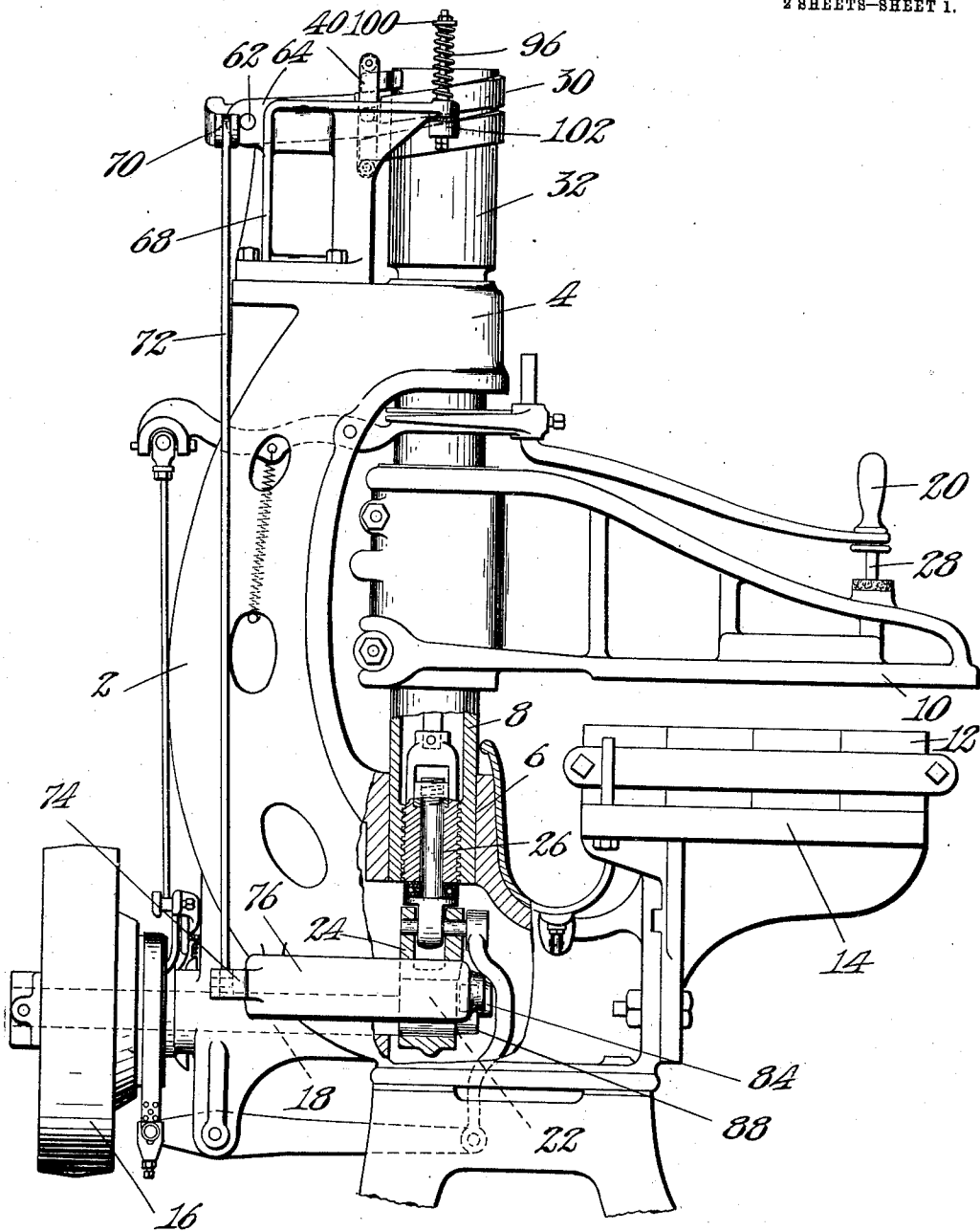


S. W. LADD.
CLICKING MACHINE.
APPLICATION FILED MAY 20, 1911.

1,006,568.

