L. A. HAWTHORNE.

MACHINE FOR IDENTIFYING STRUCTURAL BEAMS.

APPLICATION FILED AUG. 28, 1914.

1,241,261.

Patented Sept. 25, 1917.

6 SHEETS—SHEET 1.

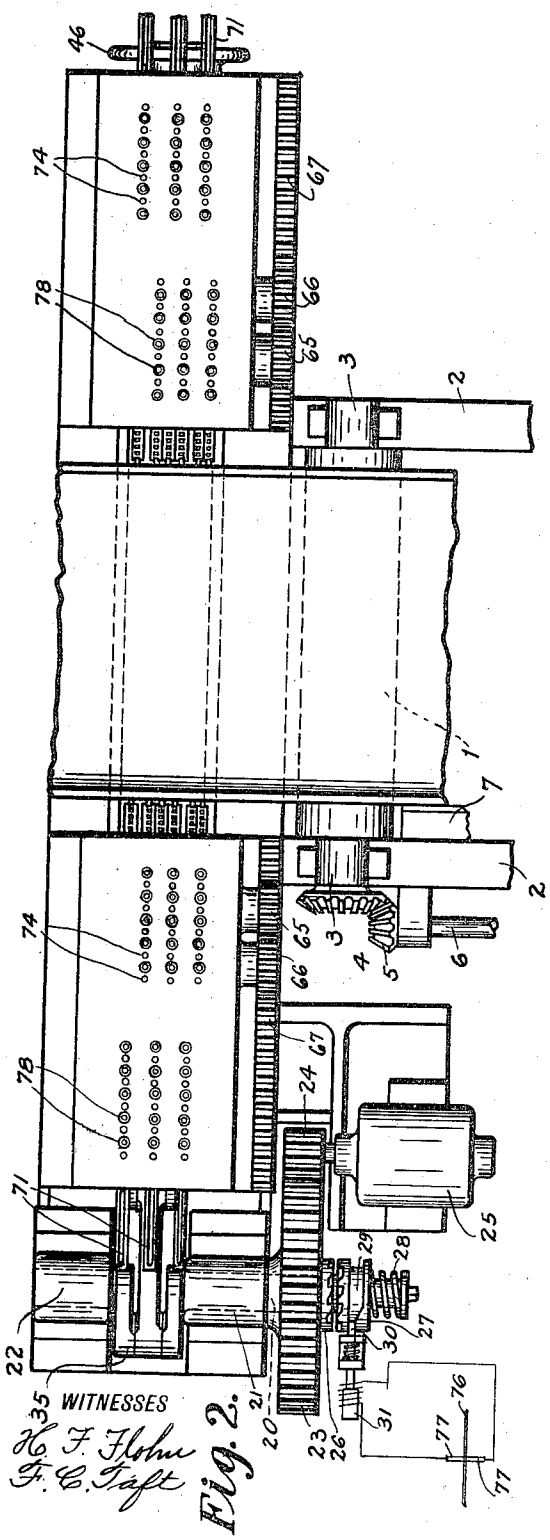


Fig. 2.

WITNESSES

H. F. Hohn

F. C. Taft

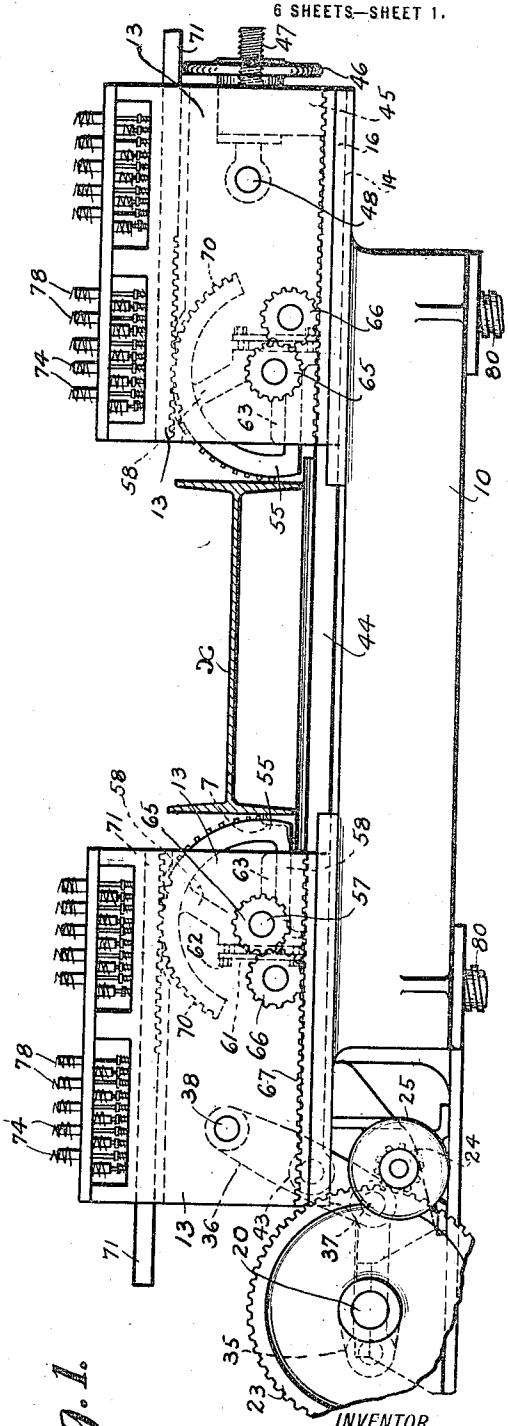


Fig. 1.

