This invention relates to apparatus for demonstrating to the public the mechanical flexibilizing of shoes in stores where it is the practice to save the customer from the discomfort usually attendant upon the wearing of new shoes by breaking in a selected pair of shoes to eliminate the stiffness which is the cause of such discomfort. In a companion application I have disclosed a machine which is actually used for breaking in a pair of shoes selected by the customer, but in order to provide a machine that is more satisfactory to demonstrate to the public the principle involved in the use of such a machine, I have devised the present construction and arrangement of apparatus. The aforesaid companion application bears Serial No. 624,723 and was filed of even date with the present application.

The present improvement is based upon the principle of producing a flexing of the shoe by a movement which simulates the stresses to which the shoe is subjected in walking by a construction and arrangement of actuating parts that is simple and economical to construct and that is adapted to serve as an exhibiting apparatus for display in show windows for demonstrating the flexibilizing of the shoes on sale.

Generally speaking, the invention embraces a foot form supported above a tread platform by an oscillatory and reciprocatory slide rod, which passes through a swivel block mounted to oscillate about a fixed axis and also passes through a revolving sleeve pivotally connected with an actuating crank shaft, said sleeve having intermittent lifting action through the medium of a yieldable thrust member interposed between itself and a shoulder or stop member secured to the slide rod intermediate of the sleeve and of the axis of the swivel block. This and other features of the invention will be particularly described in the following specification and will be defined in the claims hereto annexed.

In the accompanying drawings I have illustrated a simple and convenient construction and arrangement embodying the principles of this invention, in which

Fig. 1 is a rear elevation showing a foot form in raised position above the tread platform or element in conjunction with the swivel support and the actuating sleeve and crank shaft.

Fig. 2 is a rear elevation on the plane 2—2 of Fig. 1.

Fig. 3 is a detail view showing the relation of the actuating parts when the shoe forepart is being flexed against the tread element with the creasing member fixing the creases in the forepart of the shoe upper.

In the practice of the invention according to the form illustrated, I provide a tread or foot supporting platform 1, which forms the top 5 of an enclosing cabinet or casing 1 in which the driving means is mounted. As shown, this comprises a motor O employed to drive the main actuating shaft 2 through the medium of a driving belt O' working, through speed reducing gearing 10 N, N', to rotate the shaft 2 at a moderate speed in a counter-clockwise direction as indicated by the directional arrow in Fig. 1. The shaft 2 is secured a crank 3 having a crank pin connection with a sleeve 4, through which slidable passes a supporting rod 7 which is fulcrummed in a swivel block 5 that is pivotally mounted on a fixed bracket 6 to oscillate about a pivotal axis slightly above the level of the tread 4. To the upper end of the supporting slidable rod 7 is secured a 20 bracket or head H which is rigidly attached to the foot form, which preferably comprises a shoe A in which is inserted a main last block A' filling the middle and rear portions of the interior of the shoe and having hinged at its forward edge a 25 pivotal toe block A' which is transversely grooved across the top near its rear end to facilitate the forming of creases in the upper. The hinge joint or pivotal axis of the toe block is located approximately at the transverse ball joint line of the 30 shoe.

On the slide rod 7, which supports the foot form, is secured intermediate of the swivel block and the sleeve 4 a stop collar 9 and between the stop collar and the sleeve below it is placed a 35 helical spring 10, whose upper end, when thrust upward against the stop collar 9 by the upward movement of the sleeve 4, serves as a yielding thrust member for lifting the rod 7 and the foot form away from the tread element 1. On the other hand, when the crank pin and sleeve 4 descend from the highest point reached in the revolution of the crank 2, the slide rod 7 is permitted to slide downward through the swivel block until the bottom of the shoe rests upon the tread 4, which occurs when the crank pin and sleeve are at about the level of the drive shaft 2 and thereafter the revolution of the crank through the lower half of its arc of travel operates to rock the forepart of the shoe on the tread platform 50 which results in flexing the forepart at approximately the ball joint line, which of course results in forming creases in the upper at the top of the forepart.

