

No. 826,396.

PATENTED JULY 17, 1906.

R. G. WHITLOCK.
PUNCHING, PERFORATING, OR LIKE MACHINE.

APPLICATION FILED NOV. 18, 1905.

4 SHEETS—SHEET 1.

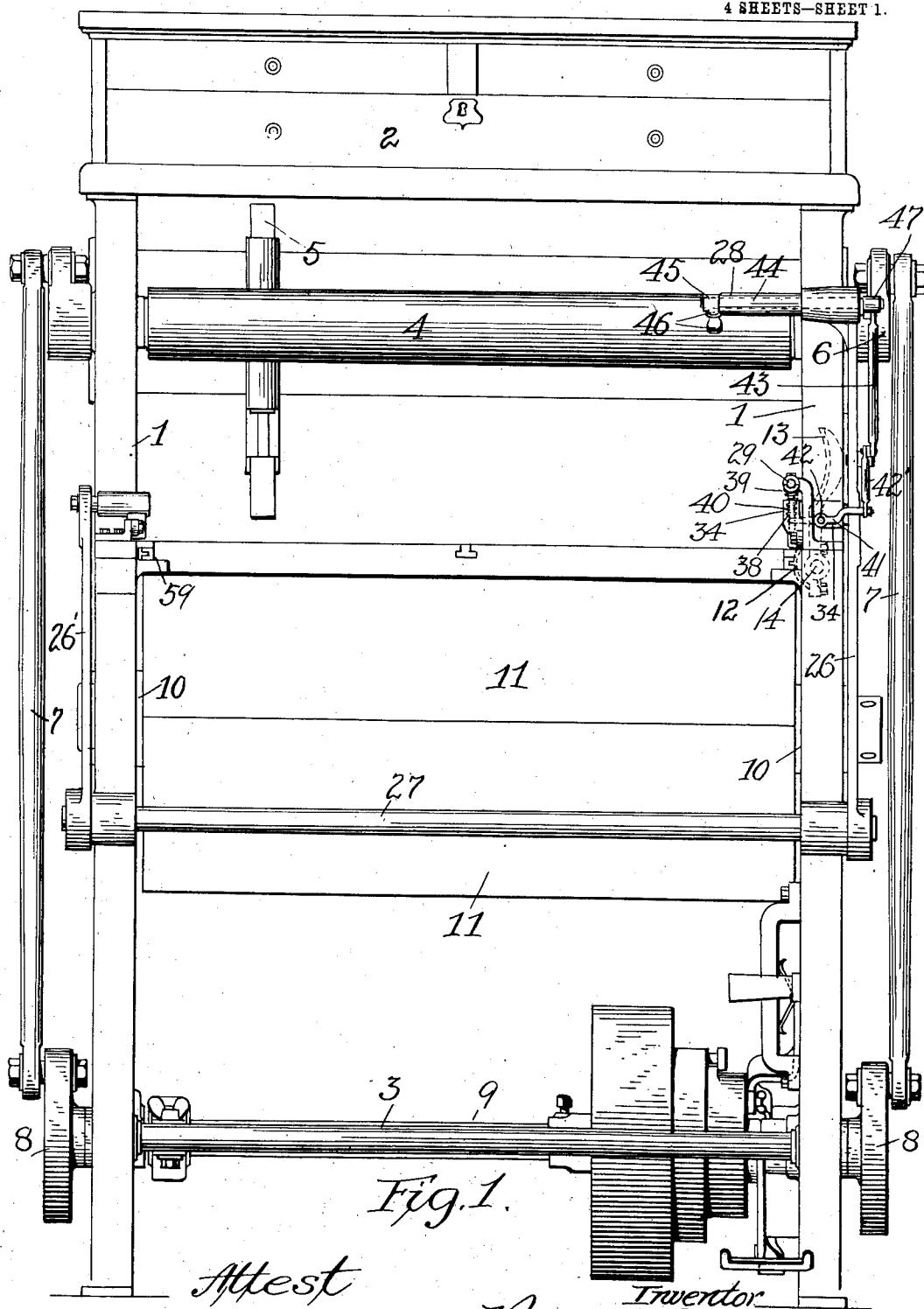


Fig. 1.

