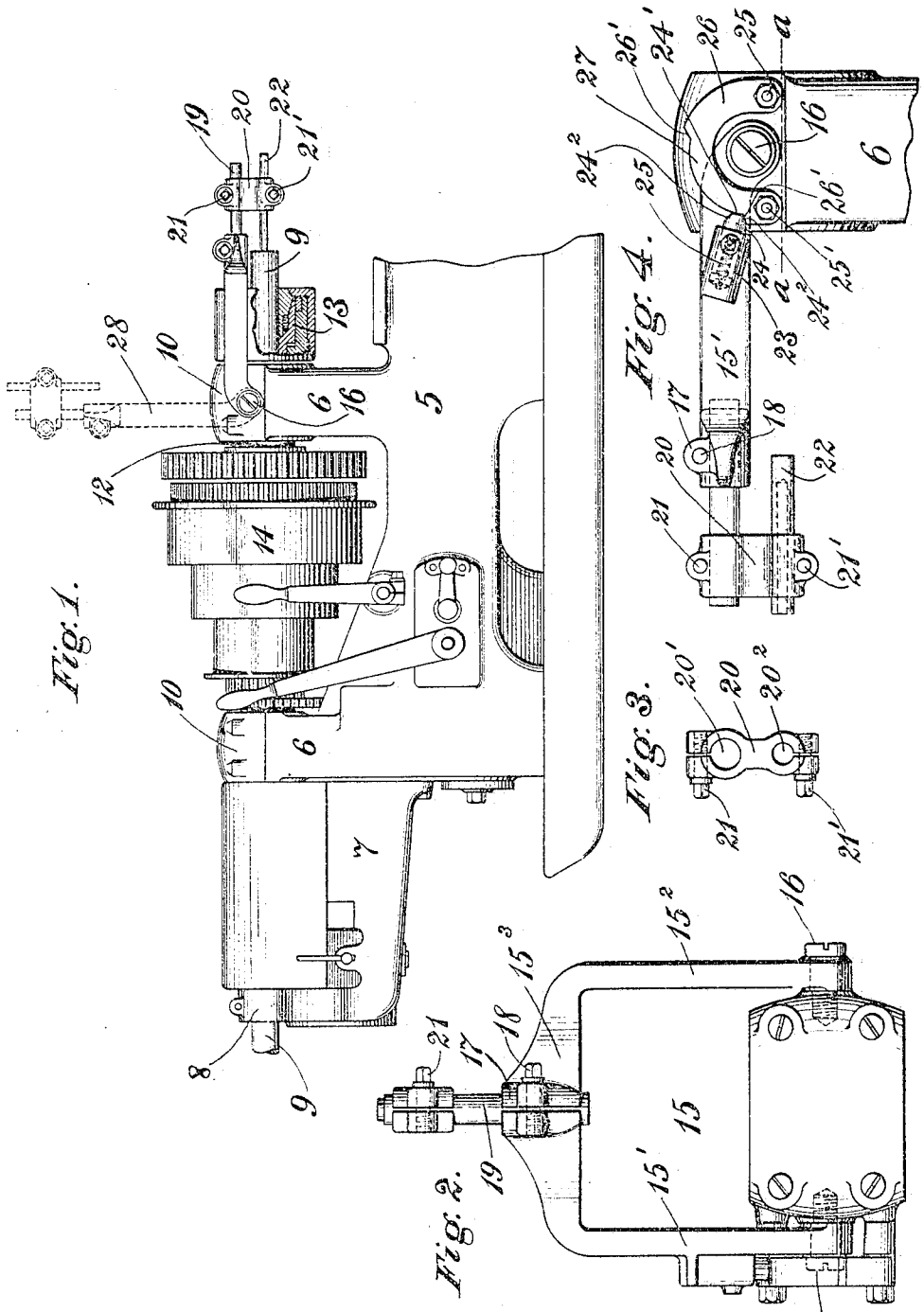
No. 782,243. PATENTED FEB. 14, 1905.

B. M. W. HANSON.

FEED STOP FOR METAL WORKING MACHINES.

APPLICATION FILED MAR. 28, 1904.



Witnesses:

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No. 782,243. Patented February 14, 1905.

UNITED STATES PATENT OFFICE.

BENGT M. W. HANSON, OF HARTFORD, CONNECTICUT, ASSIGNOR TO PRATT & WHITNEY COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF NEW JERSEY.

FEED-STOP FOR METAL-WORKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 782,243, dated February 14, 1905.

Application filed March 28, 1904. Serial No. 200,473.

To all whom it may concern:

Be it known that I, BENGT M. W. HANSON, a citizen of Sweden, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Feed-Stops for Metal-Working Machines, of which the following is a specification.

My invention relates to feed-stops for metal-working machines, and has for its object the provision of improvements in that class of devices whereby they will be rendered more reliable in operation and positive in action.

A further object of the invention is the provision of a fork carrying the stop proper, said fork being pivoted to a part of a machine with which the stop may be employed.

A further object of the invention is the provision of adjustable and interchangeable devices for holding the stop-rod.

A further object of the invention is the provision of means for cushioning and restraining the movement of the fork and preventing shock at the limits of its movement.

Other objects of the invention will be hereinafter stated.

In the accompanying drawings, Figure 1 is a side elevation of a metal-working machine provided with the improved feed-stop. Fig. 2 is a plan view of the improved stop, showing it in lowered position. Fig. 3 is a side elevation of a split clamp employed with the improved stop, and Fig. 4 is a side elevation of the improvement.

