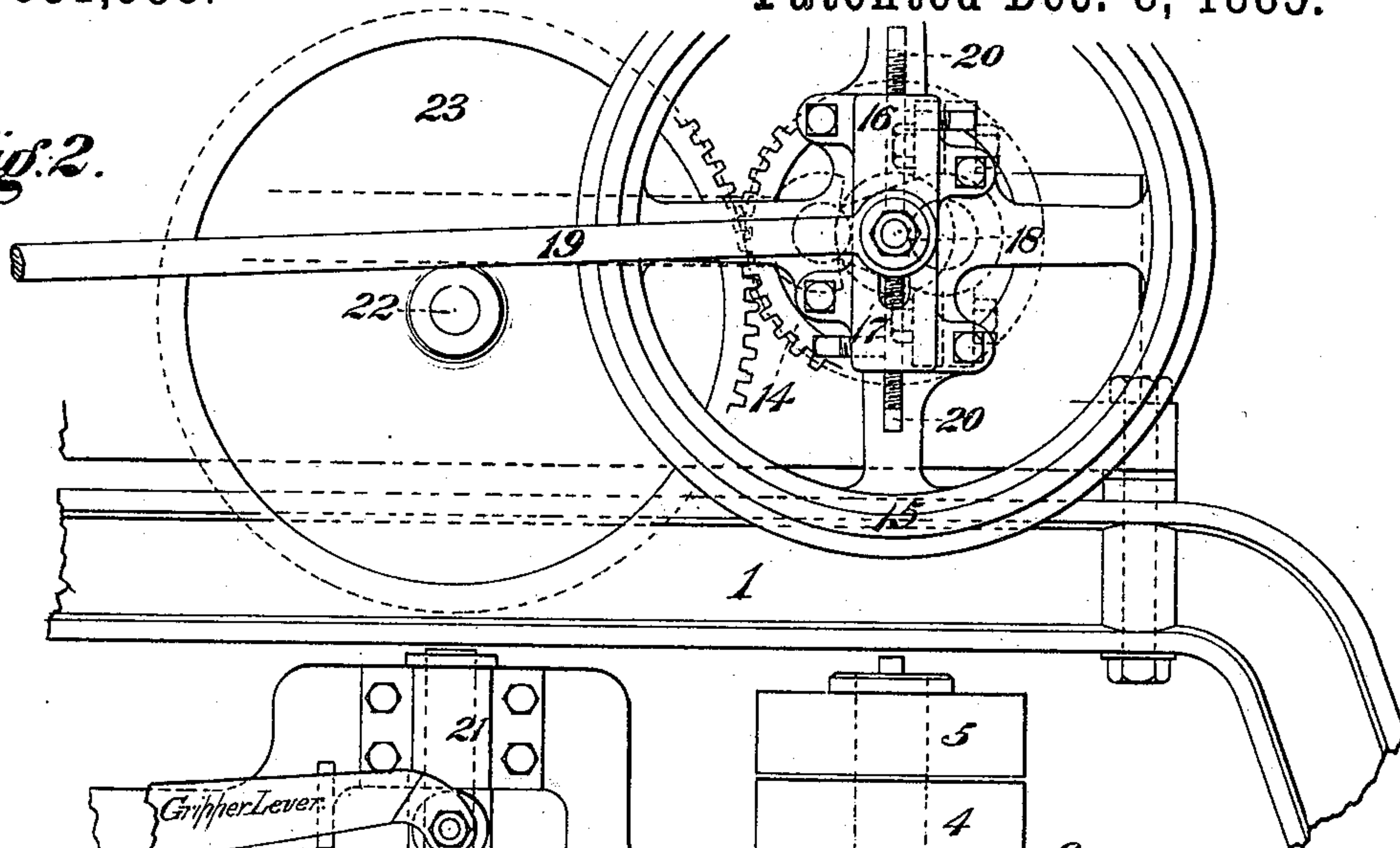


Fig. 1.