INVENTOR

L. A. Hawthorne

BY

John D Morgan

ATTORNEYS

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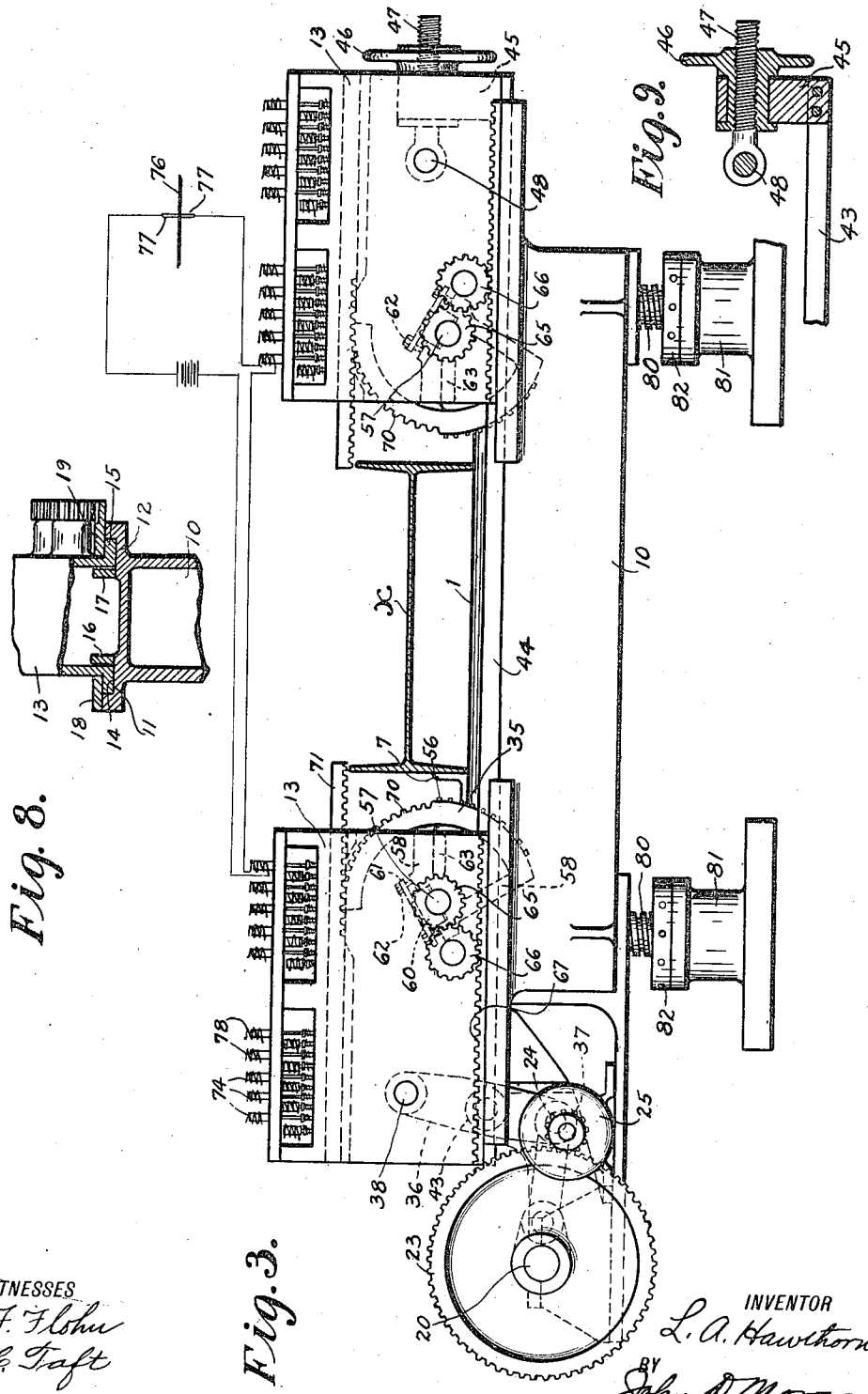


Fig. 8.

Fig. 9.

Fig. 3.

WITNESSES

K. F. Flohr

F. C. Taft

INVENTOR

L. A. Hawthorne

BY

John D. Morgan

ATTORNEYS

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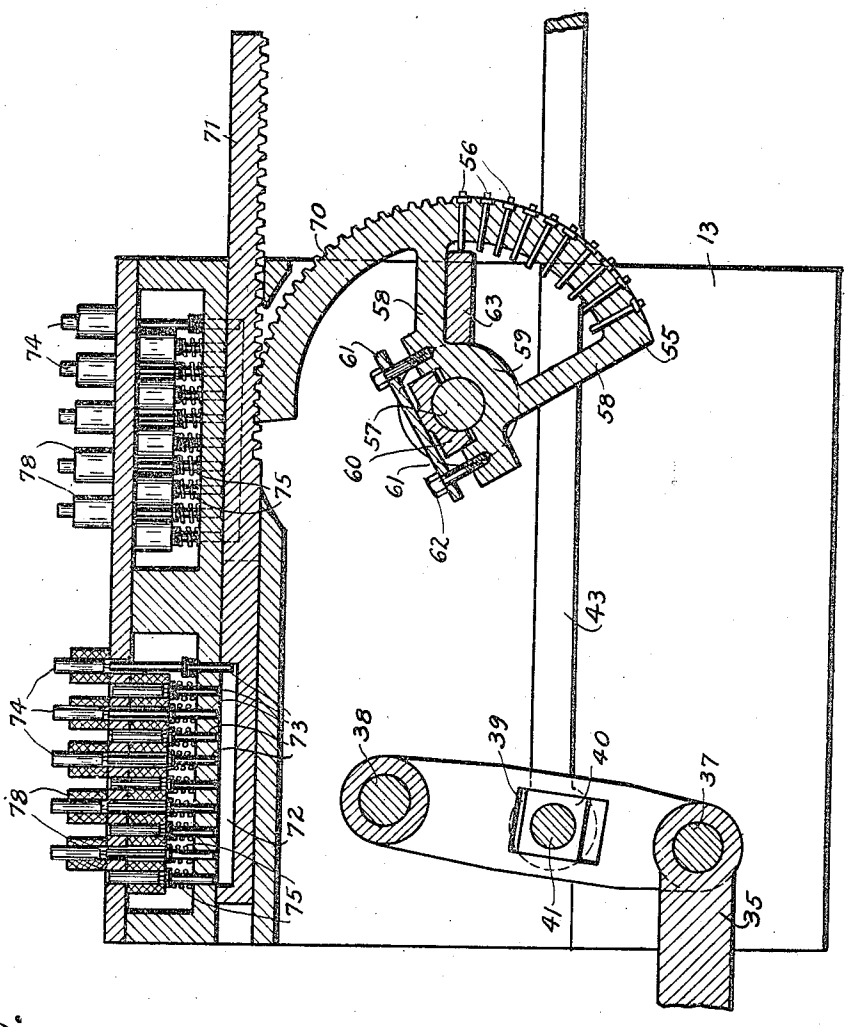


Fig. 4.

