To all whom it may concern:

Be it known that I, Jacob Schick, a citizen of the United States, and a resident of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Safety Razors, of which the following is a specification.

This invention relates to an improved safety razor which is adapted to use what are commonly known as wafer blades, that is, thin blades, these blades being held within the razor and adapted to be fed therefrom into shaving position when desired, and can be pushed beyond the shaving position for ejection or either to be replaced by a new blade or for the purpose of washing the blade and the razor.

The invention is designed to provide a razor of this kind in which the movement of the magazine can be extended to a point where the magazine is uncovered, whereby a new series of blades can be inserted in the magazine.

The invention further consists in certain details of construction which will be hereinafter more fully described and finally embodied in the claims.

One form of razor embodying my invention is illustrated in the accompanying drawing, in which Figure 1 is a central longitudinal section through the razor. Figure 2 is an elevation or front view of the razor, one-half thereof being shown in central vertical section. Figure 3 is an end view of the razor. Figure 4 is a horizontal section taken on line 4—4 in Figure 1. Figure 5 is a perspective view of the magazine and guard used in the razor shown in Figures 1, 2 and 3. Figure 6 is a perspective view, broken away to show the form of the positioning plate in the upper end of the handle, and Figure 7 is a perspective view of one of the blades used in the razor illustrated.

In the form shown the handle 10 has at its upper part a split post portion 11 and then extends laterally, as at 12, forming arms which are merged into the side plates 13 which support the top plate or positioning plate 14, this plate being preferably rounded to provide a smooth surface for contact with the face of the user. The magazine 15 is adapted to swing or slide underneath the positioning plate, this magazine being box-like, as will be seen from Figures 1 and 5, with the end walls 16, the front wall 17 and the rear wall 18, and its top surface 19 being curved on a radius the same as the under face of the positioning plate 14, so that a tight joint can be effected so as to prevent the entrance of water into the magazine when the razor is shut.

The front lip 21 of the magazine is provided with teeth 22 so that a guard is formed which has the function of the guard in safety razors, in that it prevents the blade from cutting the face of the user. The magazine 15 is mounted on the top of a hollow stem 23 which is preferably flattened at the sides, as at 24, so that it fits tightly and makes a good appearance with the split portion of the post 11, the stem having an opening 25 through which the pin 26 is passed, the pin 26 thus acting as a pivotal pin on which the magazine swings, and the center of which pin is preferably the center of the arc which defines the contacting faces of the upper face of the magazine and the lower face of the positioning plate.

I provide a yielding means for holding a series of wafer blades that are in the magazine so that they are in position to be successively removed into shaving position. The blades 27 are of the usual wafer type and are supported on a plate 28, and a spring 29 bears against the plate at one end and abuts on the bottom end of the stem at the other end and is preferably encased in a sleeve 30 so that the blades are constantly being pressed upward and are adapted to be successively removed when the shoulder 31 on the under face of the positioning plate engages the back end of the top-most blade and is swung forward after such engagement.

One means of swinging the plate is shown in the drawing, this means including a curved rack 32, the end of the extension 33 of the stem 23 and a pinion 34 rotatable in the handle and adapted to be rotated by reason of its being secured to the stem 35 and the rotating part 36 of the handle, which, in the form shown, is hollowed out, as at 37, to form a chamber into which a package 38 of reserve blades can be placed, and a suitable closure 39 is affixed to the end to confine the package 38 in the handle.

In order to insure a tight joint between the upper face of the magazine and the lower face of the positioning plate, even under excessive wear, I provide a yielding means, the
form shown comprising a spring 40 encircling the pivotal pin 26 and bearing at its end against the stem 33, the opening 25 being slightly elongated to form a short slot to permit a slight upward movement of the magazine, so that there is no limitation to its upward tendency and a tight joint is assured.

Different positions of the razor parts can be indicated by suitable indicating marks or insignia, shown at 41 in Figure 3.

To hold the blades in alignment I provide suitable aligning means, in the form shown this comprising convex portions 42 on the side walls 16 of the magazine to receive corresponding notches or indentations 43 in each of the blades 27, and a corresponding enlarged or bulged part 44 at the ends of the recess 45 in the positioning plate permits the movement of the top-most blade into the recess 45 when the bulged part 44 comes in register with the convex portions 42 of the magazine.

The operation of the razor is as follows:

Assuming that the razor is empty and in the position shown in Figure 3, the mechanism for moving the magazine, in this case the rotative part 36 of the handle, is turned so that the pinion 34 moves the rack 32 and this swings the magazine so that the guard retreats under the positioning plate; in other words, the magazine swings backward until its top is opened. A package of blades is then placed in the magazine against the pressure of the spring 29 and held down by the finger while the magazine is again swung forward to the position shown in Figure 1, the blades now being enclosed in a water-tight and air-tight frame with no blade exposed.

