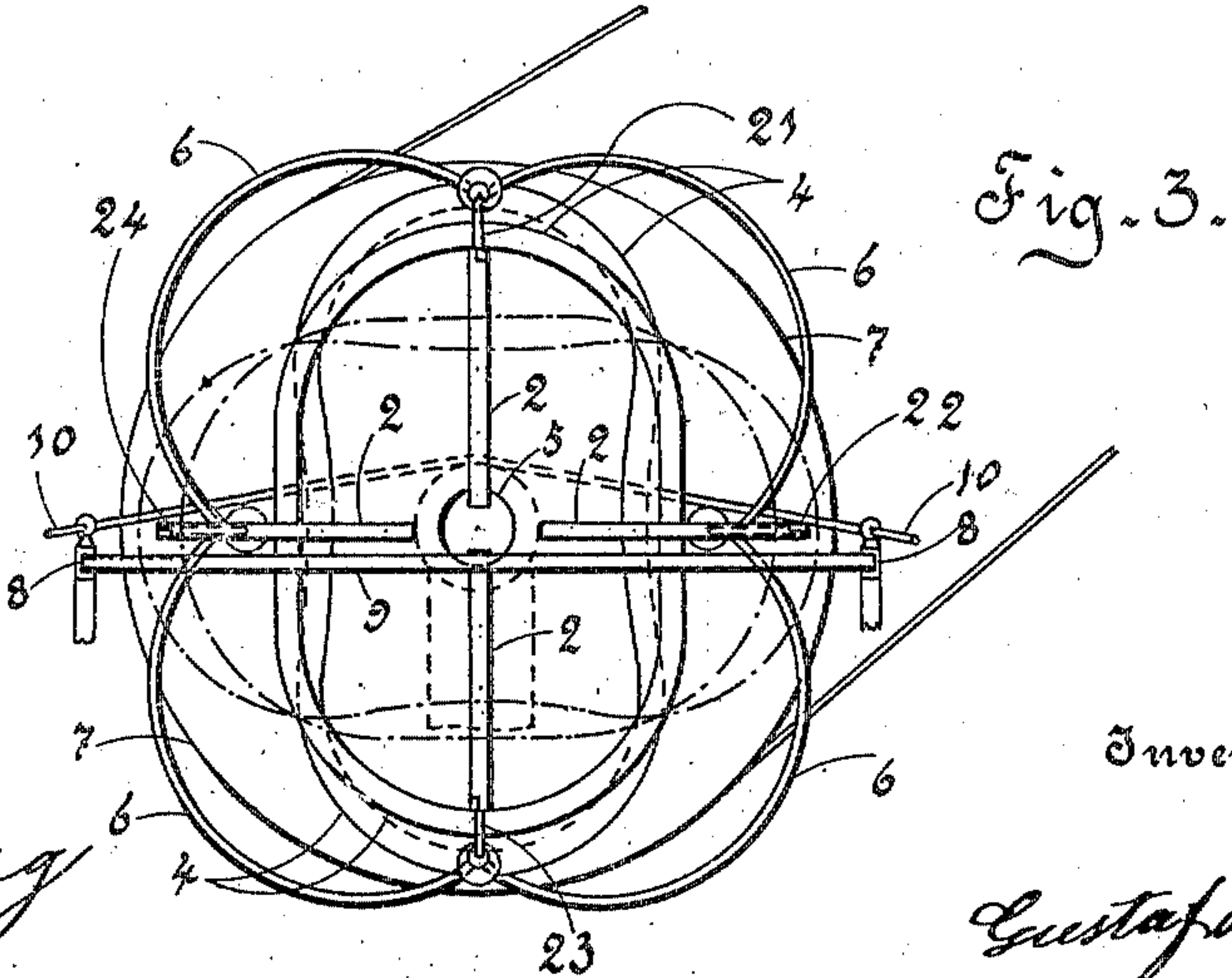
