No. 765,787. PATENTED JULY 26, 1904.

I. F. PECK.

MACHINE FOR SETTING LACING TIE HOOKS.

APPLICATION FILED SEPT. 25, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

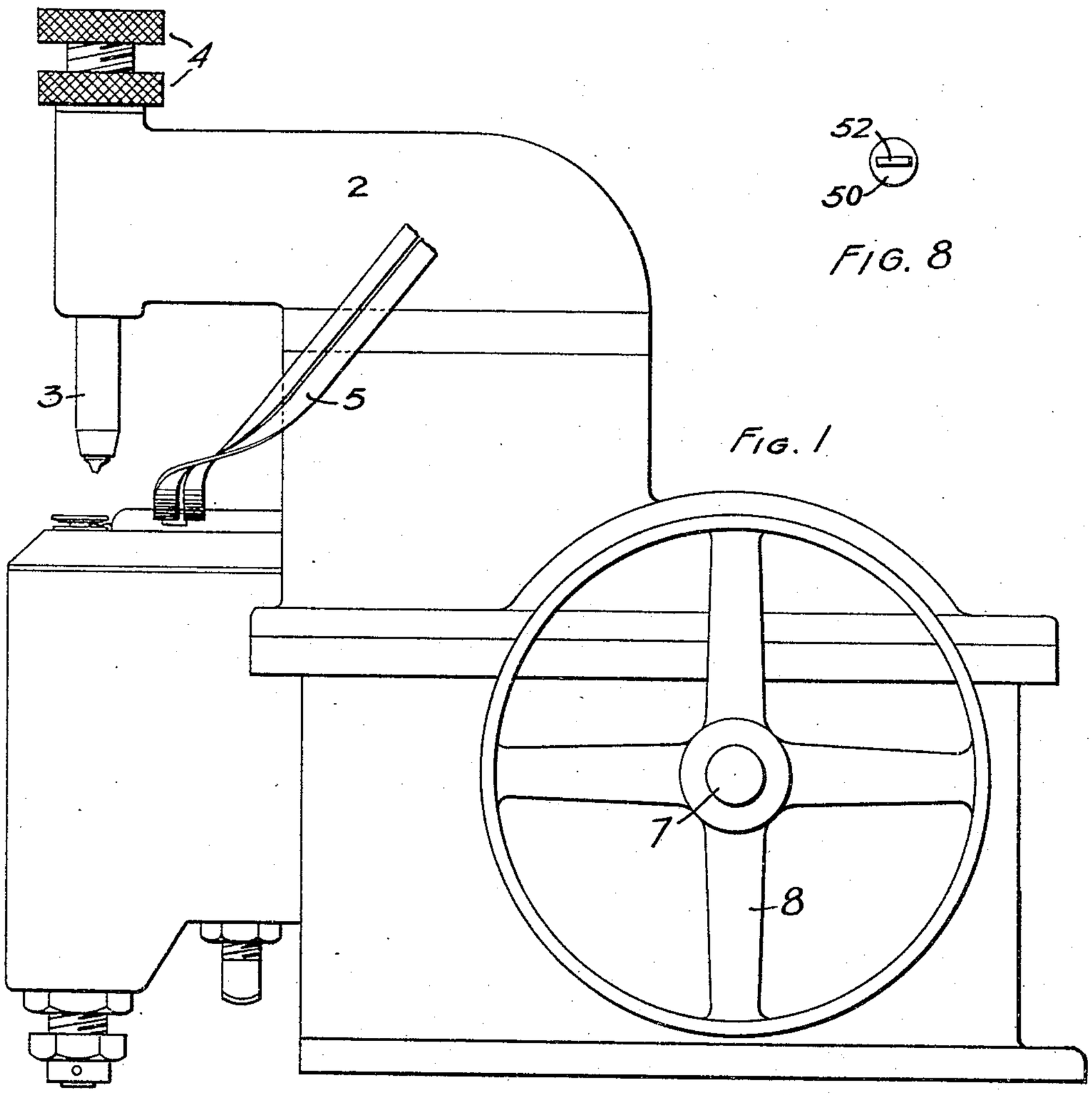

Fig. 1

Fig. 8

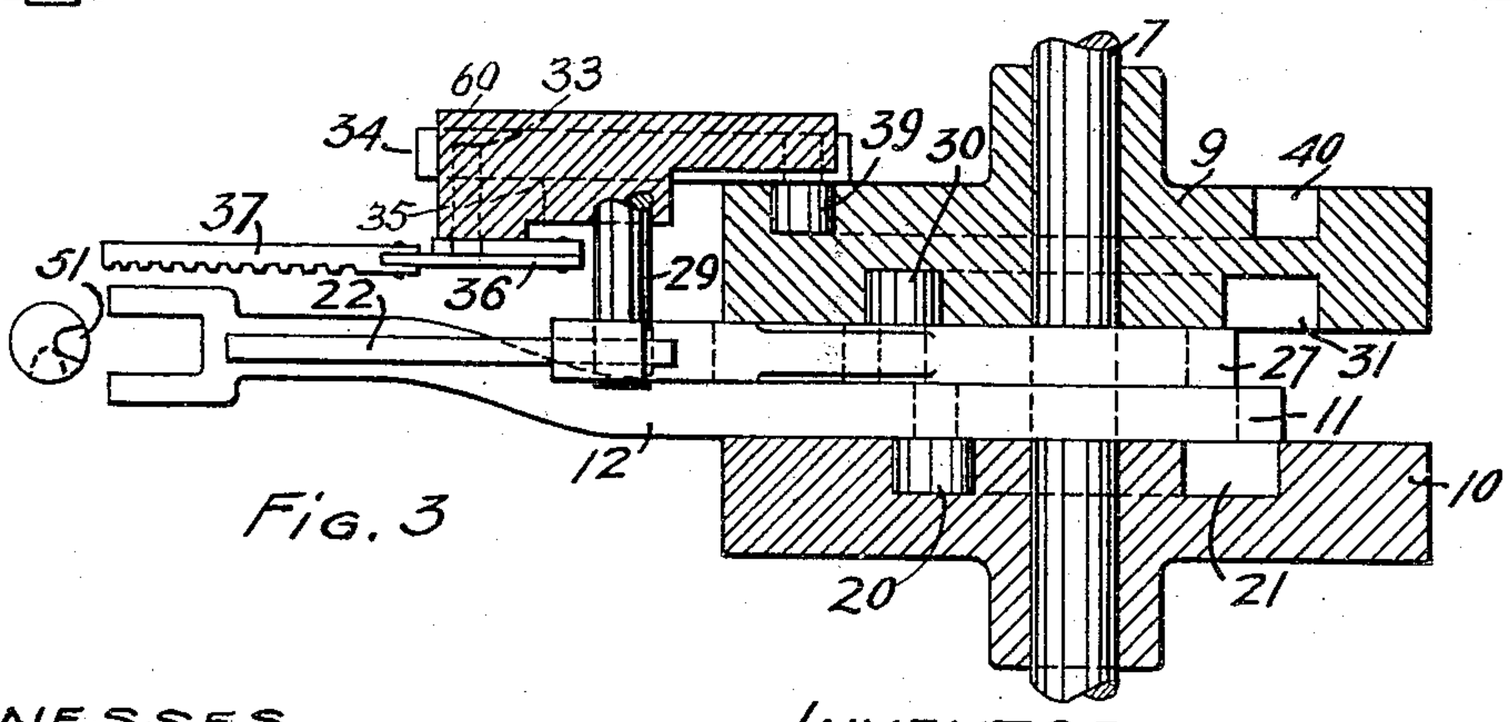

Fig. 3

WITNESSES

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NO MODEL. 2 SHEETS—SHEET 2.