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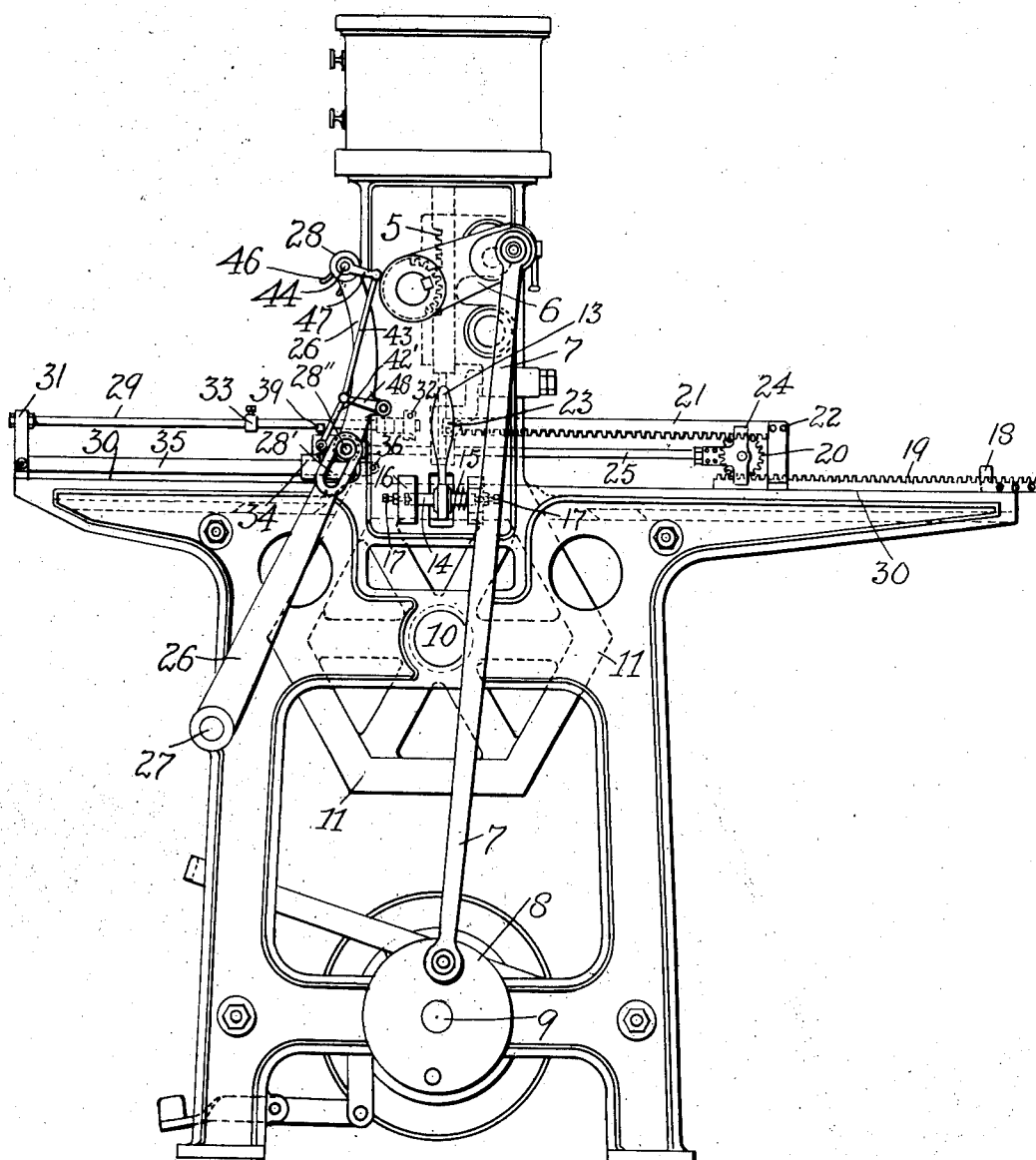
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4 SHEETS—SHEET 2.

Fig. 2.



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4 SHEETS—SHEET 3.

Fig. 3.

