

W. M. BRADSHAW.
MOUNTING FOR SPEED CHANGING GEARING.
APPLICATION FILED SEPT. 20, 1906.

930,036.

Patented Aug. 3, 1909.

Fig. 1.

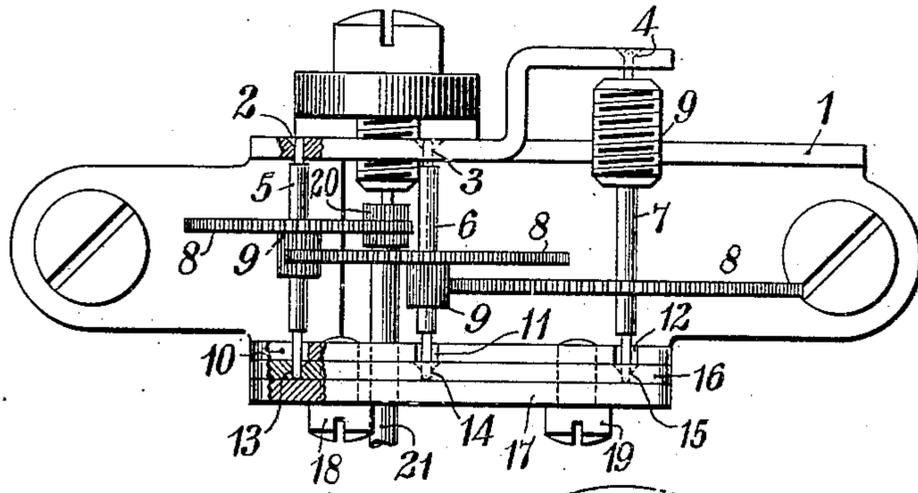


Fig. 2.

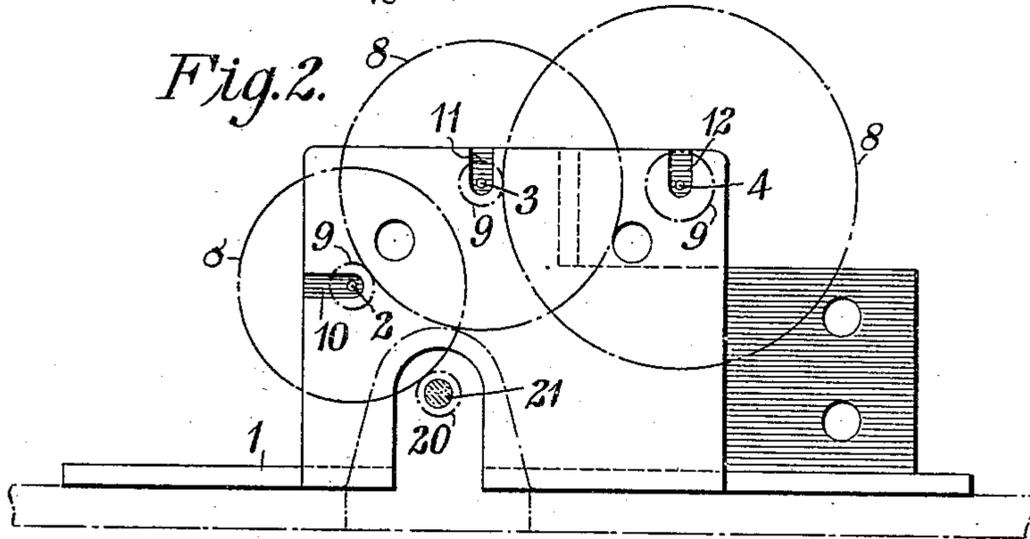


Fig. 3.

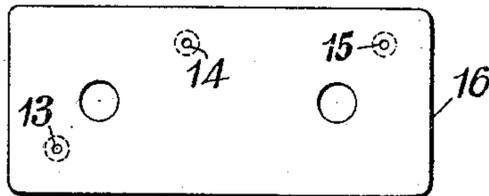
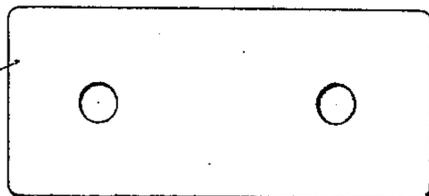


Fig. 4.



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WILLIAM M. BRADSHAW, OF WILKINSBURG, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

MOUNTING FOR SPEED-CHANGING GEARING.

