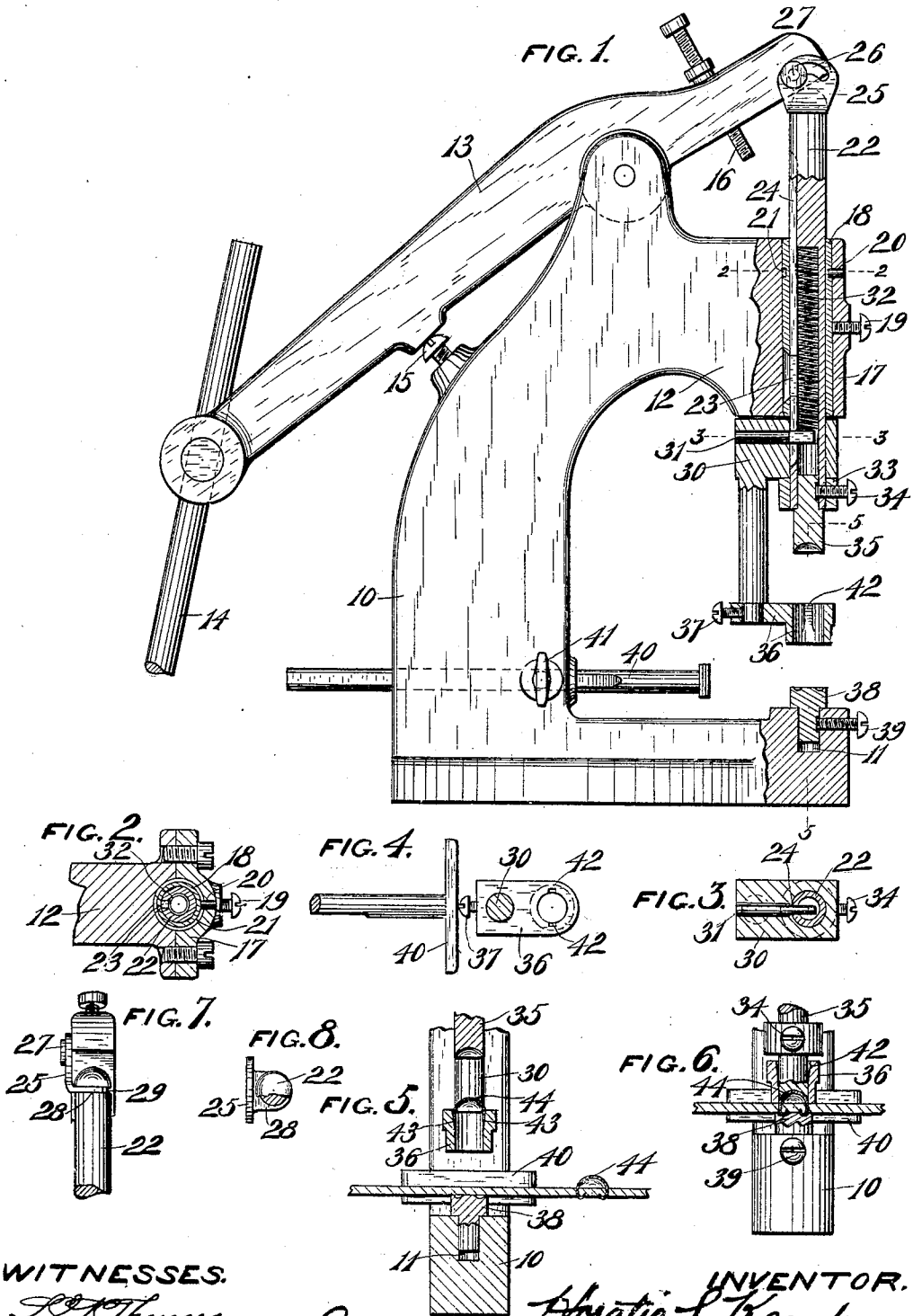


H. S. KEMP.
SPOTTING MACHINE.
APPLICATION FILED JAN. 18, 1909.

948,509.