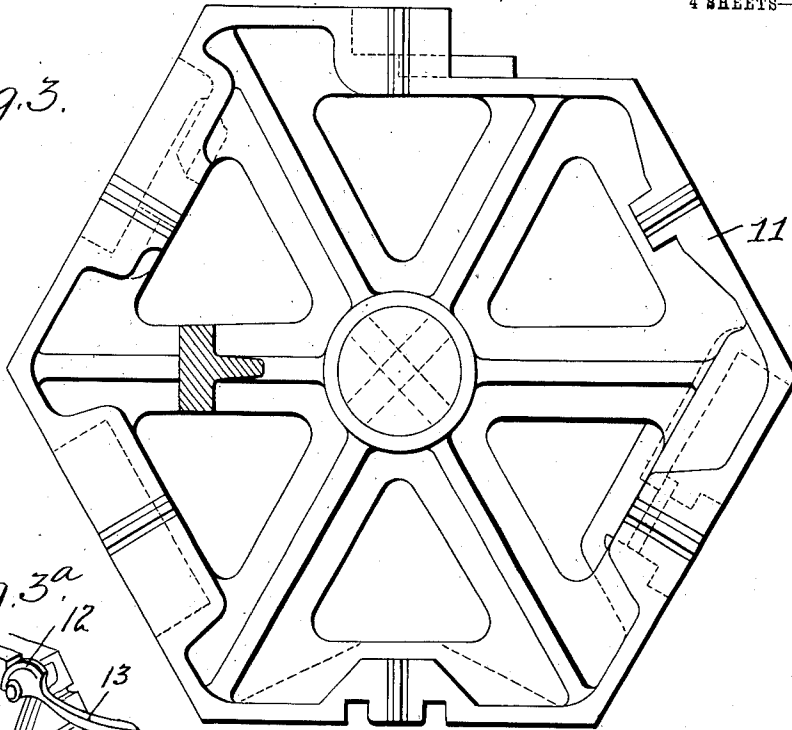


Fig. 3^a.

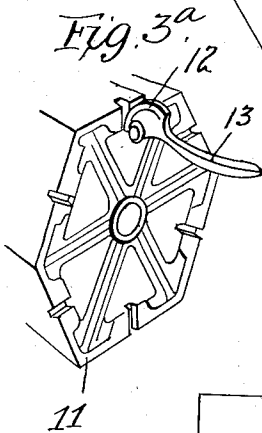
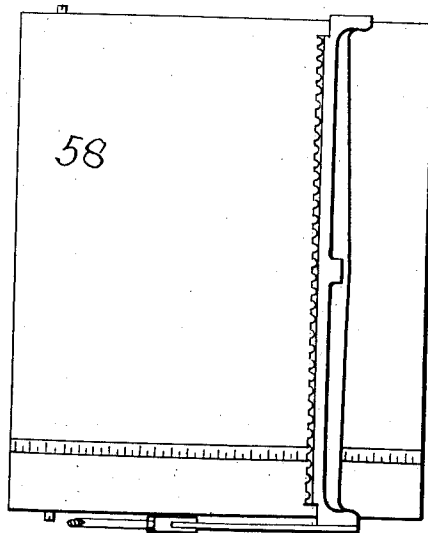
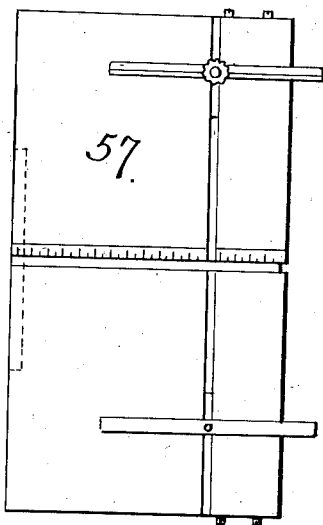


Fig. 4.



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4 SHEETS—SHEET 4

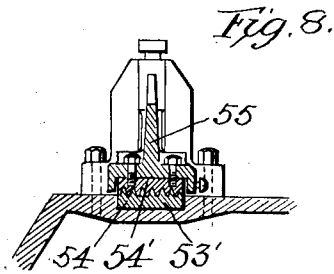
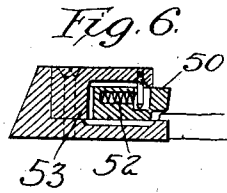
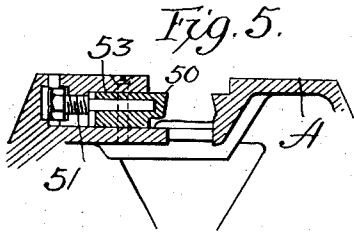
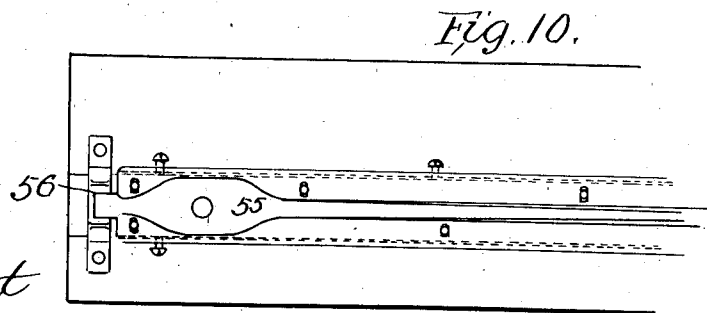
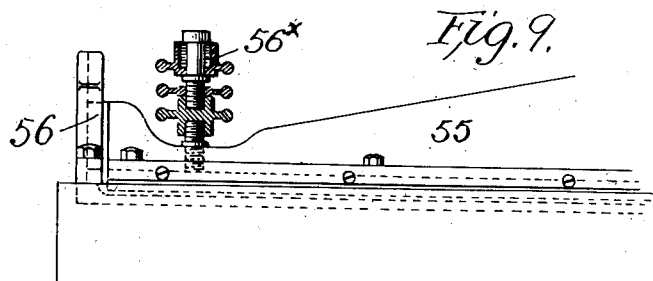
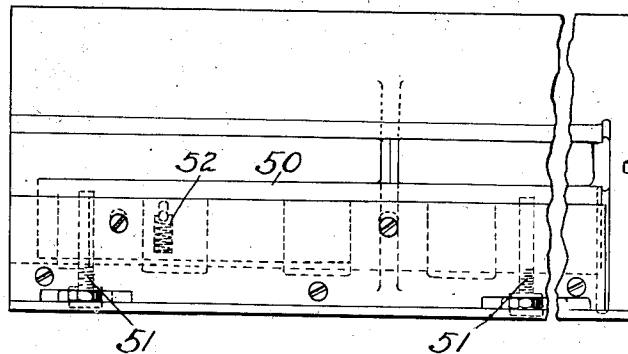