FIG. 4

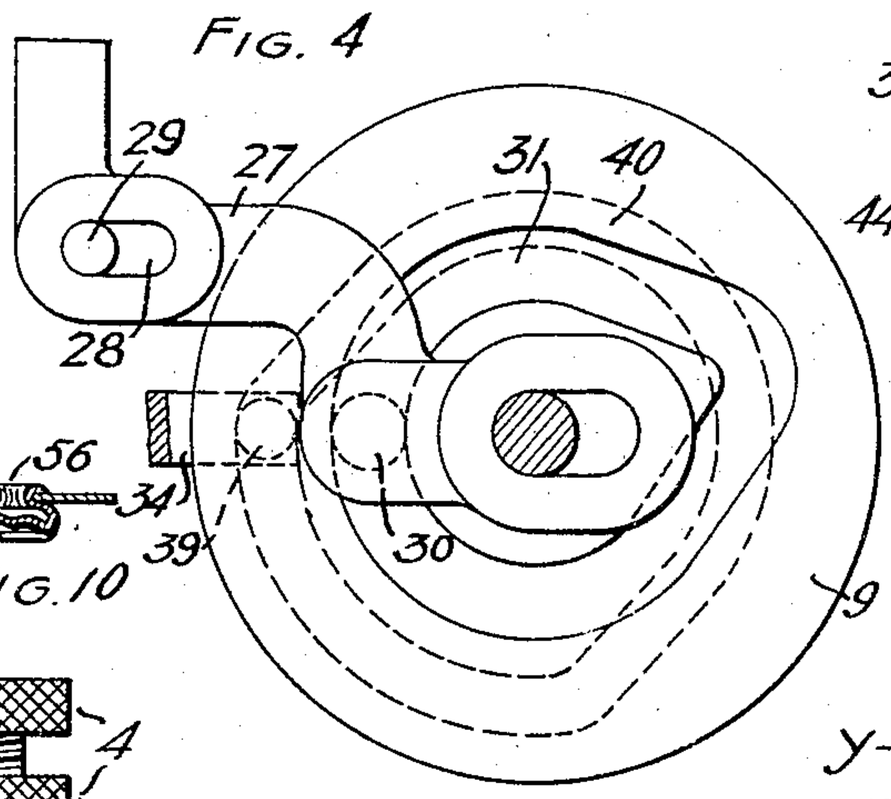

FIG. 9

FIG. 10

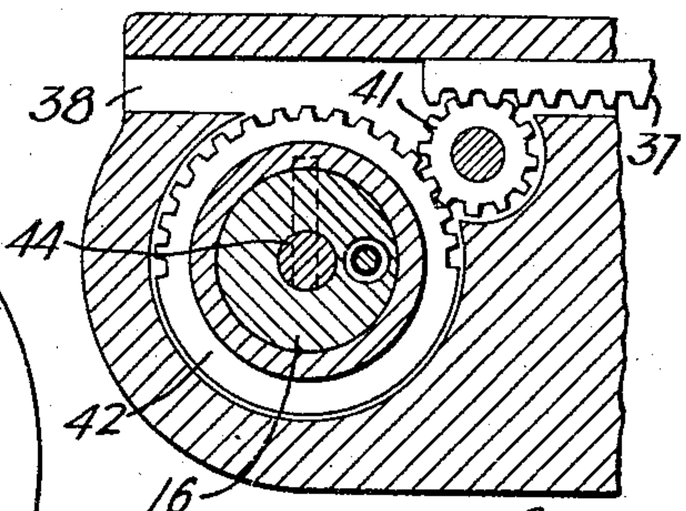

FIG. 6

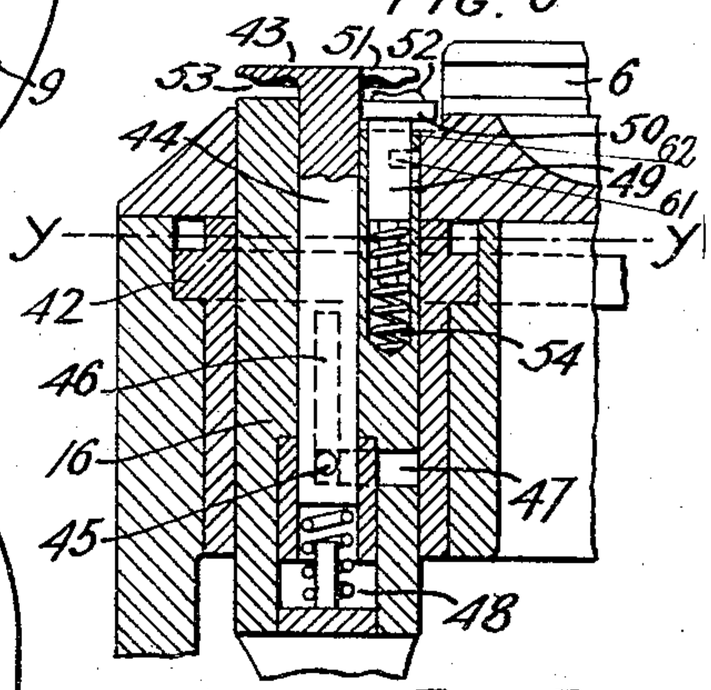

FIG. 5

FIG. 7

FIG. 2

WITNESSES

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No. 765,787. Patented July 26, 1904.

UNITED STATES PATENT OFFICE.

IRA F. PECK, OF CRANSTON, RHODE ISLAND.

MACHINE FOR SETTING LACING-TIE HOOKS.

SPECIFICATION forming part of Letters Patent No. 765,787, dated July 26, 1904.

Application filed September 25, 1903. Serial No. 174,673. (No model.)

To all whom it may concern:

Be it known that I, IRA F. PECK, a citizen of the United States, residing at Cranston, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Machines for Setting Lacing-Tie Hooks, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to machines for finishing and setting lacing-tie hooks. This hook comprises an eyeleted body terminating in a hook portion provided with a central integral tongue lying originally in the horizontal plane of the hook. To complete the hook, it is necessary to elevate and crimp the tongue. This operation is best performed during the setting of the hook in the leather or other material to which it is to be affixed.

The object of my invention is to perform these operations simultaneously in a cheap and efficacious manner; and to this end my invention consists in the novel mechanical structure and arrangement of parts hereinafter described, and illustrated in the accompanying drawings, wherein--

