My invention relates to the class of devices employed for agitating the liquid in which metal is treated in hardening operations, and an object of my invention, among others, is to provide an apparatus by means of which the liquid used in hardening operations shall be maintained in a prime condition without requiring manual operation to stir or agitate it.

One form of apparatus embodying my invention and in the construction and use of which the objects herein set out, as well as others, may be attained is illustrated in the accompanying drawing, in which—

Figure 1 is a view in section through the tank of a hardening bath with my improved agitator attached thereto.

Figure 2 is a view in section on a plane denoted by the dotted line 2—2 of Figure 1.

Figure 3 is a view in section on a plane denoted by the dotted line 3—3 of Figure 1.

In order to maintain the ingredients of a hardening bath properly mixed it has heretofore been customary to use a common practice of manually agitate the liquid at frequent intervals and this results not only in the labor involved, but also uncertain results from the treatment of metal in a bath in which the ingredients are not properly mixed at all times. By the use of my invention illustrated and described herein I have provided means whereby the liquid will be in a constant state of agitation while the bath is being used, and the device is so equipped that the agitation may take place from different points within the bath.

My improved apparatus is illustrated in the accompanying drawing in which the numeral 5 indicates a tank that may be of any desired form, preferably round, this tank being open at the top for the ready insertion of articles to be treated in the bath 6 within the tank, which bath may be constituted of such ingredients as will be proper for the results to be attained in any given case. A base or support 7 is mounted upon the edge of the tank, a slot being formed in the base thereby providing a lip 8 through which a set screw may extend for securing the base in place, the upper edge of the tank project-
whereby the lateral outlet at the bottom may be directed in different directions and means for removably attaching said supporting means to the tank.

2. An agitator for baths for treatment of metal including a tank, a pump located within the tank and including a chambered housing at its lower end having angularly disposed openings therein, means independent of the tank for adjustably rotatably rotating the pump on the upper edge of the tank whereby one of the openings in the chambered housing may be directed in a different direction and means for locating the pump in different positions with respect to the supporting means.

3. An agitator for baths for treatment of metal including a tank, a pump located within the tank, and having a chambered head telescopically mounted upon the lower end thereof, and having an outlet directed toward the side walls of the tank, and an inlet means in said head communicating with the chamber therein, means independent of the tank for adjustably rotatably supporting the pump on the upper edge of the tank, and means for changing the position of the pump rotatably and vertically within the tank.

4. An agitator for baths for treatment of metal including a tank, a pump located within the tank and including a tube and a housing forming a chamber telescopically mounted at the lower end of the tube with an opening through the bottom of the chamber and another through the side thereof to its interior, and means for changing the position of the pump rotatably and vertically within the tank, said means including a bracket removably connected to the tank end having a portion within which the tube of the pump is adjustably secured.

STANLEY P. ROCKWELL.