Like characters designate similar parts throughout the several views.

Referring to the drawings, the numeral 5 designates the head-stock of a turret or other lathe, from which rise pillow-blocks 6 and to the end of which is secured a bracket 7, carrying an eye 8, through which the stock 9 is fed. In bearings 10 of the pillow-blocks is journaled the usual tubular live-spindle 12 of the lathe, said spindle carrying at its forward end a chuck 13 and having mounted thereon between the bearings common driving mechanism 14.

Designated in a general way by 15 is the improved stop device, which in the form shown is of fork shape. Screws 16 pass through the arms $15'$ 15^2 of the fork and the caps of the bearings 10 of the pillow-blocks 6, as illustrated in Fig. 2. A split socket or clamp 17 is formed on the cross-bar 15^3 of the fork, and a screw 18 is employed for forcing the parts of said socket together. This clamp is designed adjustably to receive a rod 19, which may be of any desired length.

Designated by 20 is a device having split eyes $20'$ 20^2 at each end, and these eyes are adapted to be compressed by means of screws 21 $21'$. The split eye $20'$ is slipped over the rod 19, and the jaws of said eye are compressed upon the rod by means of screws 21. In the split eye 20^2 is adjustably fitted a stop-rod 22, which may also be of any desired length. Interchangeable rods 19 and 22 may be employed with the machine, so that any desired adjustment of the feed may be obtained.

Projecting from the arm $15'$ is a chambered projection 23, in which is mounted a spring-actuated plunger 24, having a straight end surface $24'$ and two beveled sides 24^2, the stem of this plunger being surrounded by a spring 25, which normally impels the plunger outward, and said plunger acting as a brake, as will be hereinafter described.

Secured to the forward pillow-block 6 by screws $25'$ or otherwise is a plate 26, having inclined abutments $26'$ and a curved intermediate surface 27. As will be obvious, the brake-plunger 24 is held by its spring 25 in contact with said curved surface 27, and consequently when the stop is swung on the pivot screws or bolts 16 it will be restrained from sudden movement by said plunger. Furthermore, said plunger also acts as a buffer to prevent jar or shock, the inclined surfaces $24'$ 24^2 thereof engaging the inclined abutments of plate 26 at the limit of each stroke of the fork with a wedging action, so that the plunger will be forced rearward against its spring, and thus cushion the blow of the fork.

As will be observed by reference to Figs. 1

and 2, the pivots 16 are located above the longitudinal axis of the chuck-spindle 12, so that when it is desired to remove the stop 22, against which the stock 9 has been fed by mechanism, (not shown,) said stop will clear the end of the stock when the fork 15 is swung to the position represented by dotted lines in Fig. 1.

Stock 9 is fed through the hollow spindle 12 and chuck 13 until the forward end thereof comes into contact with the stop 22, the limit of feed being determined by the adjustment of said stop in the split eye 21′ or by the substitution of longer or shorter stop-rods for the one shown. After the desired feed of the stock has been accomplished the chuck is closed in the usual way, and the fork is swung to the vertical position represented by dotted lines 28 in Fig. 1, the stop-rod clearing the end of the stock in the manner above described. As above stated, at the limit of either movement of the stop one of the inclined surfaces of the plunger 24 comes into contact with an inclined abutment 26′ of the plate 26, thereby producing a wedging action and causing the plunger to retire rearward against the action of its spring 25, and therefore to act as a buffer to cushion the shock of the fork 15.

Changes may be made in the form and proportions of the various parts without departure from the invention, and the rods 19 and 22 may be adjustably held in position by means different from those shown. Again, the invention is not limited to employment with any particular style of machine, that shown being merely an exemplification of one kind with which it may be used.

Having thus described my invention, what I claim is—

1. A feed-stop comprising a pivoted device; a rod projecting from said device; a clamp carried by and adjustable upon the rod; and a stop-rod adjustably held in the clamp.

2. The combination, with a support, of a device pivoted thereto; a stop-rod carried by said device; and brake for restraining the movement of said device.

3. The combination, with a support, of a device pivoted thereto; a stop carried by said device; and a brake for restraining the movement of and for cushioning the stroke of said device.

4. The combination, with a support, of a fork pivoted thereto, and carrying a clamp; a rod adjustably secured in said clamp; a device adjustable on said rod; and a stop adjustably secured to said device.

5. The combination, with a head-stock, of a fork pivoted thereto; a plate also secured to the head-stock, and having a curved surface provided with abutments; a brake carried by the fork; and a stop also carried by said fork.

6. The combination, with a support, of a fork pivoted thereto and carrying a clamp; a rod adjustably secured in the clamp; a device adjustably secured to said rod, said device also having a clamp; and a stop carried by said clamp.

7. The combination, with a support, of a fork pivoted thereto, and having a split socket; a rod secured in said socket; a clamp carried by the rod; and a stop-rod adjustably held by said clamp.

8. The combination, with a support, of a tubular live-spindle journaled therein; a fork pivoted to the support; a stop carried by the fork; a spring-actuated plunger mounted in a chamber of the fork, said plunger having inclined surfaces at one end; and a plate secured to the support, and having a curved surface, with which the end of the plunger is in contact, and abutments at the ends of said curved surface.

In testimony whereof I affix my signature in presence of two witnesses.

BENGT M. W. HANSON.

Witnesses:

H. E. BAILEY,

E. C. BENEDICT.