No. 930,036.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed September 20, 1906. Serial No. 335,512.

To all whom it may concern:

Be it known that I, WILLIAM M. BRADSHAW, a citizen of the United States, and a resident of Wilkesburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Mountings for Speed-Changing Gearing, of which the following is a specification.

My invention relates to speed changing gearing, and particularly to mountings or supporting frames therefor.

The object of my invention is to provide a frame in which the shafts of trains of gears may be mounted and have bearings, that shall be simpler and cheaper in construction than others heretofore provided, and that shall permit of ready assembling of the parts.

The shafts of trains of small speed changing gearing, such, for instance, as are employed in clocks and measuring instruments, are usually provided with bearings in frames having side plates that are removable to permit of insertion of the shafts into the bearing apertures.

According to my present invention, I provide a single-piece frame of such structure that the gearing may be readily and conveniently mounted therein and the expense of manufacture and assembling of the parts may be greatly reduced over that of other structures.

Figure 1 of the accompanying drawing is a view, in front elevation, of a train of gearing that embodies my invention. Fig. 2 is a bottom plan view of the gearing shown in Fig. 1, and Figs. 3 and 4 are plan views of certain of the parts that are employed in the structures shown in Figs. 1 and 2.

The upper side of a substantially U-shaped frame or bracket 1 is provided with apertures 2, 3 and 4 in which the upper, reduced ends of a set of vertically arranged shafts 5, 6 and 7 have bearings, upon each of which shafts is mounted a gear 8 and a pinion 9 that are intermeshed in any suitable manner to form a train for speed changing purposes. The lower side of the frame 1 is provided with slots 10, 11 and 12 that extend outwardly to the edges of the frame and are located vertically beneath the apertures 2, 3 and 4, respectively. The lower ends of the shafts 5, 6 and 7 project through the slots 10, 11 and 12 in the lower side of the frame and into apertures that are provided at 13, 14 and 15 in a plate 16 that is secured to the outer face

of the lower side of the frame 1. The shafts are supported at their lower ends upon a polished hardened steel bearing plate 17 that is also secured to the lower side of the frame 1, two screws 18 and 19 serving to secure both the plates 16 and 17 to the frame.

Motion may be imparted to the train by means of a pinion 20 that is operated by a shaft 21 belonging to a measuring instrument (not shown) or any other suitable device, and the motion of the gearing may be transmitted to other parts as, for instance, to the counting train of the measuring instrument, by means of the pinion 9 upon shaft 7 which, in the present instance, is illustrated as a worm.

In assembling the parts, the lower ends of the shafts 5, 6 and 7 are first moved sidewise into the slots 10, 11 and 12 in the lower side of the frame, and then the shafts are moved longitudinally until the upper ends of the shafts become inserted into the apertures 2, 3 and 4 of the frame, whereupon the plates 16 and 17 are applied to the lower ends of the shafts and are secured to the lower side of the frame.

I claim as my invention:

1. The combination with a sheet metal frame having parallel integral members respectively provided with an aperture and a slot in alinement with each other, of a shaft of greater length than the distance between said parallel members and having a bearing at one end in said aperture, a plate fitted against the outer face of said slotted member and provided with an aperture into which the other end of the shaft projects, a bearing plate fitted against the outer face of said apertured plate, and means for detachably securing said plates in position.

2. The combination with a frame having integral side portions respectively provided with an aperture and a slot in alinement with each other, of a shaft of greater length than the distance between the side portions the respective ends of which project into said aperture and said slot, a plate fitted against the outer face of said slotted side portion and provided with an aperture to receive one end of the shaft, a bearing plate for said shaft end fitted against the outer face of said apertured plate, and means for detachably securing said plates to the slotted side portion.

3. The combination with a frame having two integral parallel portions one of which is provided with a set of apertures and the

other with a set of slots, each aperture being
in alinement with a corresponding slot, of a
set of shafts or spindles having corresponding
ends seated in said apertures and opposite
5 corresponding ends seated in said slots, a
plate fitted against the outer face of the
slotted frame portion and provided with
apertures to receive the ends of the shafts or
spindles which project through the slots, a
10 bearing plate against which said projecting

ends rest, and means for detachably securing
said plates to the slotted frame portion.

In testimony whereof, I have hereunto
subscribed my name this 13th day of Sep-
tember, 1906.

WILLIAM M. BRADSHAW.

Witnesses:

OTTO S. SCHAIRER,
BIRNEY HINES.