Patented Feb. 8, 1910.



WITNESSES.

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SPOTTING-MACHINE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HORATIO S. KEMP, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Spotting-Machines, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

10 This invention has for its object to provide a machine for applying ornamental staples, known as spots, to leather or other goods, such as harnesses and the like.

15 An object of the invention is to provide such a machine of a simple construction which will be durable and efficient in use while being inexpensive to construct.

20 Another object of the invention is to provide for quickly and easily adapting the machine for use with spots of different sizes or different shapes.

25 Another object of the invention is to provide such a machine with a tubular spot holder for supporting the spot during the adjustment of the work and descending with the plunger until engaging the work and then having the plunger enter therein to force the prongs of the spot through the work and clench them, the tubular spot holder serving as a guide for the spot during such operation.

30 Another object of the invention is to permit of the adjustment of the spot holder to any desired angle with relation to the edge of the work.

35 Another object of the invention is to provide a novel pivotal and swivel connection between the plunger and the rocking arm.

40 Referring to the accompanying drawings in which like characters of reference indicate the same parts in the different views; Figure 1 is a part sectional elevation of a spotting machine constructed in accordance with this invention; Fig. 2 is a sectional view of a portion thereof on the plane of line 2—2 of Fig. 1; Fig. 3 is a similar view on the plane of line 3—3 of Fig. 1; Fig. 4 is a plan view of the spot holder and gage; Fig. 5 is a sectional elevation on the plane of line 5—5 of Fig. 1, showing the parts in position ready for the plunger and spot holder to descend upon the work; Fig. 6 is a similar view showing the parts in position for completing the operation; Fig. 7 is a detail view of the connection between the

plunger and the rocking arm; and, Fig. 8 is a plan view showing the engagement of the connecting member with the plunger.

In these drawings 10 indicates a frame of such a construction as to provide an anvil support 11 by its base or lower arm and an arched plunger support 12 directly thereabove by its upper arm, there being a rocking arm or lever pivotally mounted at the top of the frame and operated by a connecting rod 14 from any suitable operating means, such as a treadle or the like. An adjustable stop 15 is provided on the frame to engage the lower arm of the lever for limiting the movement of the lever in one direction and an adjustable set screw 16 is provided in the upper end of the lever to engage the top of the frame and limit the movement of the lever in the other direction.

75 The plunger support 12, known as the head of the machine, has a face plate 17 bolted thereon to form between it and the end of the frame a cylindrical bearing within which fits a sleeve 18 which is free to turn therein except when held by a set screw 19 threaded through the face plate 17 and bearing on the sleeve. The sleeve is prevented from having a longitudinal movement in its bearing by reason of a pin 20 which projects inwardly from the face plate 17 and enters an annular groove 21 around the sleeve. A plunger 22 slidably fits within the sleeve 18 and is splined therein by means of a key 23 fixed in the sleeve and projecting into a keyway 24 of the plunger so that said plunger is prevented from turning with relation to the sleeve.

At its upper end the plunger 22 is connected to the lever 13 by means of an angular connector 25 with an arc shaped slot 26 in one portion receiving a headed pin 27 of the lever and a pair of horizontally extending arms 28 on another portion embracing the plunger 22 in an angular groove 29 at the upper end thereof. The connecting plate 25 is thus slidably and pivotally connected with the rocking arm 13 at its vertical portion and is pivotally or swivelly connected to the plunger 22 at its horizontal portion to maintain an operative connection between the rocking arm and the plunger throughout the stroke of the plunger and in any position of the plunger produced by the adjustment of the sleeve 18.