A supplemental guide rod 12 is secured in the 55
supporting head or bracket 8 and extends downward in parallelism with the slide rod 7 through a vertical bore formed in a lateral extension of the swivel block. This guide rod serves to give increased rigidity and prevents circumferential displacement around the supporting slide rod 7.

In the different arcuate portions of its revolution the crank pin, which carries the shoe 2 as it descends from topmost position, permits the shoe to descend into contact with the tread platform, then rocks the shoe on the platform from heel to toe producing a fullness in the upper of the shoe in front of the instep and thereafter, during the upward movement of the crank pin, establishes thrust contact between the thrust spring 16 and the collar 9 to lift the supporting rod and raise the shoe form the platform, thus simulating the various positions of the shoe experienced when the wearer is walking. To demonstrate the fixing of the crease in the upper at definite points, I have provided a creasing member comprising, essentially, an angle arm 16 pivotally mounted on a horizontal pin $^a$ projecting inwardly from the head 2, the longer member of the angle arm being curved or projected laterally to overhang the creasing grooves in the toe block $A^2$, the arm being formed with downwardly projecting ribs to crowd the leather into the transverse creases in the toe block. Pressure is exerted by means of a helical spring 16 interposed between the uppermost member of the angle arm 16 and a stop member $^b$ projecting upward to receive the rearward thrust of the interposed spring. The spring is supported against displacement by a finger 17 pivotally attached to the upper arm of the angle lever and extending rearwardly through the stop member $^b$.

It is preferred to interpose the thrust spring 16 between the collar and the sleeve to prevent a sudden or jerky action when the shoe is lifted from the tread surface by the upward movement of the supporting rod.

What I claim is:

1. An apparatus of the class described embracing in combination with a tread platform, a shoe supporting rod slidably fulcrumed in a swivel block at approximately the level of said platform, a lifting and guiding sleeve slidably mounted on said rod below the platform, a revolute acting crank pivotally connected at its free end with said sleeve, a stop located on the rod between the sleeve and the swivel, a compressible thrust spring seated on said sleeve in position to yieldingly engage and lift the rod and thereby raise the shoe from the platform when allowing the shoe to return to tread contact with the platform when the sleeve descends, said rod by its pivotal movement acting to rock said shoe upon said platform.

3. An apparatus of the class described comprising in combination with a tread platform, a shoe supporting rod slidably fulcrumed at a point adjacent the level of said platform to permit combined pivotal and endwise movement to impart rocking movement of said shoe upon the platform and to raise the shoe from said platform in alternation, and acting means for imparting a combined lifting and rocking movement comprising a revoluble crank arm, and a sleeve slidably mounted on said rod below the platform 20 and having pivotal connection with said crank arm.

4. In an apparatus of the class described the combination with a shoe supporting platform means for rocking said shoe in contact with said platform and for raising it after said rocking movement from said platform embracing a shoe supporting rod rigidly attached at its upper end to said shoe and fulcrum supported intermediate of its ends near the level of said platform to permit combined endwise and rocking movement thereof, a rod lifting and guiding sleeve mounted on said rod below its fulcrum, and a crank shaft pivotally connected with said sleeve for imparting an oscillating movement thereto, whereby the shoe is alternately raised from said platform and rocked upon said platform from heel to toe after the shoe has returned to contact with said platform.

5. In an apparatus of the class described the combination with a tread platform, a shoe supporting head firmly secured to the shoe, a supporting rod to which said head is secured, means for imparting a combined endwise and oscillating movement to said supporting rod and thereby rock the shoe upon said platform and lift it therefrom, a creasing device for creasing the shoe upper forwardly of the instep mounted on said head and arranged to press creases across the upper of the shoe forepart when the shoe is rocked on said platform.

6. In an apparatus of the class described the combination with a shoe tread platform, of means for alternately rocking said shoe upon the platform from heel to toe and raising it therefrom, and means for forming creases across the upper of the forepart of said shoe during the rocking operation, said means comprising a pivotal lever provided with creasing members overhanging the forepart of the shoe, and a spring for imparting creasing pressure to the creasing members during the forward rocking movement of the shoe upon the platform.

ELMER J. BLISS.