Figure 1 is a side elevation of a machine embodying my invention; Fig. 2, a vertical central section of a portion of the same; Fig. 3, a transverse section of the operative parts on line *x x* of Fig. 2; Fig. 4, a side view of one of the cam-disks; Fig. 5, a vertical central section of the swaging-tools and parts adjacent thereto; Fig. 6, a transverse section of the same on line *y y* of Fig. 5; Fig. 7, a transverse section of the channel on line *z z* of Fig. 2; Fig. 8, a plan view of the spring-pin; Fig. 9, a central vertical section of a lacing-tie hook before the operation of my machine, and Fig. 10 a similar view of the same subsequent to the swaging operation.

Like reference-numerals indicate like parts throughout the views.

Referring to the drawings, 1 is the body of my machine, carrying the usual yoke 2 and anvil 3, the latter adjustable by the nuts 4. The run 5 terminates adjacent a longitudinal channel or groove 6 in the forward extension of the machine-frame. In the rear of the frame is mounted the driving-shaft 7, with its pulley 8 thereon and carrying cam-disks 9 and 10. The shaft 7 traverses a slot 11 in a reciprocating bar 12. The latter is pivoted at its forward end to toggle-links 14 and 13, whose ends are respectively pivoted to the plunger 16 and to the pin 15, vertically adjustable in the frame by nuts 17 on a threaded sleeve 18. An adjusting-screw 19, mounted in the frame extension, supports the bar 12. The latter is reciprocated by a roller 20, traveling in a cam-channel 21 in disk 10.