Patented Oct. 24, 1911.

2 SHEETS—SHEET 1.



WITNESSES:

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Fig. 1.

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2 SHEETS—SHEET 2.

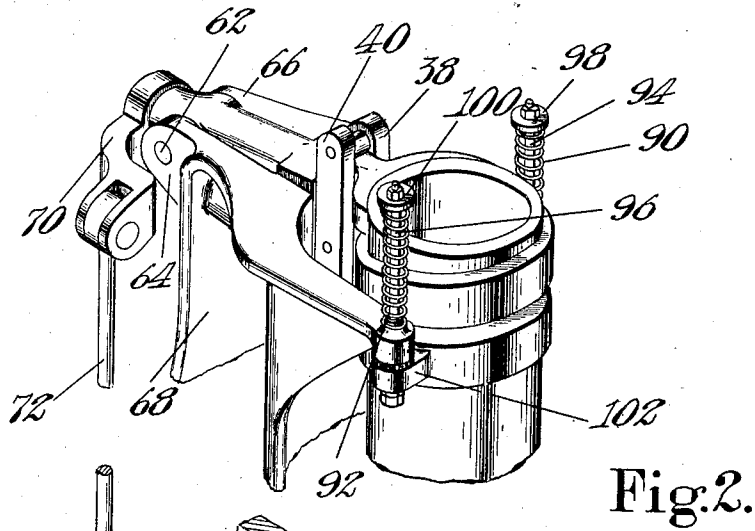


Fig. 2.

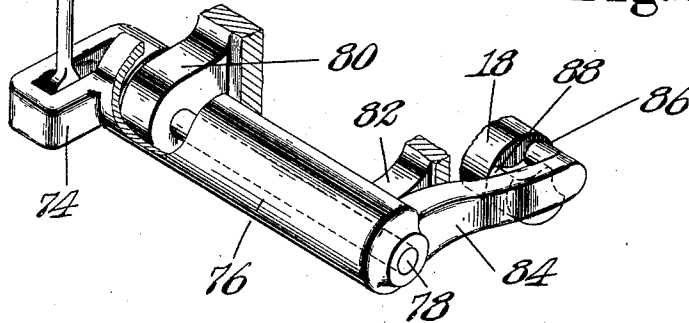


Fig. 3.

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UNITED STATES PATENT OFFICE.

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CLICKING-MACHINE.

1,006,568.

Specification of Letters Patent.

Patented Oct. 24, 1911.

Application filed May 20, 1911. Serial No. 628,501.

To all whom it may concern:

Be it known that I, SHERMAN W. LADD, a citizen of the United States, residing at Beverly, in the county of Essex and State of Massachusetts, have invented certain Improvements in Clicking-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines for cutting out thin sheet material, such as upper leather for boots and shoes, and particularly to machines of the type known to the trade as "clicking machines".

A clicking machine which is extensively used at the present time comprises, among other things, a vertically reciprocating post or plunger arranged at one side of a stock supporting bed, a presser member carried by said post and extending over the bed, means carried by the presser member for actuating the mechanism by which the vertical reciprocation of the post is effected, and a brake operated from the post during its downward movement for checking the movement of the presser member over the bed before said member engages the die.

An object of this invention is to provide in a clicking machine a brake for the purposes above set forth which shall be operated directly from the driving shaft from which is operated the mechanism for effecting the pressing operation, whereby the brake can be applied more quickly than in constructions which depend upon a downward movement of the post and whereby the timing of the application of the brake can be regulated with greater nicety.

Another object of the invention is to provide a brake which shall be simple in construction and inexpensive to manufacture and which can be easily assembled and readily adjusted.

Other objects of the invention will be apparent from a consideration of the following description in connection with the accompanying drawings, in which,—

Figure 1 is a side elevation of a clicking machine having embodied therein a preferred form of the braking mechanism which constitutes the present invention; Fig. 2 is a detail perspective of the brake and of the connections with the driving

shaft by which the brake is operated; Fig. 3 is a detail section of the means for tightening the brake upon the post or brake drum.

