

A. M. STICKNEY.
MACHINE FOR CUTTING IRREGULAR FORMS.
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975,652.

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2 SHEETS-SHEET 1.

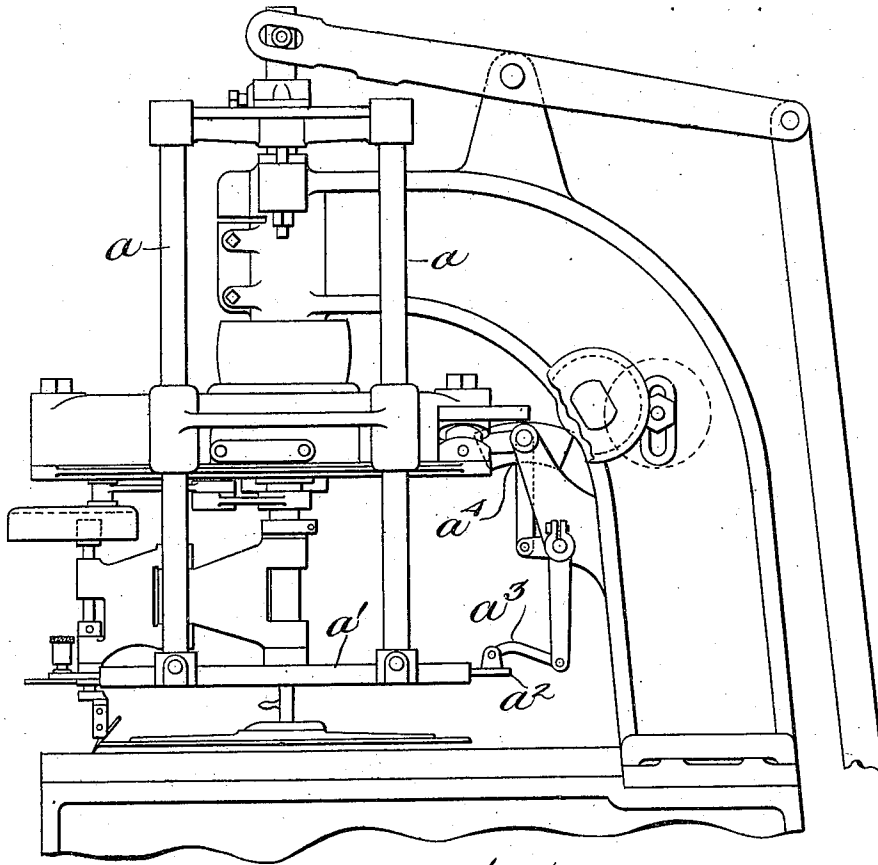


Fig. 1.

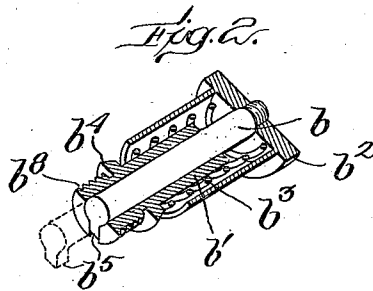


Fig. 2.

Witnesses:

Arthur F. Randall
Katherine A. Dugan

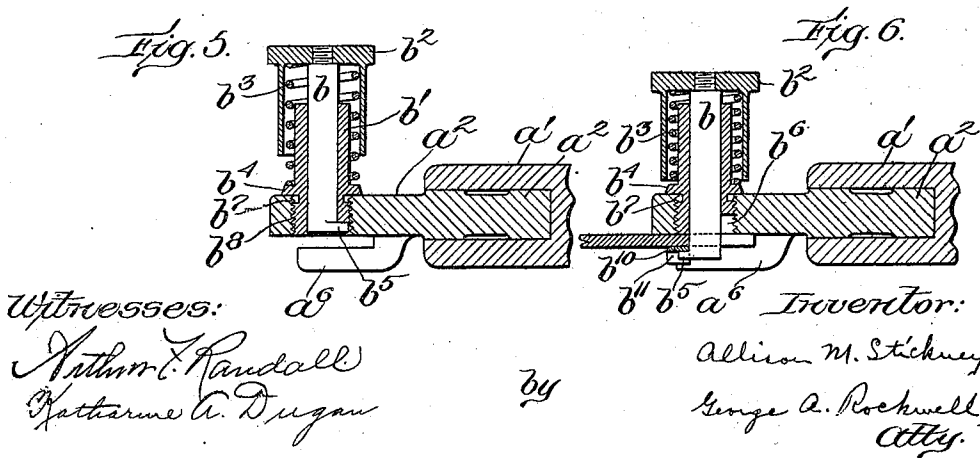
by

Inventor:

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975,652.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

ALLISON M. STICKNEY, OF MEDFORD, MASSACHUSETTS, ASSIGNOR TO WELLMAN COMPANY, OF MEDFORD, MASSACHUSETTS, A CORPORATION OF MAINE.

MACHINE FOR CUTTING IRREGULAR FORMS.

975,652.

Specification of Letters Patent. Patented Nov. 15, 1910.

Application filed March 24, 1910. Serial No. 551,393.

To all whom it may concern:

Be it known that I, ALLISON M. STICKNEY, of Medford, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Machine for Cutting Irregular Forms, of which the following is a specification.

My invention relates to the class of machines described in my Patent Number 647,888, dated April 17, 1900, and especially to means for holding the leader in place.

In the use of machines for cutting irregular forms it is highly desirable that the leader travel accurately the path it is intended to travel because otherwise the work will be defective and the object of my invention is to prevent displacement of the leader while the machine is operating.

My invention consists primarily in means for locking the leader to its support.

It also consists in other features which will be pointed out below.

In the drawings Figure 1 is a partial elevation of a machine embodying my invention; Fig. 2 is a perspective view broken away, of a part of the machine shown in Fig. 1; Fig. 3 is a perspective view broken away of the fastening means hereinafter described; Fig. 4 is a detail of the bolt; Figs. 5 and 6 are enlarged sectional details of a part of the leader-carrying slide; and Fig. 7 is a perspective view of a portion of the leader.

The frame of the machine comprises four vertical rods a which at their lower ends have secured to them the bars a' in which are formed ways for the leader-carrying slide a^2 . This slide is connected by the link a^3 with the usual mechanism indicated at a^4 by means of which said slide is shifted back and forth on the bars a' when cutting a sole which is larger or smaller than the size for which the leader plate a^5 is particularly designed. The leader plate a^5 is supported beneath the slide a^2 by lugs a^6 projecting from the slide a^2 . In order to facilitate the placing in position or removal of the leader plate the latter is formed at each side with notches a^7 which when brought opposite the lugs a^6 permit the leader plate to be lowered away from the slide and removed or raised into position against the under side of the slide a^2 so that by sliding it rearwardly it is engaged with the lugs a^6 . So far the construction described is as usual.

In the type of machine for which my invention is intended it is highly desirable that the leader plate a^5 be firmly and rigidly secured to the slide a^2 so that it can not be displaced or have lost motion with relation to the slide because any movement of the plate with relation to the slide results in a distortion or irregularity in the shape of the sole being cut. It is also highly desirable that the leader plate may be quickly and easily placed in position or removed since different sizes of these plates are provided and it is frequently necessary to substitute one size for another.

My invention provides a means for fastening the leader to the slide which from practice I have found most efficient and far superior to any heretofore provided with which I am familiar. It consists of a bolt b mounted in a bearing block b' with provision for endwise movement and rotation. The upper end of bolt b is threaded and rigidly secured to a head b^2 within which is arranged a spring b^3 bearing at one end against the head b^2 and at its other end against a flange b^4 projecting from the block b' . At its lower end the bolt b is made with a laterally projecting lug b^5 adapted to be received within a recess b^6 formed in the lower end of the block b' when said bolt is shifted into its retracted position. The slide a^2 is made with a tapped hole b^7 near its front end and into this is screwed the lower threaded extremity b^8 of the block b' , the lower end of which is substantially flush with the under side of the slide a^2 so that when the bolt b occupies its retracted position the lower end thereof does not extend below the plane of said under side.