WITNESSES

H. F. Flohr

F. C. Foft

INVENTOR

L. A. Hawthorne

BY

John D. Morgan

ATTORNEY

L. A. HAWTHORNE.

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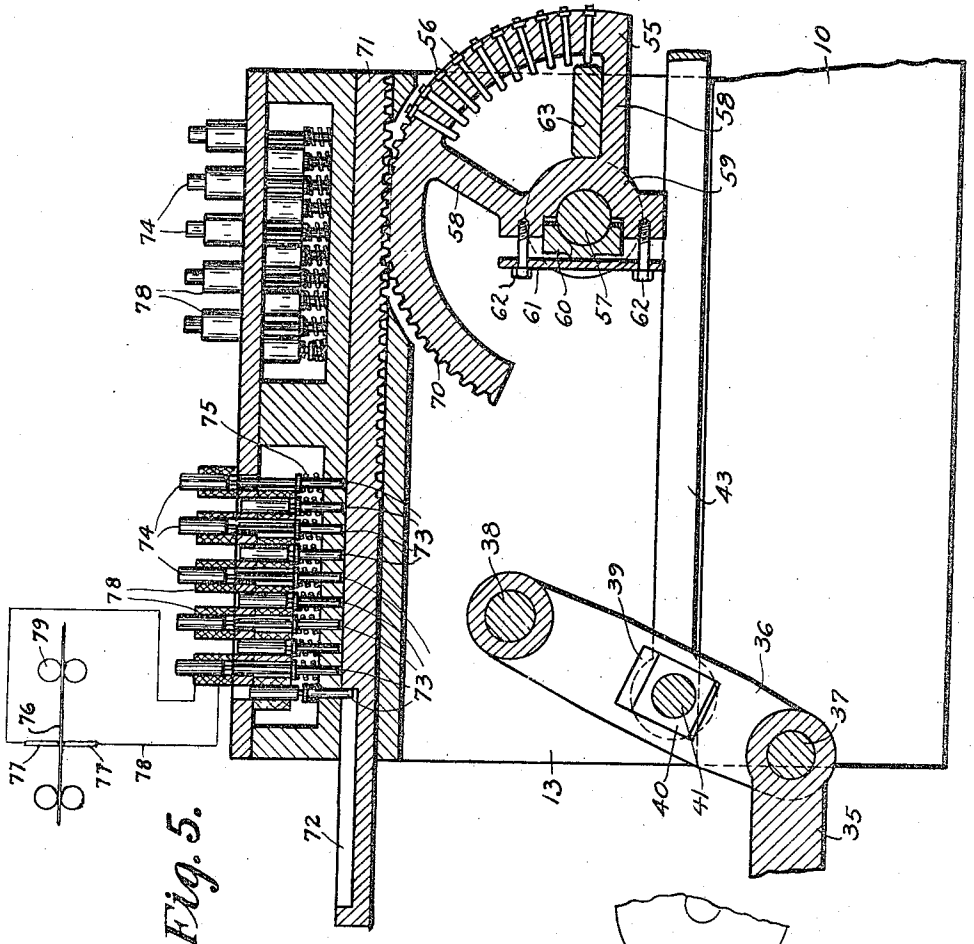


Fig. 5.

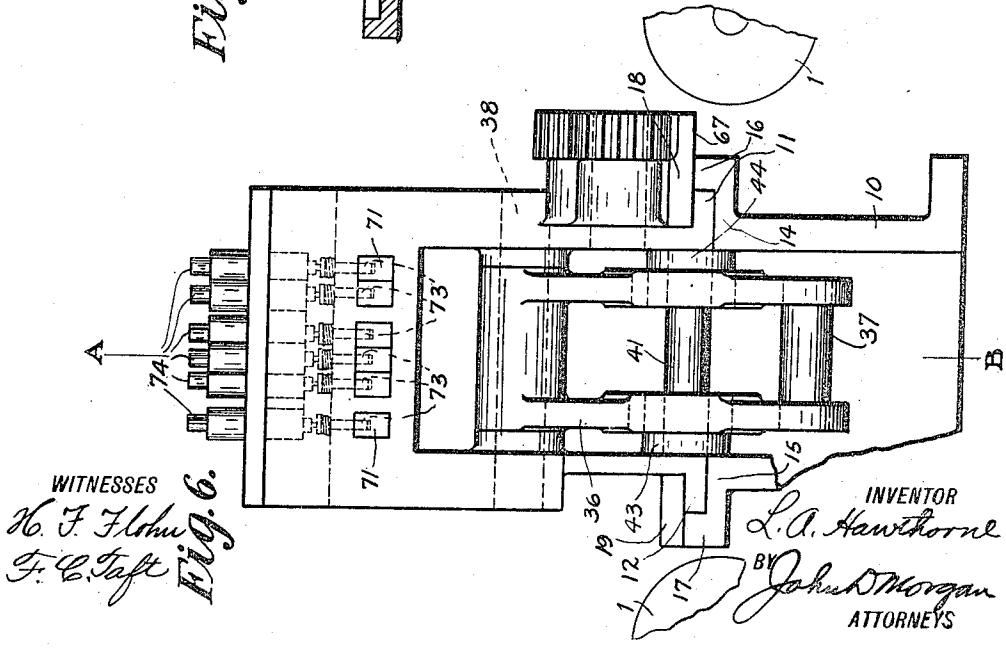


Fig. 6.

WITNESSES

H. F. Flohr

F. C. Taft

INVENTOR

L. A. Hawthorne

BY John D. Morgan

ATTORNEYS

L. A. HAWTHORNE.

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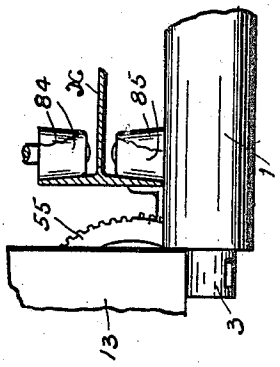


Fig. 10.

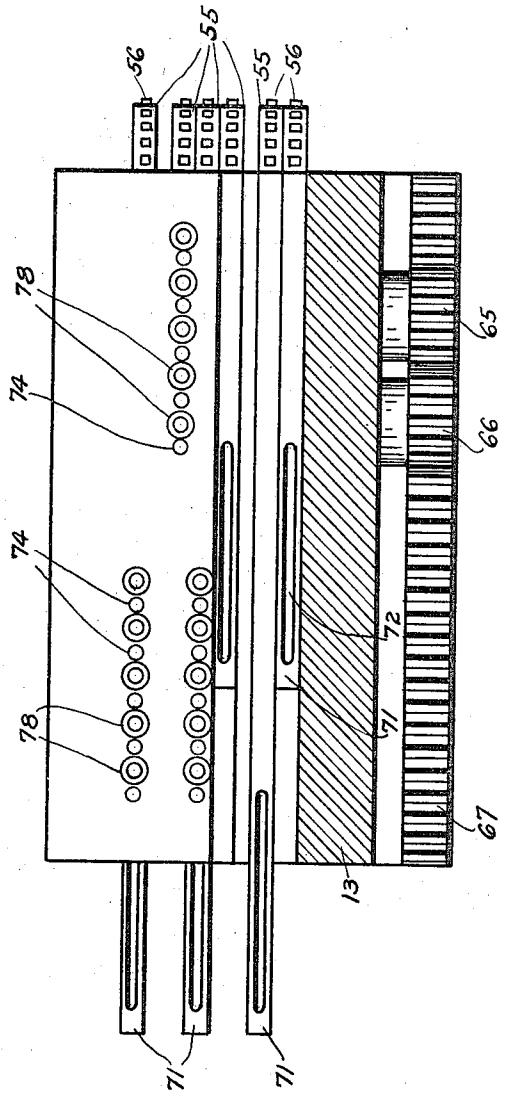


Fig. 7.