If a blade is needed, the part 36 is turned and the swinging mechanism as above described is operated to swing the magazine forward until the back end of the top-most blade snaps over the edge of the shoulder 31, then the movement of the magazine is reversed and it moves back to the position shown in Figures 1 and 3, but the top-most blade in the positioning means, that is, in the chamber 44 under the positioning plate 14, is held in position, and when the guard on the magazine has been swung back to the proper point, the razor is ready for shaving. If desired, this point may be indicated by means of the index 41 shown in Figure 3. In this position the blade is held against retracting and against any longitudinal movement and the guard can be positioned, if desired, to provide for a closer shave.

After the shaving is completed, or if it is necessary to remove the blade, the blade which is in position for shaving can be ejected by swinging the magazine backward until the shoulder 31 appears beyond the end of the guard 22, but not sufficiently to entirely uncover the chamber in the magazine, the blade when thus exposed being adapted to be removed from the chamber or recess 45 and can be cleaned and replaced and the magazine again swung to the position shown in Figure 1.

It will thus be seen that the razor, when properly operated, will successively remove the blades from the stack of blades in the magazine, that the device can be operated to eject a blade and be in position to have it replaced therein, so that a blade can be used again in the razor without disturbing the stack of blades in the magazine.

The device is illustrated with the magazine swinging under the positioning plate, but it will be evident that other means and other arrangements of parts can be devised for bringing about the result desired, my invention residing in a razor adapted to successively use blades from a stack of blades, and the invention is designed to include such equivalent motions and mechanisms as will bring about such functioning.

I claim:

1. A safety razor comprising a guard, positioning means for holding a blade in shaving position on the guard, a magazine for separate wafer blades, and positive means for feeding blades in succession from the magazine to the positioning means.

2. A safety razor comprising means for holding a blade in shaving position, a magazine for separate wafer blades, and positive means for successively feeding blades from the magazine to shaving position in the holding means.

3. A safety razor comprising means for holding a blade in shaving position, a magazine for wafer blades, and means for successively feeding blades from the magazine to shaving position in the holding means, said feeding means being disposed so that excess movement thereof ejects a blade in shaving position from the razor.

4. A safety razor comprising a handle with a positioning plate at the top, a guard, a magazine for wafer blades on the guard, the guard and positioning plate having a connection so that one is movable relative to the other, whereby such movement will successively feed blades in the magazine into shaving position between the positioning plate and the guard.

5. A safety razor comprising a handle with a positioning plate on the top thereof, a magazine swinging under the positioning plate, a guard on the magazine, means for swinging the magazine, the magazine and positioning plate having acting means to feed wafer blades from the magazine to shaving position between the positioning plate and guard when the magazine is swung.

6. A safety razor comprising a handle with a positioning plate on the top thereof, a
magazine swinging under the positioning plate, a guard on the magazine, means for swinging the magazine, the magazine and positioning plate having coacting means to feed wafer blades from the magazine to shaving position between the positioning plate and guard when the magazine is swung, said coacting means, when moved beyond the shaving position of the blade, acting to eject a blade in such position from the razor.

7. A safety razor comprising a handle including a post and a positioning plate spaced above said post, a magazine swinging in the post and with its top edge abutting on the positioning plate, a guard on the magazine, the magazine being adapted to hold a series of wafer blades, a spring acting to eject said blades from the magazine, the bottom face of the positioning plate being formed to engage and remove the top of said blades when the magazine is swung.

8. A safety razor comprising a handle including a post and a positioning plate spaced above said post, a magazine swinging in the post and with its top edge abutting on the positioning plate, a guard on the magazine, the magazine being adapted to hold a series of wafer blades, a spring acting to eject said blades from the magazine, the bottom face of the positioning plate being formed to engage and remove the top of said blades when the magazine is swung, the handle including rotative means for imparting a swinging motion to the magazine, said rotative means being provided with a chamber for receiving a package of blades.

9. A safety razor comprising a handle with a divided post and a positioning plate, a magazine swinging in said post and against the positioning plate, yielding means for holding the magazine in contact with the positioning plate, a guard on the magazine, the magazine being adapted to hold a series of razor blades, yielding means for forcing said series of blades against the positioning plate, the positioning plate having a shoulder to remove the top blade from the series of blades when the magazine is swung, and adapted to eject said blade from the razor when the magazine is subjected to excess movement beyond the shaving position.

10. A safety razor comprising means for holding a blade in shaving position, a magazine for wafer blades, said holding means and the magazine being movable relative to each other, and coacting means actuated by the relative movement of said parts to positively feed a blade from the magazine to shaving position in the holding means.

11. A safety razor comprising means for holding a blade in shaving position, a magazine for holding a stack of blades, and means for feeding a blade from said stack to shaving position in the holding means.

12. A safety razor comprising means for holding a blade in shaving position, a magazine for holding a stack of blades, said holding means and the magazine being movable relative to each other, and coacting means on said parts actuated by the relative movement of said parts for feeding the top blade from the stack to shaving position in the holding means.

In testimony that I claim the foregoing, I have hereunto set my hand, this 20th day of June, 1921.

JACOB SCHICK.