The leader plate a^5 is made with a perforation or notch b^9 which registers with, or is immediately opposite the end of, bolt b when said plate occupies its proper position with relation to slide a^2 and this hole b^9 is of a size and shape to permit the passage therethrough of the end of bolt b carrying the lug b^5 and to snugly fit the shank of said bolt after said end has been passed through said hole so that no lateral movement of the plate a^5 is possible. Alongside of the hole b^9 I fasten a block b^{10} to the under side of plate a^5 said block being made with a notch b^{11} adapted to receive the lug b^5 .

In applying a plate to the slide a^2 it is first placed in position between the lugs a^6

and the body of the slide a^2 and then it is slid edgewise toward the rear of the machine until the hole b^9 is opposite the lower end of the bolt b . Then the operator using the head b^2 as a handle or thumb piece forces the bolt b down against the lifting pressure of spring b^3 causing the lower end of said bolt to pass through the hole b^9 into a position below the plate. While holding the bolt in this position he rotates it in the block b' swinging the lug b^5 around into a position immediately below the notch b^{11} and then when he releases the bolt the spring b^3 forces the bolt b upwardly until the lug b^5 has entered the notch b^{11} and engaged the block b^{10} . The plate a^5 is now rigidly locked to the slide a^2 against lateral movement and the upward pressure of the spring b^3 acts through the lug b^5 to press the plate a^5 firmly against the under side of the slide a^2 so that the frictional engagement between the plate and slide assists the shank of the bolt materially in holding the plate against movement with relation to the slide. The plate is quickly unlocked by the operator pressing downward upon the head b^2 and then rotating the bolt until the lug b^5 is opposite the slot b^{12} forming part of the hole b^9 whereupon the spring b^3 automatically lifts the bolt into its retracted position leaving the plate unlocked.

In practice I have found it difficult before my present invention to provide a locking device which may be quickly and easily locked and unlocked and which at the same time will be efficient under all operative conditions to lock the plate firmly against movement laterally and vertically. It is a fact that the movement of the knife carrier tends to move the leader laterally and the vibration of the machine also tends to loosen the plate and these tendencies are admirably overcome by my present invention.

What I claim is:

1. In a machine for cutting irregular forms the combination of a slide having a threaded opening; a bolt-carrying sleeve threaded at one end and screwed into said opening; a bolt mounted in the sleeve so as to rotate and move endwise, said bolt being made with a head at its upper end and a laterally-projecting lug at its lower end; a spring engaging the head of the bolt so as to hold the bolt yieldingly in its retracted position;

a leader removably mounted on the slide and made with an aperture to permit the passage of the lower end of the bolt and lug, and also made with a socket on the under side thereof within which the lug is held by the spring so as to positively hold the bolt against rotation when in its locking position.

2. A leader locking attachment for machines for cutting irregular forms comprising a sleeve adapted at one end to be connected with the leader-carrying slide of the machine; a bolt mounted within said sleeve so as to be rotatable and endwise movable, said bolt being made at one end with a head and at its lower end with a laterally-extending lug, and a spring surrounding the sleeve and engaging the head of the bolt so as to hold the latter yieldingly in its retracted position.

3. A leader locking attachment for machines for cutting irregular forms comprising a sleeve adapted at one end to be connected with the leader-carrying slide of the machine; a bolt mounted within said sleeve so as to be rotatable and endwise movable, said bolt being made at one end with a head having a depending skirt and at its lower end with a laterally-extending lug, and a spring surrounding the sleeve within the skirt and engaging the head of the bolt so as to hold the latter yieldingly in its retracted position.

4. In a machine for cutting irregular forms the combination of a leader; a slide carrying the leader; a sleeve threaded at one end to engage the leader-carrying slide and having a flange to engage said slide and thereby determine the proper position of said sleeve in said slide; a bolt mounted within said sleeve so as to be rotatable and endwise movable in said sleeve as its bearing, said bolt being removably connected at one end with a head, which head has a depending skirt and said bolt having at its lower end a laterally-extending lug; and a spring within the skirt and surrounding, and guided by, the sleeve and engaging the head of the bolt so as to hold the latter yieldingly in its retracted position.

ALLISON M. STICKNEY.

Witnesses:

GRACE W. JENNINGS,
ARTHUR F. RANDALL.