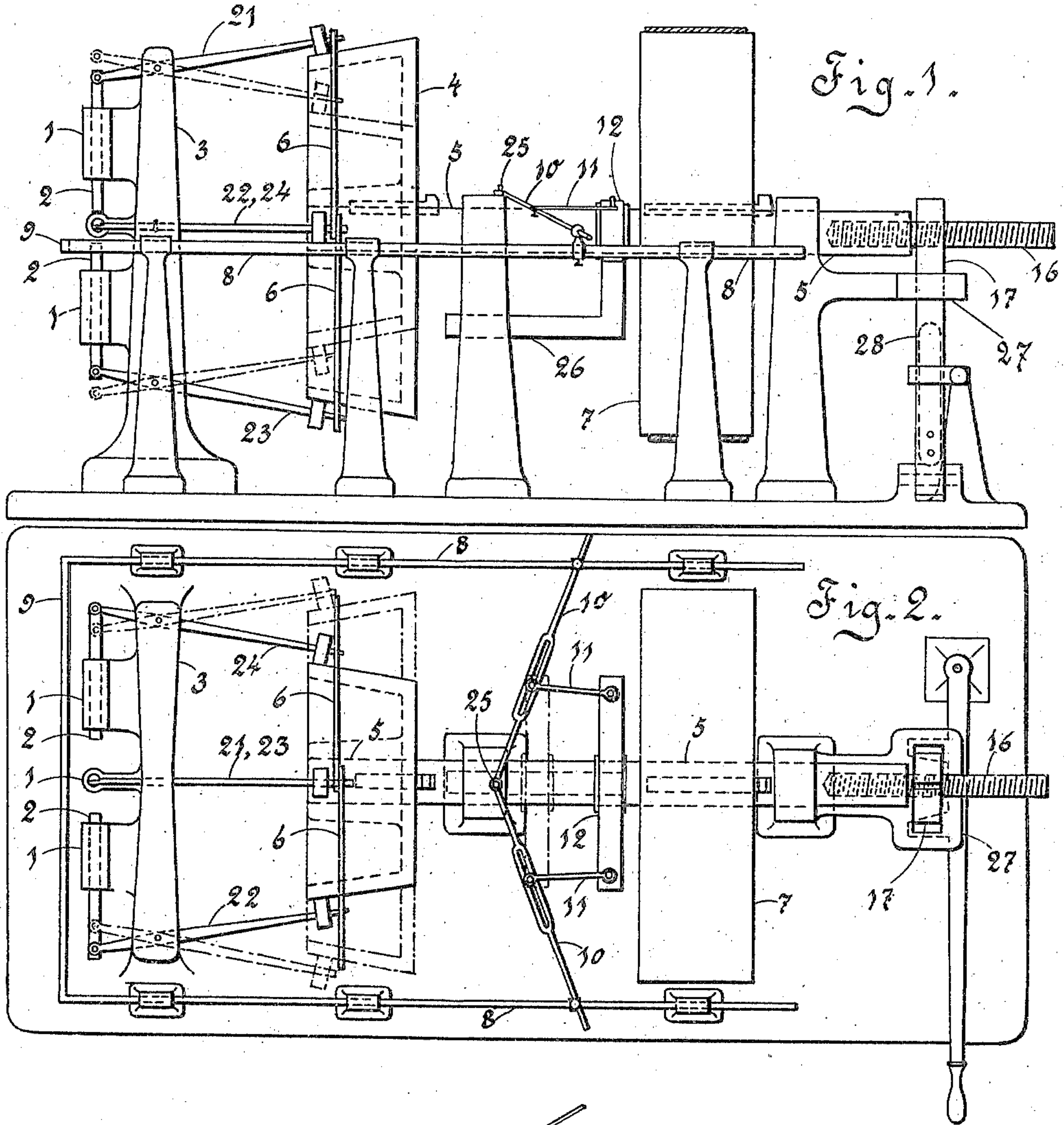