A spot holder 30 is loosely mounted on the

plunger 22 beneath the head of the frame and is splined to the plunger by having a pin 31 projecting through the key way 24 into the interior of the plunger, which is made tubular at its lower end to form a housing for a coil spring 32. The spring 32 bears at its upper end against the plunger and at its lower end upon the pin 31, so that while the spot holder is permitted to slide on the plunger, it is given a pressure by means of the spring to cause it to seek its lowest position thereon. This position of the spot holder on the plunger is limited by its engagement with a collar 33 held on the lower end of the plunger by means of a set screw 34 which passes through the collar and the plunger wall to engage a plunger die 35 which is thereby removably locked within the tubular end of the plunger.

The spot holder 30 has a downwardly extending arm to which a spot holding tube 36 is clamped by means of a set screw 37, with its tubular portion directly beneath the plunger die 35, and an anvil die 38 is clamped in the anvil support 11 by means of a set screw 39 in a position to be also directly below the plunger die 35.

A gage rod 40 is slidable through the frame and is clamped in its adjustments by means of a set screw 41, being located at the height of the anvil die to serve as a guide for the work as it is fed to the machine so that the spots will be placed thereon the desired distance from the edge.

The tubular member 36 of the spot holder is of a size to fit upon the plunger die 35 when the latter is forced downwardly there-through and has grooves 42 in its interior to receive the prongs 43 of a staple 44, known as a spot, and which may be of any desired shape. As here shown the spot is of the usual hemispherical shape and the die plunger 35 has its ends hollowed out to fit thereon.

In operation, the work is fed over the anvil die in touch with the gage 40 and when it is in the desired position the treadle or other operating means is actuated to cause the lever 14 to rock and lower the plunger.

At first the spot holder containing the spot moves downwardly with the plunger, being held against the collar 33 by the spring 32, but upon the tubular member of the spot holder coming into engagement with the work it remains stationary bearing thereon with the pressure of the spring, while the plunger continues its downward movement, the pin 31 meanwhile traveling through the slot 24 and compressing the coil spring.

The plunger engages the spot 44 and forces it through the tube 36, the prongs 43 being guided by the tube to the work beneath. By the time the plunger has reached the lower end of its stroke, as limited by the engagement of the set screw 16 with the head 12,

the prongs have penetrated the work and are clenched by the groove of the anvil die 38 in the manner shown in Fig. 6, thus firmly securing the spot in place. Upon relieving the pressure on the treadle or the other actuating means to cause the lever 13 to swing in the other direction the plunger is first raised alone until the collar 33 engages the spot holder 30 when the latter moves upwardly with it to the normal position of the parts, as shown in Fig. 1, where they are stopped by the lever coming into engagement with the set screw 15. If it is desired to change the size or shape of the spot, it is only necessary to remove the spot tube 36, the plunger die 35 and the anvil die 38 and replace them with others corresponding to the spot to be used, and if it is desired to insert the spot with the prongs at a different angle with relation to the edge of the work, or to change the position of an oval or other shaped spot, it is only necessary to loosen the set screw 19 and turn the spot holder 30 to the position desired, the plunger and the sleeve 18 turning therewith, and then again tighten the set screw 19. This adjustment is permitted by the swivel connection between the plunger and the lever 13 and the sleeve is held in place meanwhile by the engagement of the pin 20 with the annular groove 21 of the sleeve.

The guiding effect of the spot holding tube 36 is the same whatever the thickness of the work may be, for it lowers with the plunger until it engages the work and then permits the plunger to pass through it. It also serves as a spotter or means for indicating to the eye of the operator the point at which the spot is to be placed and enables the correction of the position of the work before the spot is inserted if this is necessary or desirable.

What I claim as my invention is:

1. A spotting machine, comprising a suitably mounted plunger, a spot holder carried by the plunger and movable toward the work therewith but being slidably mounted on the plunger, there being a recess in the plunger with a slot leading thereto, a spring seated in the recess, a pin carried by the spot holder and projecting through the slot into engagement with the spring whereby the spot holder is permitted to bear on the work with pressure while the plunger descends to force the spot through the work.