The clicking machine herein shown is of the type disclosed in United States Letters Patent to Arthur Bates, No. 921,503, granted May 11, 1909, and comprises a frame 2 provided with upper and lower bearings 4 and 6 in which reciprocates the post 8 to which the presser member 10 is attached, said presser member being arranged to swing into operative position over different parts of the stock supporting bed or block 12 carried by the table 14 bolted to the front end of the frame 2. A loose pulley 16 is arranged to be clutched to a driving shaft 18 by suitable clutch mechanism controlled from a handle 20 carried by the presser member 10. Rotation of the shaft 18 operates, through an eccentric 22, an eccentric link 24 and a spindle 26 having a pivotal connection with said eccentric link, to effect a vertical reciprocation of the post 8 and thereby a movement of the presser member 10 toward and away from the bed 12, all as more fully set forth in the Letters Patent above referred to.

In the operation of the machine, the operator grasps the handle 20, which is arranged to slide up and down upon a pin 28 upon the presser member 10, and swings the presser member into operative position over the die, wherever the die is located on the stock on the bed 12. As the presser member comes into operative position over the die, the operator depresses the handle 20 to cause the loose pulley 16 to be clutched to the shaft 18 to effect the pressing operation. If the presser member is moved quickly into operative position over the die, it will acquire considerable momentum and it will therefore be necessary to check the lateral movement of the presser member before the presser member engages the die in order to prevent injury to the die and undesirable cutting of the bed. This checking of the lateral movement of the presser member may be effected by the operator, but to avoid putting an unnecessary burden upon the operator and to insure uniformity of operation of the machine automatically operated braking means is preferably provided for checking the lateral movement of the presser member.

It will be observed from the foregoing description that the braking means must operate before the presser member engages the die and that to insure the most successful operation the braking means should operate as long as possible before the presser member engages the die. Furthermore, to facilitate rapid operation of the machine, it is desirable that the brake be released as soon as possible after the pressing operation has taken place, that is, as soon as the presser member starts to move out of engagement with the die. To obtain this advantageous timing of the operation of the braking means is one of the principal objects of the present invention, and to this end the braking means is preferably operated directly from the driving shaft 18, so that the beginning of the application of the brake may coincide substantially with the clutching of the loose pulley 16 to the driving shaft 18. In the illustrated construction the brake comprises a band 30, preferably of spring metal, coiled about the post 8 or about a drum 32 formed upon the upper end of said post, the two ends of said brake band or spring being arranged in substantial alinement. These ends in the illustrated construction are formed as lugs 34 and 36 extending substantially along radii from the center about which the band 30 is coiled. In the illustrated construction the brake band 30 is coiled twice around the drum 32, sufficient space being provided between the coils to permit the band to be contracted into engagement with the drum. To contract the brake band 30 into engagement with the drum 32, means is provided for effecting a relative movement of the ends of the band or of the lugs 34, 36 about a center substantially midway between these ends, thereby coiling said band tightly into engagement with said drum. The lugs 34 and 36 are confined within a frame comprising side bars 38 and 40 connected by bolts or pivots 42, 44, 46 upon which are carried rolls 48, 50, 52, respectively, the rolls 48 and 52 serving to confine the lugs 34 and 36 also against a movement of separation in a vertical direction. The roll 50 is received within a groove 54 in a block 56 carried upon the end of the rock-shaft 58 in the bearing 60 pivoted at 62 between ears 64, 66 formed upon a bracket 68 upon the upper end of the frame 2. The groove 54 serves to confine the roll 50 against vertical movement relative thereto and also against rearward movement.