WITNESSES

H. F. Flohr

F. C. Taft

INVENTOR

L. A. Hawthorne

BY

John D. Morgan

ATTORNEY

L. A. HAWTHORNE.

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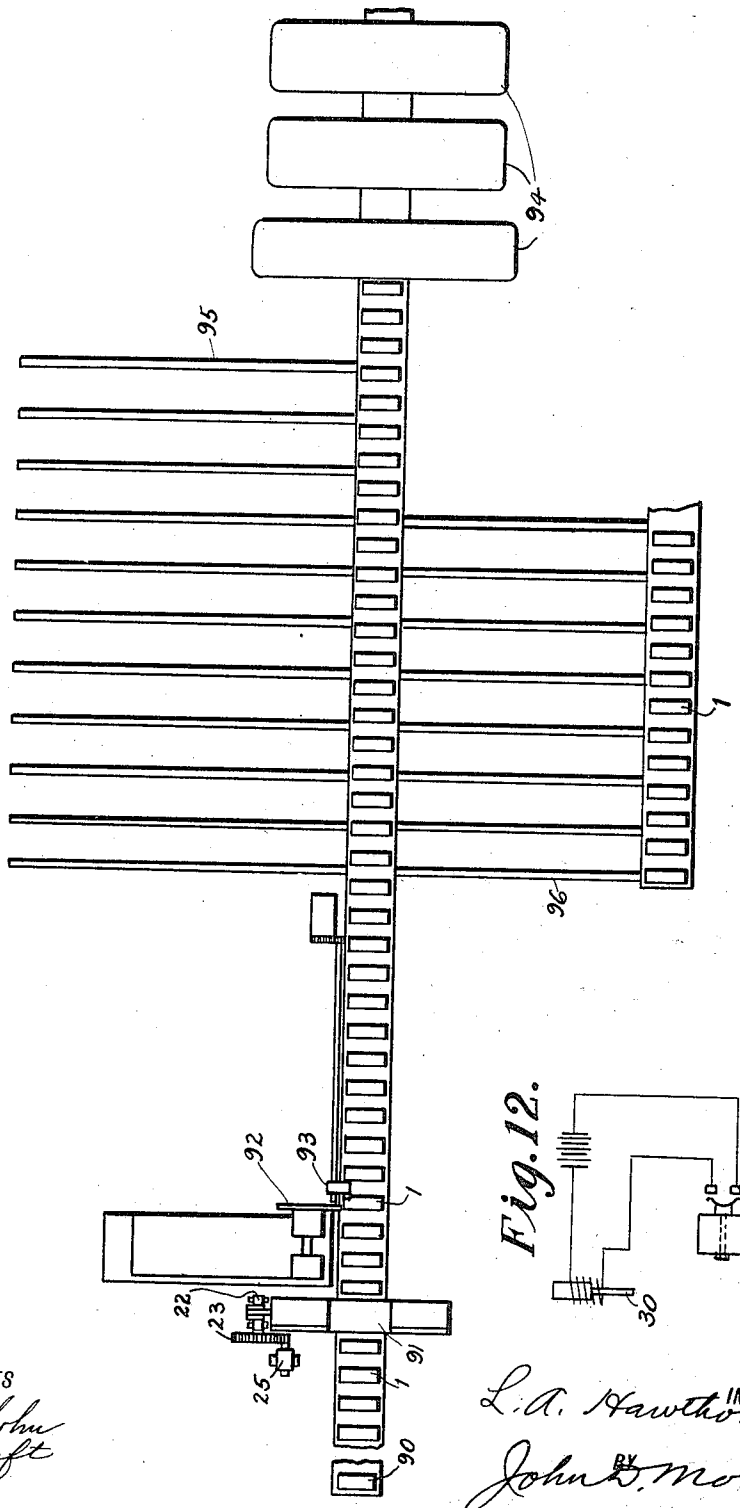


Fig. 11.

Fig. 12.

WITNESSES

H. F. Flohr

F. C. Taft

L. A. Hawthorne INVENTOR

BY John D. Morgan

ATTORNEY

UNITED STATES PATENT OFFICE.

LOUIS A. HAWTHORNE, OF NEWARK, NEW JERSEY, ASSIGNOR TO STEEL UTILITIES, INCORPORATED, A CORPORATION OF NEW YORK.

MACHINE FOR IDENTIFYING STRUCTURAL BEAMS.

1,241,261. Specification of Letters Patent. Patented Sept. 25, 1917.

Application filed August 28, 1914. Serial No. 859,016.

To all whom it may concern:

Be it known that I, LOUIS A. HAWTHORNE, a citizen of the United States, and resident of Newark, in the county of Essex, State of New Jersey, have invented new and useful Improvements in Machines for Identifying Structural Beams, of which the following is a specification.

The invention relates to machines for placing identifying marks upon structural shapes or beams for use in fabrication, that is such marks as will correlate it with the building plans and insure the various shapes being properly placed in the building.

Objects of the invention are to provide such a machine adapted to place permanent marks of identification in structural shapes; to provide a machine having a keyboard or equivalent means for arranging or setting any desired combination of figures or letters for impressment into the beams; to provide for automatic setting or selection of the desired group of marking or identifying figures and letters; to provide a machine adapted to stamp or sink the identifying marks into the metal of the shapes, so that they will not be obliterated by painting or other subsequent operations upon the shape; to provide a machine for simultaneously selecting and impressing a desired identifying mark or marks upon different parts of the shape; to provide for rapid, expeditious, and automatic marking of the shapes; and to provide a mechanism or machine adapted to coöperate with other machines for operating upon the shapes, and especially a mechanism or machine adapted to coöperate with rolling mill machines or machines for receiving and operating upon the shapes as delivered immediately from the mill. These and other objects of invention will in part be obvious and in part will appear hereinafter.

The invention consists of the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description serve to explain the principles thereof.

Of the drawings:

Figure 1 is a front elevation of a machine constructed in accordance with the principles of the invention, and showing the identifying marks being impressed upon the beam;

Fig. 2 is a top plan corresponding to Fig. 1;

Fig. 3 is a view corresponding to Fig. 1 but showing the impressing means retracted and the beam feeding forward;

Fig. 4 is a vertical transverse section, on an enlarged scale, through the center of the upper left hand part of Fig. 3 and substantially on the line A—B of Fig. 6;

Fig. 5 is a similar view to Fig. 4, but showing the mechanism in a different position;

Fig. 6 is a fragmentary elevation looking at Figs. 4 and 5 from the left;

Fig. 7 is a top plan corresponding to Fig. 6 but showing the lower part of the figure with the upper portions removed;

Fig. 8 is a fragmentary detail, with parts in section showing the guides for the slidable casing or carriage and the rack and pinion movement for the settable character bearing means;

Fig. 9 is a fragmentary detail partly in section of the adjustment between the carriages;

Fig. 10 is a fragmentary elevation of a single identifying device marking the beam at one place only;

Fig. 11 is a view, largely diagrammatic, of the shape marking machine coöperating with other machines and instrumentalities; and

Fig. 12 is a fragmentary, diagrammatic detail of the arrangement for starting the marking machine by the stopping of the beam.

Referring to the accompanying drawings, illustrating by way of example one embodiment of the invention, the same is shown operating upon an I-beam x. The beam is shown running through the machine by suitable means, such as a series of rollers 1 mounted in journal bearings 3 upon longitudinally and horizontally arranged frames 2. The rollers 1 may be driven either continuously or intermittently by suitable means, and a por-

tion of the driving means is shown comprising beveled gears 4 upon the shafts of the rollers 1, said gears meshing with beveled gears 5 fixed on driving shafts 6. A guide rail 7 may be provided extending along the path of travel of the beam, the flange of the beam being alined with the guide rail.