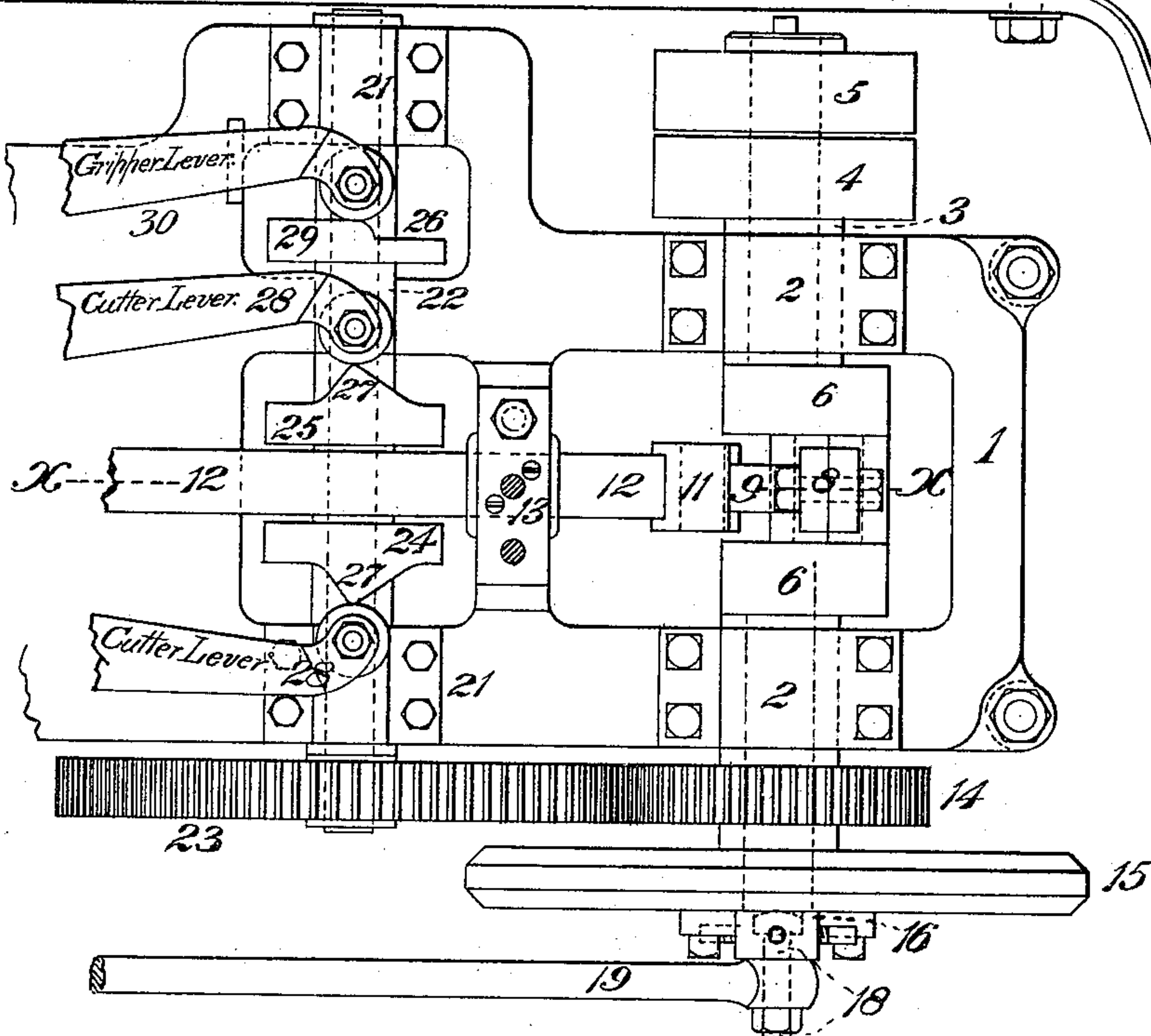