At its rear end the rock-shaft 58 is provided with a crank arm 70 which is connected by a link 72 to one arm 74 of a lever 76 carried by a shaft 78 having bearings in ears 80, 82 formed upon the frame 2. The other arm 84 of the lever 76 carries a cam roll 86 which engages a cam 88 formed upon the front end of the driving shaft 18. When the

driving shaft 18 starts to turn after the loose pulley 16 has been clutched thereto, the cam 88, acting upon the roll 86, rocks the lever 76, and through the link 72 the crank arm 70 rocks the rock-shaft 58, thereby effecting a relative movement of the ends of the brake band or spring 30 about a center coinciding with the axis of the rock-shaft 58 and tightening said band upon the brake drum 32.

The brake band is supported yieldingly in an elevated position by springs 90 and 92 which surround bolts 94 and 96 arranged to slide vertically in openings in the forked front end of the casting 68, the springs being confined between the casting 68 and washers 98 and 100 upon the upper ends of said bolts. The lower ends of said bolts 94, 96 pass through lugs upon the brake band 30, one of these lugs being shown at 102 in Fig. 2, and nuts upon the lower ends of these bolts serve to support the brake band upon said bolts. When the brake band 30 is applied to the brake drum 32 as the pressing operation begins, the brake band will travel downward with the drum 32, thus causing the springs 90, 92 to be compressed between the washers 98, 100 and the casting 68.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. In a machine of the class described, a bed, a freely movable die, a presser member freely movable over said bed into operative position over said die wherever located on said bed, mechanism for causing said presser member to engage said die and force it through stock supported on said bed, and a brake for checking the movement of the presser member over the bed independently operated from said mechanism.

2. In a machine of the class described, a bed, a die freely movable over said bed, a presser member freely movable over the bed into operative position over the die wherever located on the bed, a source of power, means for effecting movement of the presser member into and out of engagement with the die comprising a driving shaft arranged to be connected at the will of the operator to said source of power, and means operated directly from said driving shaft for checking the movement of the presser member over the bed before it engages the die in the cutting operation.

3. In a machine of the class described, a bed, a die freely movable over said bed, a vertically reciprocating post at one side of said bed, a presser member carried by said post and extending over said bed, said presser member being arranged to swing freely about the axis of said post into operative position over the die wherever located on said bed, means comprising a driving shaft

arranged to be connected at the will of the operator to a source of power for reciprocating said post and presser member to effect the cutting operation, and means connected to said driving shaft and independent of the movement of said post for checking the movement of the presser member over the bed before it engages the die in the cutting operation.

4. In a machine of the class described, a bed, a freely movable die, a presser member freely movable over said bed into operative position over said die wherever located on said bed, mechanism comprising a driving shaft for causing said presser member to engage said die to force it through stock supported on said bed, a cam on said driving shaft, a brake for checking the movement of the presser member over the bed, and connections between said cam and said brake for operating said brake as the presser member begins its movement toward the die.

5. In a machine of the class described, a bed, a freely movable die, a presser member freely movable over said bed into operative position over said die wherever located on said bed, mechanism comprising a driving shaft for causing said presser member to engage said die and force it through stock supported on said bed, a cam on said shaft, a brake for checking the movement of the presser member over the bed before it engages the die, and operating connections between said cam and said brake constructed

to cause said brake to release said presser member when said presser member begins to move away from said die.

6. In a machine of the class described, a presser member, a post by which said presser member is carried arranged to reciprocate vertically and also to oscillate about its vertical axis, a brake cooperating with said post to check the oscillating movement thereof comprising a spring coiled about said post and normally held under its own tension out of engagement with said post, and means for coiling said spring into engagement with said post.

7. In a machine of the class described, a presser member, a post by which said presser member is carried arranged to reciprocate vertically and also to oscillate about its vertical axis, a brake cooperating with said post to check the oscillating movement thereof comprising a spring coiled about said post and normally held under its own tension out of engagement with said post and means actuated as said post begins its reciprocating movement for coiling said spring into engagement with said post.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SHERMAN W. LADD.

Witnesses:

THOS. SCOTT,
W. E. KING.