In accordance with certain features of the invention, duplicated or identical identifying marks are simultaneously impressed upon different parts of the shape, and as embodied, two such impressing means are arranged to operate upon directly opposite points in the flanges of the I-beam, although so far as concerns many features of the invention, a single marking device could be employed and other parts of the beam be impressed thereby.

In said embodied form, a bed or frame 10 is arranged transversely to the length or run of the series of rollers 1, the duplicate and simultaneously operating marking mechanisms being mounted upon said bed or frame. Upon the upper portion of the bed 10 are formed guideways 11 and 12 extending perpendicularly to the path of travel of the shape x. Mounted on the guideways 11 and 12 are carriages or carriers 13, which carriages support the impressing and marking means, and according to one feature of the invention, also carry the impressing or marking means to impression. The carriages or carriers 13 are arranged on both sides of the machine and preferably are moved to impression and away therefrom substantially simultaneously. The carriages 13 are provided with feet or bearings 14 and 15 sliding along the guideways 11 and 12 formed in the top of the bed 10. Vertical guides 16 and 17 and horizontal retaining strips 18 and 19 serve to keep the feet of the casing in place as they slide along the guides.

The embodied form of means for moving the impressing devices to and from impression are common for both carriages 13, and comprise a shaft 20, journaled at 21 and 22 upon the bed or frame 10. Said shaft 20 is driven by a gear wheel 23, meshing with a pinion 24, said pinion 24 being fixed upon the shaft of a motor 25.

Means are provided for calling the impression mechanism into action, at a proper or desired time and for giving a single operation or actuation thereof. As embodied, the gear 23 is sleeved upon the shaft 20 loose to turn thereon. Fixed to gear 23 is a clutch member 26. A corresponding clutch member 27 is mounted to turn with shaft 20, but being slidable therealong. Clutch member 27 is impelled toward clutch member 26 by a suitable spring 28. Formed in the clutch member 27 is a cam groove 29 into which projects a finger 30. When the finger 30 is retracted, the spring 28 causes clutch member 27 to engage with clutch member 26, thereby rotating shaft 20 from motor 25. The pin 30 returning into cam groove 29, cams clutch member 27 out of engagement with clutch member 26 against the action of spring 28. The pin 30 is actuated in a suitable manner, and may be spring pressed in one direction, as into the cam groove, and may be retracted by suitable means such as a solenoid 31. The solenoid may be controlled by a perforated distance record sheet or by the stopping of the shape in position to be marked, or it might be controlled by a hand switch if desired. The mechanism is thus adapted to give a single rotation of the shaft 20, which in the embodied form, will carry both marking mechanisms forward against the beam to mark or impress it and then retract or return the marking mechanisms ready for the next operation.

The embodied form of means for further actuating the casings or carriers for the impressing devices, comprises crank 35 formed in shaft 20. Said crank 35 is pivotally connected to a wrist pin 37 of a lever 36. The lever 36 at its upper end is carried upon a shaft 38 extending transversely between the interior side walls of the left hand carriage 13 (see Figs. 1, 3, 4 and 5). Intermediately in the arms of the lever 36 are formed slots 39 in which are reciprocably carried blocks 40. Rotatably mounted in the blocks 40 is a transverse shaft 41. Pivotally carried on the exterior end of the shaft 41 are two rods 43 and 44, said rods 43 and 44 extending transversely across the machine to the right hand carrier 13. Carried by the right hand end of the rods 43 and 44 is a block 45 (see Figs. 1 and 9) and rotatably mounted in the block 45 is a collared hand wheel 46. The hand wheel is internally apertured and threaded to take a screw-threaded rod 47. The other end of rod 47 is pivotally mounted upon a shaft 48 which shaft is carried transversely in the side plates or walls of the right hand carriage 13.

The marking or impressing means comprise a plurality of character-bearing members or carriers movable to present different characters in position for impression upon the beam or other shape, and in accordance with certain features of the invention, said carriers are independently or relatively movable to form, or to be composed, with the other carriers into any desired different combinations of marking or identifying characters. In the embodied form of such means, a plurality of character bearers or carriers 55 are provided of arcuate form, each of said carriers or bearers having a series of characters 56 mounted therein, preferably in a row circumferentially along the carrier. Said carriers are mounted friction tight upon a shaft 57 rotatably mounted trans-

versely in the side walls of the carriages 13. In the embodied form of frictional mounting, the arcuate members 55 are supported by arms 58, which arms have a half-hub 59 bearing upon the shaft 57. The other half-hub 60 is separate and is pressed against shaft 57 by a spring plate 61, held in position by bolts 62. Thus the desired degree of tension or friction between the hub 59 and shaft 57 may be effected. A suitable stop may be provided such as a transverse bar or plate 63, which is directly back of the impression point or line. The characters are loosely mounted in their carriers 55. The rearwardly extending stem of the character to be impressed bears against the stop bar 63 (see Fig. 5) and thus the thrust or strain from the impression into the beam of the entire line of composed characters on the various members 55 is taken up directly by the carriages 13 through said bars 63. The bars 63 also may coöperate with the arms 58 to limit the travel of the character bearing member in both directions.

Mounted upon the shaft 57 is a pinion 65, said pinion 65 meshing with an idler pinion 66. The pinion 66 in turn meshes with a straight, horizontal toothed rack 67 carried or fixed to the bed plate 10. Thus as the carriages 13 travel forward, the arcuate character-bearing members 55 may be moved to the desired position to present at the place of impression the characters selected for impression upon the shape. When the carriage 13 moves in the opposite direction, the character-bearing members move back into position to reset.

A sufficient number of the character-bearing members are arranged side by side upon their friction tight mountings upon the shaft 57, each of said character-bearing members having means coöperating therewith for selecting any character thereon for impressment upon the shape in line or combination with any selected or desired character upon each of the other character bearing members, that is, any character upon any arcuate member 55 is composable into a line or group with any character upon any other arcuate member 55 to constitute the desired identifying mark.

The embodied form of means for selectively positioning the various type carriers with respect to each other comprises an extension upon each of the carriers 55, said extension having an arcuate series of teeth 70. Mounted in the upper part of the carriage 13 is a series of longitudinally slidable bars 71, each of said bars having a series of teeth engaging respectively with the arcuate series of teeth 70 upon the corresponding type carrier 55.

Means are provided for controlling the movement of the slidable bars 71, and in the embodied form of such means, each of the bars 71 is provided with a groove or slot 72. Arranged above each of the bars 71 is a series of pins 73 selectively projectable into the groove or slot 72 to limit or determine the movement of the bar 71 and thus to control the position of the type carriers 55 to present a desired type or character for impression.