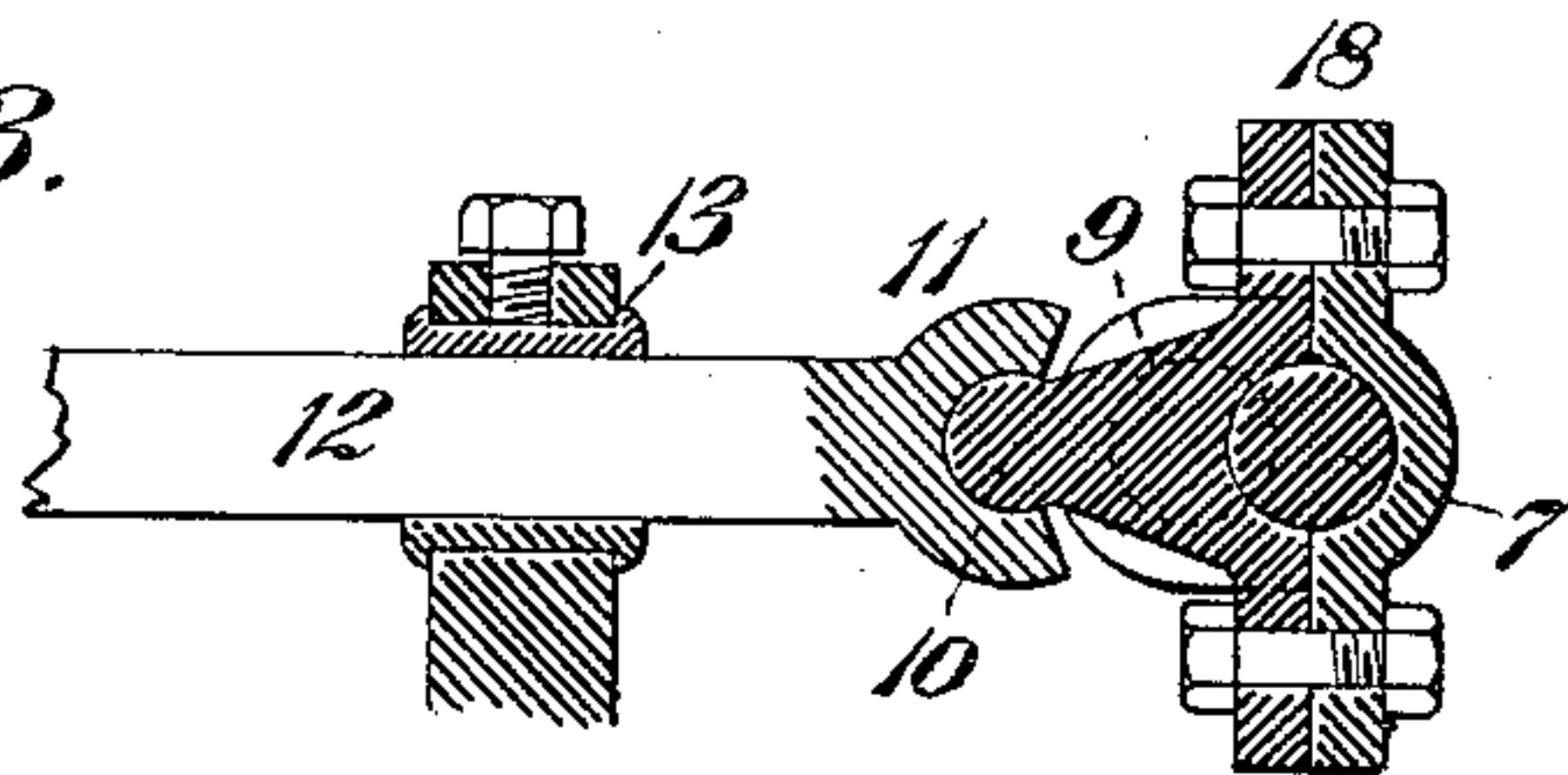