FORGING MACHINE.

APPLICATION FILED JAN. 15, 1908.

947,960.

Patented Feb. 1, 1910.



Witnesses:

Carl O. Lahlberg  
Gertrud Krause.

Inventor :

Gustaf Berglund



# UNITED STATES PATENT OFFICE.

GUSTAF BERGLUND, OF WEDEVÅG, SWEDEN, ASSIGNOR TO DAVID CABLE KEILLER, OF WEDEVÅG, SWEDEN.

FORGING-MACHINE.

947,960.

Specification of Letters Patent.

Patented Feb. 1, 1910.

Application filed January 15, 1908. Serial No. 410,961.

*To all whom it may concern:*

Be it known that I, GUSTAF BERGLUND, a subject of the King of Sweden, residing at Wedevåg, in the Kingdom of Sweden, have invented a new and useful Forging-Machine, of which the following is a specification.

This invention relates to a forging machine having a rotatable cam disk of a very peculiar form so that the ends of the handles of the hammers on which the cams work can be held together by bars around the cam disk, which disk relatively to its shaft is movable in the longitudinal direction of the shaft. This machine has also a pole for supporting and feeding the blank, which pole is connected to the shaft of the cam disk in such a way that both are shifted simultaneously in the longitudinal direction of the shaft.

The forging machine is shown on attached drawing, where Figure 1 shows the same in side view, Fig. 2 in plan view and Fig. 3 in end view, the frame being removed. Figs. 1 and 2 show also by dotted lines the handles of the hammers and the cam disk in the position which the same gets if the cam disk is turned 90 degrees, which is also shown in Fig. 3 by dotted lines.

The rotating cam disk 4 is secured on a shaft 5, carried by two bearings, in which the shaft can not only rotate but also be moved in its longitudinal direction. The shaft 5 is rotated by the pulley and a belt.

Four hammers 2 run in guiders 1 to and fro the forging and these hammers are each rotatorily connected to one end of a handle 21, 22, 23 and 24, journaled in the fixed frame 3. The other ends of the handles rest against the cam disk 4 either directly or by means of rollers. By the rotation of cam disk 4 the handles 21, 22, 23 and 24 are effected so that the hammers 2 will be put in motion and work upon a blank brought in between them which blank thereby is pressed from four sides, not more however than from two sides at each pressing.

The rotating cam disk 4 is conical and movable in the longitudinal direction of the shaft in order to get different movements of the handles 21, 22, 23 and 24 and consequently also of the hammers 2 and to press the blank more or less hardly along its length, depending upon how the cam disk is shifted in one or the other direction.

The end of the handle 21 on which the cam disk 4 works is connected to corresponding ends of the nearest located, handles 22 and 24 by means of bars which are bent in that way that they do not touch the cam disk when this rotates. The handle 23 is in the same way connected to the nearest located handles 22 and 24 by means of bars 6 and so on around the cam disk, wherefore the cam disk 4 ought to have such an oval form that the effected ends of the handles located nearest to each other will always be at the same distance from each other and so that when two opposite hammers 2 are moved against the forging the two others are moved from it. The surface of the cam disk may thus not have any square offsets on the cams, which are two in number but the surface ought to be even.

A pole 9 is located in front of the hammers and carries the blank. Guiding bars 8 are connected to this pole and to these guiding bars are rotatorily connected two arms 10 turnable about a fixed point 25 (for instance on one of the bearing supports as shown on the drawing), which arms are in their turn connected to the cross piece 12 by means of links 11. This cross piece is journaled between two flanges on the shaft 5 and can thus be moved to and fro by the shaft 5 in the longitudinal direction of this latter. If the shaft 5 is thus moved forward in its longitudinal direction, the rotating cam disk 4 as well as the pole will be fed forward in the same direction. The points where the links 11 are fastened on the arms 10 are movable, so that it is possible to regulate the speed of the feeding of the pole relatively to that of the cam disk. The cross piece 12 is prevented from rotating with the shaft 5 by the arm 26, projecting from the cross piece and running in a hole in the bearing support.

The feeding of the pole 9 and the rotating cam disk is done in the following manner. On the outer end of the shaft 5 there is secured a screw 16 and on this latter is threaded a nut 17 cut up and prevented from being displaced in the longitudinal direction of the screw by the fork 27 which nut when not pressed together, does not cause any feeding of the shaft but does so, when the same is pressed together and catches in the threads of the screw. Screws of different pitch are brought in for differ-



ent feeding of the shaft, which is turned around with the pulley. The both halves of the nut are in the known way movably arranged in the frame, are kept separated  
5 by a spring 28 and can be brought together around the screw 16 by means of a lever, provided with two pieces cut obliquely and clasping the halves of the nut. The levers  
10 of a cam disk rest against the inside of a hollow conical cam disk.

Such a forging machine is intended for fabrication in masses of such articles as bayonets, forks, handles and the like of un-  
15 like thickness in the longitudinal direction.

I claim.

In a forging machine, the combination with a supporting frame of four hammers,

arranged in pairs and adapted to move radially, a handle pivotally secured to each  
20 hammer and to the frame, a rotatable cam disk in contact with the outer end of each handle, spring bars connecting the outer ends of the handles, a shaft upon which the  
25 cam disk is fixedly mounted journaled in the frame and longitudinally movable therein, and means for rotating the shaft and means for moving said shaft longitudinally.

In testimony that I claim the foregoing as my invention, I have signed my name in  
30 presence of two subscribing witnesses.

GUSTAF BERGLUND.

Witnesses:

CARL O. SAHLBERG,  
HJALMAR ZETTERSTROM.