Fig. 7.



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UNITED STATES PATENT OFFICE.

RALPH G. WHITLOCK, OF LOS ANGELES, CALIFORNIA.

PUNCHING, PERFORATING, OR LIKE MACHINE.

No. 826,396.

Specification of Letters Patent.

Patented July 17, 1906.

Application filed November 18, 1905. Serial No. 288,095.

To all whom it may concern:

Be it known that I, RALPH G. WHITLOCK, a citizen of the United States, residing at Los Angeles, California, have invented certain new and useful Improvements in Punching, Perforating, or Like Machines, of which the following is a specification.

My present invention belongs to the type of machines disclosed in an application filed by me for Letters Patent of the United States, Serial No. 210,726, filed June 1, 1904.

My present invention may be termed a "multipress," in that I employ in one machine devices for carrying out a number of different operations—such as punching, perforating, scoring, round-cornering, tags and label cutting, and card-index-cutting machine, and a squaring-shear.

The invention consists in the features and combination and arrangement of parts hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a front view of the invention. Fig. 2 is a side elevation. Fig. 3 is a detail view of the hexagonal cylinder for carrying the elements adapted for the different kinds of work. Fig. 3^a is a detail perspective view of the end of the cylinder and the locking-lever therefor. Fig. 4 is a plan view of the two sections of the table of the machine. Fig. 5 is a sectional view of a part of the drum at that face upon which the various punch-dies are adapted to be secured, this view showing particularly the vise for clamping the said punch-dies in place. Fig. 6 is a detail of the vise. Fig. 7 is a plan view of this face of the drum. Fig. 8 is a detail sectional view of a part of the face of the drum adapted for scoring, the scoring-tool being shown as associated with the said face. Fig. 9 is a side view of part of the drum with the scoring appliances in place. Fig. 10 is a plan view of the parts shown in Figs. 8 and 9.

As in the application above referred to, the present machine comprises generally a frame composed of sides 1, a top 2, and cross-pieces 3. In the sides is journaled a gear-bar 4, Fig. 2, having teeth extending longitudinally thereof and engaging the teeth of rack-bars, one of which is shown at 5 in Fig. 2, adapted to reciprocate vertically in the punch-frame and connected to the punches or other suitable tools to drive the same. The gear-bar is operated by arms 6, to which are connected pitmen 7, which in turn are operated from

face-plates 8 on a main drive-shaft 9, operated in any suitable manner, but preferably in a manner disclosed in an application filed of even date herewith. In the frame at 10 is journaled a drum 11, which is of hexagonal form and is adapted to carry on its several faces appropriate devices for cooperating with the punches, perforating-tools, or other devices to which vertical reciprocation is imparted through the rack-bars and gear-bar above mentioned. These devices carried by the several faces of the drum are permanently fixed thereto and are adjusted at the factory so that when it is desired to change from one form of work to another or, as may be said, from one machine to another it will be simply necessary to rotate the drum so as to bring the proper face uppermost to cooperate with the tools actuated by the gear-bar, and then by locking the drum in this position the machine will be ready to work. I have sought to avoid the necessity for using wrenches, screw-drivers, or other tools and to avoid the necessity of the operator taking out one set of tools or devices and adjusting another set to their places.