Fig. 3.



WITNESSES:
Darius S. Wolcott
C. M. Clarke

INVENTOR,
John McIlvried.
BY George H. Christy
ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN McILVRIED, OF CLEVELAND, OHIO.

NAIL-MACHINE.

SPECIFICATION forming part of Letters Patent No. 331,988, dated December 8, 1885.

Application filed October 1, 1885. Serial No. 178,719. (No model.)

To all whom it may concern:

Be it known that I, JOHN McILVRIED, residing at Cleveland, in the county of Cuyahoga and State of Ohio, a citizen of the United States, have invented or discovered certain new and useful Improvements in Nail-Machines, of which improvements the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a top plan view of the rear or power end of a nail-machine, showing the power or driving mechanism. Fig. 2 is a view in side elevation of the same. Fig. 3 is a sectional detail showing the mechanism for operating the heading-hammer, the section being taken on the line *x x*, Fig. 1.

The invention herein relates to certain improvements in the power or driving mechanism employed for operating the cutters, grippers, hammer, and feed mechanism which operate directly on the nail-blank, and has for its object such a construction and arrangement of the driving parts as will relieve such parts as operate in a rectilinear direction from the strain and delignment to which they are subjected in the usual arrangement of this class of machines, by such mechanism as produces or effects a lateral movement of some of the operating mechanism; and to this end my invention consists in the construction and combination of parts, substantially as hereinafter described and claimed.

On the rear end of the frame 1 are formed suitable bearings, 2, in which is journaled the power-shaft 3, provided with tight and loose pulleys 4 and 5. The shaft 3 is provided between the bearings with crank-arms 6, connected by a suitable pin, 7, around which are arranged the half collars or rings 8, one of the rings being provided with a projection or lug, 9, having a ball, 10, on its outer end, said ball being constructed to fit within a correspondingly-shaped socket, 11, formed in the rear end of the hammer, bar, or slide 12, which is supported and guided in a suitable bearing, 13, formed on the bed 1. On the end of the shaft 3, opposite the pulleys 4 and 5, are secured the gear-wheel 14 and the balance-wheel 15, said balance-wheel having the block 16 secured on its hub portions, as shown. In the block is formed the longitudinal slot 17, having its side walls undercut for the reception

of the head of the pin 18, on which is journaled one end of the connecting-rod 19, the opposite end of said rod being connected to feed mechanism. The pin 18 is adjusted toward or from the center of the wheel 15, along the slot 17, by the set-screws 20, passing through threaded holes in the ends of the block 16, and bearing at their ends against the head of the pin 18. On the frame 1, in front of the shaft 3, are formed bearings 21, in which is journaled the cam-shaft 22. On one end of this shaft is keyed the gear-wheel 23, arranged to intermesh with the gear-wheel 14 on the shaft 3. These gear-wheels 14 and 23 are so constructed with relation to each other that the gear-wheel 23 makes one revolution to two revolutions of the gear-wheel 14. On the shaft 22 are secured the disks 24, 25, and 26, the disks 24 and 25 being provided with the lateral cam projections 27, two on each disk, arranged one hundred and eighty degrees apart, and adapted to operate the levers 28, said levers being connected at their opposite ends to the nail-blank cutters. The disk 26 is also provided with two lateral cam projections, 29, (only one being shown,) which act against the lever 30, the front end of said lever being connected to one of the blank-gripping dies.

For a detailed description and illustration of those parts of the double nail-machine directly operative on the nail-blank reference should be had to an application, No. 176,648, filed by me September 10, 1885.

It will be observed that in that machine all the parts which move in planes parallel with the length of the bed are operated from one shaft, and that such parts as are moved transversely of the bed are actuated by suitable devices on the other shaft. By this arrangement of the parts all liability of destroying the alignment of the hammer-head by the lateral thrust of the cams operating the levers connected to the cutters and grippers is avoided. It will also be observed that by driving the hammer-head from a shaft independent of the cam-shaft a positive movement can be given to the hammer-head in lieu of spring hammer blow necessary in double nail-machines having the hammer-operating mechanism secured to the cam-shaft. It will be further noticed that the main or power shaft 3, from which the hammer and feed are operated, is driven at double

the speed of the cam-shaft, and that corresponding movements of the cutters and grippers are produced by double cams on the shaft 23. If desired, the pulleys 4 and 5 may be attached to the shaft 23.

I claim herein as my invention—

1. In a nail-machine, the combination of the shaft 3, provided with suitable hammer and feed operating devices, with the counter-shaft 23, provided with suitable means for operating the cutters and grippers, said shafts being so geared together that the shaft 3 shall rotate at double the speed of the other shaft, substantially as set forth.

2. In a nail-machine, the combination of the shaft 3, provided with suitable hammer and feed operating devices, with the shaft 23, provided with double cams, as described, for operating the cutters and grippers, said shafts being so geared together that the shaft 3 shall rotate at double the speed of the shaft 23, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOHN McILVRIED.

Witnesses:

WALTER A. BIDDLE,
JOHN M. E. BAACKER.