In accordance with one feature of the invention, the types or characters are selected or composed simultaneously upon both carriages, and as embodied this is effected by an automatically operating perforated sheet, and in said embodied form of such means, solenoids 74 are connected with the pins 73, the solenoid 74 and springs 75 coöperating together to project the respective pins into the corresponding slot 72 and to retract them therefrom. The perforated strip is indicated generally by reference numeral 76 and the coöperating contacts 77 and the circuit to the solenoid by 78, and the various solenoids may all be similarly equipped. The sheet 76 may be fed forward at the proper time by feeding means 79. The set pin 73 may be kept in projected position as long as desired by leaving the current on after the contact is made and the circuit completed. The corresponding solenoids on both carriages may be wired to be simultaneously operated from a single sheet 76. If desired the stop 93 for the beam may have a switch 97 closed by the beam or shape striking the stop, the closing of said switch energizing the solenoid operating the pin 30. The switch 97 is closed momentarily only so as to cause but a single rotation of shaft 20.

The manner of operation of the mechanism just described is substantially as follows:—

The pin 30 being retracted either manually or by the action of the solenoid operated by the perforated sheet or distance record device, or by the stop, permits one revolution of the shaft 20. The lever 36 is thus actuated, and the carriages 13 on the right and left respectively are moved forward bringing the type carriers 55 into contact with the beam flanges as shown in Fig. 3.

In setting or composing a desired mark, the proper keys or pins 73 in each series are depressed or projected into the groove or slot 72 corresponding thereto, thus permitting the corresponding bars 71 to slide for the distance of the projected pin from the end of the corresponding groove or slot 72. As the carriage 13 moves forward, the pinion 66, rolling on the rack 67, rotates shaft 57 through pinion 65. The corresponding type carrier 55 rotates to the left (referring to Figs. 4 and 5) until the projected pin encounters the end of the slot. The type carrier 55 is thus brought to rest, and the shaft 57 then slips within the hub pieces 59, 60 during any further movement of car-

riages 13. During the impression the rods 43 and 44 are in tension between the carriages 13 and the beam is held firmly against guide 7. After the impressment of the shape, the carriages 13 are retracted and the pinion 66 rolling in the opposite direction along the rack bar 67 will rotate the type carriers 55 back to initial position against stop 63 as shown in Fig. 4.

With various kinds or sizes of shapes, and especially if they are to be stamped at relatively low temperatures, it may be desirable to stamp them in line with a cross connecting piece, such as the web of an I-beam when both flanges are stamped. In the embodied form of such means the bed 10 is mounted upon screw rods 80, said screw rods being mounted within pedestals 81 and provided with screw disks 82. The machine may thus be raised or lowered relatively to the level of the rollers 1 upon which the beam is fed in and the stamping may be located vertically or transversely at the desired point, either at each end of the web of the beam or otherwise.

In accordance with one feature of the invention the beam may be stamped upon one part only, and in Fig. 10 of the drawings parts of rollers 84 and 85 are shown as a bearing for the inside of the flange of the beam x which is stamped by a single stamping or impressing mechanism, the opposed or coöperating stamping or impressing mechanism in such case being omitted.

In Fig. 11 of the drawings the identifying machine is shown coöperating with other mechanisms for operating upon the shapes. The last rolls of the rolling mill are indicated by reference numeral 90, the stamping or identifying machine being indicated by 91. At 92 is a hot saw, and a suitable gage or length determining device 93 is also provided. At 94 a plurality of punching machines for punching rivet holes in the shape are provided, and at the side are shown cooling tables 95 and 96.

From all the foregoing it will be understood that a machine has been provided embodying the objects and advantages herein set forth, together with other objects and advantages. It will be further understood that changes may be made from the illustrated and described mechanism without departing from the principles of the invention and without sacrificing its chief advantages.

I claim—

1. A machine for placing identifying marks upon structural shapes including in combination means for positioning the shape, selectively settable means for composing a series of identifying characters, and means for simultaneously impressing the identifying characters upon the shape.

2. A machine for placing identifying marks upon structural shapes including in combination means for traveling a shape along a pathway, selectively settable means for composing a series of identifying characters located alongside the path of travel of the shape, and means for impressing the series of identifying characters upon the shape.

3. A machine for placing identifying marks upon structural shapes including in combination means for traveling a shape along a pathway, selectively settable means for composing a series of identifying characters located alongside the path of travel of the shape, and means for simultaneously sinking said series of characters into the metal of the shape.

4. A machine for placing identifying marks upon structural shapes including in combination means for positioning the shape, means having identifying characters thereon, means for moving said character-bearing means to and impressing the characters upon the shape, and means moving to the opposite side of the shape and pressing thereagainst during the impressment of the character.

5. A machine for placing identifying marks upon structural shapes including in combination means for traveling a shape longitudinally along a pathway, means bearing identifying characters adjacent said pathway, and means for moving said character-bearing means transversely to the direction of travel of the shape and for impressing said characters upon the shape, and means moving transversely to the direction of travel of the shape and pressing thereagainst in opposition to said character impression means during the impressment of the characters upon the shape.

6. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape, means for impressing identifying characters into the shape, a pressure device on the opposite side of said shape from said character impressing means, and connections between them in tension during the impression of the characters upon the beam.

7. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape, character bearing means, a pressure device on the opposite side of the shape, means for moving said character bearing means and pressure device into contact with the shape and for maintaining tension between them during the pressing of the characters into the shape.

8. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape, character-bearing means on one side of the shape, character-bearing means on the opposite side of the shape, means selectively

settable to compose a plurality of said characters, and means for impressing the composed characters into both sides of the shape.

9. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape, character-bearing means on one side of the shape, character-bearing means on the opposite side of the shape, and directly opposite said first-mentioned character-bearing means, means selectively settable to compose a plurality of said characters, and means for moving both said character-bearing means into engagement with the shape and for sinking said composed characters into the metal of the shape and for maintaining tension therebetween during the sinking of the characters into the shape.

10. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape, character-bearing means on one side of the shape, character-bearing means on the opposite side of the shape, and means for simultaneously moving both said character bearing means into engagement with the shape.

11. A machine for placing identifying marks upon structural shapes, including in combination means for positioning a shape, character bearing means on one side of the shape, character-bearing means on the opposite side of the shape and opposite said first-mentioned character-bearing means, means selectively settable to compose a plurality of said characters, and means for simultaneously moving both said character-bearing means into engagement with the shape and for simultaneously sinking said composed characters into the metal of the shape.

12. A machine for placing identifying marks upon structural shapes including in combination means for traveling a shape longitudinally along a pathway, character-bearing means at one side of said pathway, character-bearing means on the opposite side of said pathway, selectively settable means for composing a plurality of characters in duplicate in both said character-bearing means, and means for simultaneously moving both said character-bearing means into engagement with the shape to mark the shape on both sides with the composed characters.

13. A machine for placing identifying marks upon structural shapes including in combination means for traveling a shape along a pathway, a group of composable character bearing devices located beside said pathway, means for stopping the shape in position to be marked, selectively settable means for composing a series of identifying characters, and means for impressing the composed series of identifying characters upon the shape.

14. A machine for placing identifying marks upon structural shapes including in combination means for traveling a shape longitudinally along a pathway, means for stopping the shape in position to be marked, means bearing identifying characters adjacent said pathway, and means for moving said character bearing means transversely to the direction of travel of the shape, and for impressing said characters upon the shape, and means moving transversely to the direction of travel of the shape, and pressing thereagainst in opposition to said character impression means during the impressment of the characters upon the shape.