The mechanism for advancing the hook fed from the run to the swaging-tools is as follows: A pusher 22 is mounted to reciprocate in a longitudinal channel 6 in the top of the frame extension. The pusher is slidably mounted in an upwardly-extending arm 23 and normally engages the latter by means of a pin 24 near its rear extremity. A lug 25 upon the pusher bears against a spring 26, seated in the forward portion of the arm 23. The latter rises from a bar 27, provided with a slot 28, through which passes a supporting-bar 29. The bar 27 is longitudinally reciprocated by the cam-roller 30, traveling in a cam-groove 31 in the disk 9.

The die-head is rotated by the following mechanism: A lever 32 is pivoted to the machine-frame, with its lower extremity engaging a pin 33, projecting from a slide 34 through a slot 35 in the guide-block 60, mounted on the machine-frame. The upper end of lever 32 is connected by a link 36 to a rack 37, mounted to slide in a channel 38 adjacent the plunger. To the slide is fixed a roller 39, registering with the cam-channel 40 in the outer face of the disk 9.

The rack 37 engages a pinion 41, which meshes with a segmentally-toothed sleeve 42, rotatably mounted in the frame, and through which the plunger 16 reciprocates vertically as a sliding fit. In this plunger is a vertical stem 44, provided with a swaging die-head 43, normally resting upon the top of the plunger. This head has a segmental opening 51 to facilitate the removal of the hook and an annular rib 53 upon its under face. The stem 44 is reciprocally rotated by the sleeve 42 by the pin 45, projecting from the stem, through a radial slot 47 in the plunger 16, to the verti-

cal keyway 46 in the sleeve. Thus reciprocation of the head 42 is attained without effecting the plunger. Mounted in the plunger beneath the stem 44 and vertically bearing upon the same is a spring 48, which normally retains the head 43 elevated slightly above the plunger. In a pocket in the upper part of the plunger is a pin 49, with an enlarged head 50 and vertically supported by a spring 54. The upper face of the head 50 is provided with a diametrically-disposed elevation or rib 52, with a transverse depression adapted to register with the annular rib 53 upon the die-head. The elevation 52 is in vertical alinement with and below the path of the hook-tongue 55 as the hook leaves the channel 6. The upward travel of pin 49 is limited by its stop-pin 61 in the frame, and its downward travel is limited by its overhanging head 50, which is normally elevated and contacts with a shoulder 62 in the frame. The interaction of the ribs 52 and 53 interact to shape and elevate the hook-tongue.

The operation of my machine is as follows: A hook such as shown in Figs. 9 and 10 descends the run 5 and enters the channel 6 in the position shown in Fig. 7. It is then advanced by the pusher 22 and engages the uncut portion of the die-head 43 (shown by dotted lines) which at this instant is in alinement with the channel 6. The insertion of the hook slightly depresses the pin 49, which furnishes frictional engagement pending the swaging operation. The plunger is then elevated by the reciprocating bar 12 and its connections, thereby forcing the eyeleted portion of the hook 56 against the anvil 3, which swages the eyelet. This movement also elevates and crimps the tongue 55. The plunger then descends, while the die-head returns to the position shown in full lines in Fig. 2.

I claim—

1. In a machine of the class described, the combination with a plunger of a die vertically slidable in the plunger, a head upon the die provided with a projection upon its under surface, a spring-actuated pin also vertically mounted in the plunger, and a head upon the pin provided with an irregular face, and normally registering with the projection upon the die-head.

2. In a machine of the class described, the combination with a plunger of a die vertically slidable in the plunger, a head upon the die provided with a projection upon its under surface, a pin also vertically mounted in the plunger, a head upon the pin adapted to register with the projection upon the die-head, and means in the plunger for normally holding the die-head elevated above the pin-head.

3. In a machine of the class described, the combination with a plunger of a die vertically slidable in the plunger, a head upon the die provided with a projection upon its under surface, a slidable pin also vertically mounted in the plunger, a head upon the pin adapted to register with the projection upon the die-head, and means for circularly reciprocating the die-head.

In testimony whereof I have affixed my signature in presence of two witnesses.

IRA F. PECK.

Witnesses:
HORATIO E. BELLOWS,
WILLIAM E. BROWN.