2. A spotting machine, comprising a suitably mounted plunger, a spot holder slidably mounted on the plunger, a collar on the plunger limiting the movement of the spot holder thereon, there being a recess in the plunger with a slot leading thereto, a pin carried by the spot holder and passing through the slot into the recess, and a coil spring seated in the recess and bearing on the pin, where-

by the spot holder is caused to move downwardly with the plunger but is permitted to remain in engagement with the work under the pressure of the spring while the plunger descends to force the spot through the work.

3. A spotting machine, comprising a suitably mounted plunger having a tubular lower end with a slot therein, a spring seated in the tubular end of the plunger, a spot holder slidably mounted on the plunger, a pin on the spot holder passing through the slot and engaging the spring, a collar on the lower end of the plunger, a plunger die fitting in the lower end of the plunger, and a set screw passing through the collar and the wall of the plunger and engaging the plunger die for locking them together, the collar serving to limit the movement of the spot holder on the plunger and the spring pressed sliding connection of the spot holder on the plunger serving to permit the spot holder to move with the plunger into engagement with the work and remain in engagement with the work under pressure of the spring during the further movement of the plunger.

4. A spotting machine, comprising a frame, a sleeve adjustably mounted therein, a plunger slidably mounted in the sleeve and splined thereto to be incapable of turning independently thereof, a lever mounted on the frame, a swivel connection between the plunger and the lever, and a spot holder splined on the plunger to be adjusted in its position with the adjustment of the sleeve.

5. A spotting machine, comprising a frame, a sleeve swiveled in the frame to be capable of turning therein without longitudinal movement, a set screw for clamping the sleeve against the turning movement, a plunger splined through the sleeve to be turned therewith, a lever pivoted to the frame, a swivel connection between the plunger and the lever to permit of the turning adjustment of the plunger, and a spring pressed spot holder splined to the plunger.

6. A spotting machine, comprising a frame having an arched head and an anvil base, a face plate secured to the head of the frame, a sleeve mounted between the head and the face plate and capable of turning, a pin in the face plate entering an annular groove of the sleeve to prevent longitudinal movement of the sleeve, a set screw in the face

plate engaging the sleeve to prevent its turning, a plunger splined through the sleeve to be incapable of turning independent thereof, a spot holder splined to the plunger to be adjustable therewith, and a lever pivoted to the frame and having a swivel connection with the plunger.

7. In a spotting machine, a frame, a plunger slidably mounted in the frame and rotatably adjustable therein, a lever pivoted to the frame, a pin on the lever, an angular connecting plate having a slot in one portion thereof receiving the pin of the lever, and arms on the other portion thereof embracing a groove in the plunger to form a pivotal-swivel connection between the plunger and the lever.

8. A spotting machine, comprising a frame having an arched head, a lever pivotally mounted on the frame, set screws for limiting the movements of the lever, a face plate secured to the head of the frame, a sleeve loosely mounted between the head and the face plate, a pin on the face plate engaging an annular groove on the sleeve to prevent longitudinal movements of the sleeve, a set screw in the face plate engaging the sleeve to lock it in its adjustments, a plunger splined through the sleeve, the lower end of the plunger being tubular with a slot therein, a spring seated in the tubular end of the plunger, a tubular spot holder loosely mounted on the plunger beneath the head of the frame, a pin on the spot holder passing through the slot and engaging the spring and serving to spline the spot holder to the plunger, a collar on the lower end of the plunger, a plunger die fitting in the lower end of the plunger, a set screw passing through the collar and the wall of the plunger, and engaging the plunger die, a headed pin on the lever, and an angular plate having a curved slot at one portion receiving the pin and a pair of arms on the other portion embracing a groove in the upper end of the plunger to form a pivotal-swivel connection between the lever and the plunger.

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

HORATIO S. KEMP.

Witnesses:

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ANNA F. SCHMIDTBAUER.