15. A machine for placing identifying marks upon structural shapes including means for traveling a shape longitudinally along a pathway, means for stopping the shape in position to be marked, character bearing means adjacent to said pathway, a pressure device adjacent to said pathway on the opposite side, means for moving said character-bearing means and pressure device into engagement with the shape and for maintaining tension between them during the pressing of the characters into the shape.

16. A machine for placing identifying marks upon structural shapes including in combination means for traveling a shape longitudinally along a pathway, means for stopping the shape in position to be marked, character bearing means at one side of said pathway, character bearing means on the opposite side of said pathway, means for moving both said character-bearing means into engagement with the shape to mark the shape with the characters.

17. A machine for placing identifying marks upon structural shapes including in combination means for traveling a shape longitudinally along a pathway, means for stopping the shape in position to be marked, character bearing means at one side of said pathway, character bearing means on the opposite side of said pathway, means for moving both said character bearing means into engagement with the shape to mark the shape with the characters and for maintaining tension therebetween during engagement with the shape.

18. A machine for placing identifying marks upon structural shapes including in combination means for traveling a shape longitudinally along a pathway, means for stopping the shape in position to be marked, character bearing means at one side of said pathway, character bearing means on the opposite side of said pathway, selectively settable means for composing a group of characters on said character bearing means, means for simultaneously moving both said character bearing means into engagement with the shape and for simultaneously sinking the composed characters into the shape.

19. A machine for placing identifying marks upon structural shapes including in combination means for positioning the shape, means at one side of the shape having a series of composable characters, means on the other side of the shape having a series of composable characters, means for composing identical characters on both of said character bearing means, and means for impressing said composed characters upon the shape.

20. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape longitudinally along a pathway, means at one side of the shape having a series of composable characters, means on the other side of the shape having a series of composable characters, means selectively settable for composing identical characters on both of said character bearing means, and means for impressing said composed characters upon the shape.

21. A machine for placing identifying marks upon structural shapes including in combination means for positioning the shape, means at one side of the shape having a series of composable characters, means on the other side of the shape having a series of composable characters, means including a perforate record sheet for composing identical characters on both of said character bearing means, and means for impressing said composed characters upon the shape.

22. A machine for placing identifying marks upon structural shapes including in combination means for positioning the shape, means at one side of the shape having a series of composable characters, means on the other side of the shape having a series of composable characters, means including a series of settable devices and a perforate record sheet, for composing identical characters on both of said character bearing means, and means for impressing said composed characters upon the shape.

23. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape longitudinally along a pathway, means at one side of the shape having a series of composable characters, means on the other side of the shape having a series of composable characters, selectively settable means for composing identical characters on both of said character bearing means, and means for simultaneously impressing said composed characters upon the shape.

24. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape longitudinally along a pathway, means at one side of the shape having a series of composable characters, means on the other side of the shape having a series of composable characters, means for composing identical characters on both of said character bearing means, and means for simultaneously sinking said composed characters into the metal of the shape.

25. A machine for placing identifying marks upon structural shapes including in combination means for positioning the shape, means at one side of the shape having a series of composable characters, means on the other side of the shape having a series of composable characters, means including a plurality of settable devices for composing identical characters on both of said character bearing means, and means for simultaneously impressing said composed characters upon the shape.

26. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape, means for stopping the shape, means for placing identifying marks upon the shape, and means operating automatically for causing said marking means to mark the shape upon the shape reaching said stopping means.

27. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape longitudinally along a substantially horizontal path, means for stopping the shape, means for placing identifying marks upon the shape, and means operating automatically for causing said marking means to mark the shape upon the shape reaching said stopping means.

28. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape to be marked and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising selectively settable devices, a plurality of character-bearing members relatively movable under the control of said selectively settable devices to compose the desired identifying mark and movable together to impress said composed mark upon the shape.

29. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape to be marked and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members relatively movable under control of a perforate sheet to compose the desired identifying mark and movable together to impress said composed mark upon the shape.

30. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape, means for stopping the shape to be marked,

and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members under control of a perforate sheet relatively movable to compose the desired identifying mark and movable together to sink the composed mark into the metal of the beam.

31. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape, longitudinally along a substantially horizontal pathway, means for stopping the shape to be marked, and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members under control of a perforate sheet relatively movable to compose the desired identifying mark and movable together to impress said composed mark upon the shape.

32. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape to be marked, and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members each having a plurality of characters thereon, said members being under control of a perforate sheet relatively movable to compose the desired identifying mark and movable together to sink the composed mark into the metal of the beam.

33. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape longitudinally along a substantially horizontal pathway, means for stopping the shape to be marked, and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members each having a plurality of characters thereon, said members being relatively movable and positionable under control of a plurality of selectively settable devices operated by a perforate record sheet to compose the desired identifying mark and movable together to impress said composed mark upon the shape.

34. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape, longitudinally along a substantially horizontal pathway, means for stopping the shape to be marked, and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members relatively movable to compose the desired identifying mark and movable together to impress said composed mark upon the shape, a similar marking means on the opposite side of the shape and opposite said first-mentioned marking means and movable together with said first mentioned marking means to mark the shape.

35. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape to be marked and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members relatively movable to compose the desired identifying mark and movable together to sink the composed mark into the metal of the beam, both said marking devices being jointly under the control of a perforate sheet.

36. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape to be marked and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members relatively movable to compose the desired identifying mark and movable together to sink the composed mark into the metal of the beam, both said marking devices being jointly under the control of a single composing device.

37. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape longitudinally, means for stopping the shape to be marked, marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members relatively movable to compose the desired identifying mark and movable together to impress said composed mark upon the shape, both said marking devices being jointly under the control of a single composing device.

38. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape, means for stopping the shape to be marked, and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members relatively movable to compose the desired identifying mark and movable together to sink the composed mark into the metal of the beam, both said marking devices being jointly under the control of a single composing device.

39. A machine for placing identifying marks upon structural shapes including in combination means for feeding a shape, longitudinally along a substantially horizontal pathway, means for stopping the shape to be marked, and marking means for placing a group of characters as an identifying mark upon the beam, said marking means

comprising a plurality of character-bearing members relatively movable to compose the desired identifying mark and movable together to impress said composed mark upon the shape, both said marking device being jointly under the control of a single composing device.

40. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape to be marked, and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members each having a plurality of characters thereon, said members being relatively movable to compose the desired identifying mark and movable together to impress said composed mark upon the shape, both said marking devices being jointly under the control of a perforate sheet.

41. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape to be marked, and marking means for placing a group of characters as an identifying mark upon the beam, said marking means comprising a plurality of character-bearing members relatively movable to compose the desired identifying mark and movable together to impress said composed mark upon the shape, a similar marking means on the opposite side of the shape and movable together with said first mentioned marking means to mark the shape, and means for maintaining tension between said two marking means while they are marking the beam.

42. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape, a carriage movable to and from the beam, a plurality of character bearing members mounted on said carriage movably relatively to each other, and means for moving said carriage to said shape to impress an identifying mark thereon.

43. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape, a carriage movable to and from the beam, a plurality of character bearing members mounted on said carriage movably relatively to each other, and means for moving said carriage to said shape to impress an identifying mark thereon, a similar carriage and character bearing members on the other side of the shape, said carriages being movable together to mark the shape.

44. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape, a carriage movable to and from the beam, a plurality of character bearing members mounted on said carriage movably relatively to each other, and means for moving said carriage to said shape to impress an identifying mark thereon, a similar carriage and character bearing members on the other side of the shape, said carriages being movable together to mark the shape, and means for creating tension between said carriages when marking the beam.

45. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape, a carriage movable to and from the beam, a plurality of character bearing members mounted on said carriage movably relatively to each other, and means for moving said carriage to said shape to impress an identifying mark thereon, a similar carriage and character bearing members on the other side of the shape, said carriage being movable together to mark the shape, and a common composing device controlling the relative movement of said character bearing members on both said carriages.

46. A machine for placing identifying marks upon structural shapes including in combination means for feeding a beam longitudinally, a carriage movable to and from the beam transversely to its direction of travel, a plurality of character bearing members mounted on said carriage movably relatively to each other, and means for moving said carriage to said shape to impress an identifying mark thereon.

47. A machine for placing identifying marks upon structural shapes including in combination means for feeding a beam longitudinally, a carriage movable to and from the beam transversely to its direction of travel, a plurality of character bearing members mounted on said carriage movably relatively to each other, and means for moving said carriage to said shape to impress an identifying mark thereon and means for creating tension between said carriages when marking the beam.

48. A machine for placing identifying marks upon structural shapes including in combination means for feeding a beam longitudinally, a carriage movable to and from the beam transversely to its direction of travel, a plurality of character bearing members mounted on said carriage movably relatively to each other, and means for moving said carriage to said shape to impress an identifying mark thereon, and a composing device for controlling the relative movement of said character bearing members.

49. A machine for placing identifying marks upon structural shapes including in combination means for feeding a beam longitudinally, a carriage movable to and from the beam transversely to its direction of travel, a plurality of character bearing members mounted on said carriage movably relatively to each other, and means for moving said carriage to said shape to impress an

identifying mark thereon and a common composing device controlling the relative movement of said character bearing members on both said carriages.

50. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a carriage moving to and from said beam, a plurality of character-bearing members, being relatively movable with respect to each other and each having a plurality of characters thereon, the movement of said carriage causing movement of said character-bearing members and settable devices for limiting the movement of said character bearing members to bring the desired character on each to the place of impression.

51. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a carriage moving to and from said beam, a plurality of character-bearing members, being relatively movable with respect to each other and each having a plurality of characters thereon, the movement of said carriage causing movement of said character-bearing members and settable devices for limiting the movement of said character bearing members to bring the desired character on each to the place of impression, and automatic control for said settable devices including a perforate sheet.

52. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a carriage moving to and from said beam, a plurality of character-bearing members, being relatively rotatable, with respect to each other and each having a plurality of characters thereon, the movement of said carriage causing rotation of said character-bearing members and settable devices for limiting the rotation of said character bearing members to bring the desired character on each to the place of impression.

53. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a plurality of character-bearing members swinging about a center, means for controlling the swinging movement of the various character-bearing members to bring a desired character on each to impression position to constitute or compose the identifying and means for impressing the identifying mark on the beam.

54. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape to be marked, a plurality of character-bearing members swinging about a center, means for controlling the swinging movement of the various character-bearing members to bring a desired character on each to impression position to constitute or compose the identifying and means for impressing the identifying mark on the beam, said controlling means including slidable bars moving with said swinging members and settable stops for said bars.

55. A machine for placing identifying marks upon structural shapes including in combination means for positioning a shape to be marked, a plurality of character-bearing members swinging about a center, means for controlling the swinging movement of the various character-bearing members to bring a desired character on each to impression position to constitute or compose the identifying and means for impressing the identifying mark on the beam, said controlling means including slidable bars moving with said swinging members and settable stops for said bars and automatic means for setting said stops.

56. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a plurality of character-bearing members swinging about a center, means for controlling the swinging movement of the various character-bearing members to bring a desired character on each to impression position to constitute or compose the identifying and means for impressing the identifying mark on the beam, said controlling means including slidable bars moving with said swinging members and settable stops for said bars, a solenoid for each stop and means for selectively controlling the current for said solenoids.

57. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam, to be marked, a plurality of character-bearing members swinging about a center, means for controlling the swinging movement of the various character-bearing members to bring a desired character on each to impression position to constitute or compose the identifying mark and means for impressing the identifying mark on the beam, said controlling means including settable stops for said swinging character-bearing members, a solenoid for each stop, circuits for said solenoids and a perforated sheet for governing the making and breaking of the circuits.

58. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a plurality of character-bearing members swinging about a center, means for controlling the swinging movement of the various character bearing members to bring a desired character on each to impression position to constitute or compose the identifying mark and means for impressing the identifying mark on the beam, said controlling means including slidable

bars moving with said swinging members and settable stops for said bars, a solenoid for each stop, circuits for said solenoids and a perforated sheet for governing the making and breaking of the circuits.

59. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a carriage movable to and from said beam, a shaft rotatably mounted on said carrier, a plurality of type carriers frictionally mounted on said shaft, and means for selectively positioning the respective type carriers.

60. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a carriage movable to and from said beam, a shaft rotatably mounted on said carrier, a plurality of type carriers frictionally mounted on said shaft, and means including a series of settable stops for selectively positioning the respective type carriers.

61. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a carriage movable to and from said beam, a shaft rotatably mounted on said carrier, a plurality of type carriers frictionally mounted on said shaft, and means including a series of slidable bars for the respective type carriers, and a series of settable stops for each slidable bar, for selectively positioning the respective type carriers.

62. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a carriage movable to and from said beam, a shaft rotatably mounted on said carrier, a plurality of type carriers frictionally mounted on said shaft, and means for selectively positioning the respective type carriers and means for rotating said shaft operated by the to and fro movement of said carriage.

63. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a carriage movable to and from said beam, a shaft rotatably mounted on said carrier, a plurality of type carriers frictionally mounted on said shaft, and means including a series of settable stops for selectively positioning the respective type carriers and means for rotating said shaft operated by the to and fro movement of said carriage.

64. A machine for placing identifying marks upon structural shapes including in combination means for positioning a beam to be marked, a carriage movable to and from said beam, a shaft rotatably mounted on said carrier, a plurality of type carriers frictionally mounted on said shaft, and means including a series of slidable bars for the respective type carriers, and a series of settable stops for each slidable bar, for selectively positioning the respective type carriers, and means for rotating said shaft operating by the to and fro movement of said carriage.

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

LOUIS A. HAWTHORNE.

Witnesses:
H. F. FLOHN,
F. C. TAFT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."