In order to hold the drum in position, I provide a lever 13, having an eccentric portion 12 to engage notches in the drum. The lever 13 is on a shaft 14, which is under tension of a spring 15, tending constantly to force the lever into engaging position. The shaft 14 is journaled in brackets 16 and is adjustable longitudinally by pointed screws 17, so that the locking-pin for the multipress-cylinder may be brought in correct position for accurately holding the said multipress drum or cylinder to cooperate with the reciprocating tools.

A gage for the work is shown at 18, and this may be set in position through mechanism controlled by the operator at the front of the machine. For this purpose the gage-bar is connected directly to rack-bars 19, only one of which is shown and each of which meshes with a gear-wheel 20, which also meshes with a toothed bar 21, which is multifaced, and in the present instance I have shown it as stationary, being secured to a bracket 22 and to the frame at 23. Each of the said gears 20 is journaled in a carriage 24, connected by a rod 25 to a lever at the front of the machine, the lever for the right-hand side of the machine being indicated at 26, while that for the left-hand side is indicated at 26', both levers being fixed to the cross-shaft 27. The rod

25 has a slotted connection with its lever at 28'. The lever 26 at its upper end has a handle 28, and by grasping this and pulling the lever forward the gage may be quickly set in position as the movement imparted by the lever 26 is multiplied through the arrangement of toothed bars and the gear. For instance, by drawing the lever 26 forward, so that its point of connection with the rod 25 moves ten inches, the back gage 18 will move twenty inches.

In order to provide stops for the movement of the gage mechanism, a rod 29 extends horizontally over the table 30, being supported at one end in the bracket 31, fixed to the table, and at the other end 32 to the frame. This rod carries a stop or stops 33, and these stops may be set at different positions along the rod corresponding to the different positions that the gage must occupy in performing the desired work. For instance, it may be necessary in carrying out a certain piece of work to set the stops in a variety of positions over the table, and it is desirable, of course, to make these changes in the gage without stopping to reset or measure the distance of the movements desired. For instance, in perforating checks we will say that the perforations are to be four inches apart and that the paper is twenty inches wide. By placing five stops on the rod 29 two inches apart the paper will be moved the proper distance—*i. e.*, four inches—by arresting the movement of the hand-lever at the different stops mentioned. In order to secure this arresting or stopping action, the hand-lever is connected with a carriage or block 34, movable on a rail or guide-bar 35, fixed to the standard 31 at one end and to the frame at 36. This carriage or block carries a vertically-movable arresting-pin 38, having a head 39 at its upper end concaved on its upper face to fit the rod 29 and pressed upwardly normally by a spring 40. This arresting-pin is engaged by a lever 41, pivoted at 42 to the carriage or block and connected by the links 42' 43 with a shaft 44, extending through the handle 28 and having connected at its inner end a duplex thumb-lever 45, having two contact or bearing surfaces 46. The shaft has an arm 47, to which one of the links 43 is secured, and the links are also controlled by a pivoted arm 48, carried by the hand-lever. By means of this mechanism the operator by pressing with his thumb or finger upon the lever 45 can depress the arresting-pin, so as to pass the stops 33 on the rod 29.

In drawing the lever 26 forward for the first stopping action the operator merely grasps the handle 28 without pressing the lever 45, and as the arresting-pin now remains pressed upwardly by its spring it will contact with the first of the stops 33. The operator then presses on the finger or thumb lever 45, and thus depresses the arresting-pin 38, so

that it may pass beneath the first stop 33 as the lever 26 is drawn farther forward, and immediately upon passing this first stop the thumb-lever 45 is released, and the arresting-pin springs up into position to strike the second stop, and so on throughout the series. The two finger-surfaces 46 on the lever 45 are provided in order to allow the operator to press the lever 45 conveniently at whatever angle the lever 26 may stand. The rod 29 is suitably graduated.

I prefer to secure the rod 25 by screwing it into the carriage 34, and this carriage carries the pin 28'', which moves in the slot 28' of the lever.

In Figs. 5, 6, and 7 I show the means located on the face marked A of the drum for securing dies to cooperate with the various forms of punches. On this face is located a vise for holding said dies, said vise comprising a movable jaw 50, adapted to be set in different positions to clamp the dies by the bolts 51 and to be returned to normal position when the bolts are loosened by springs, one of which is shown at 52. The vise operates in a recess 53 in the face of the drum.

In Figs. 8, 9, and 10 I show the attachment or devices on one of the faces for use in scoring. This face has a recess at 53', in which the scoring-die 54 is arranged. The scoring-tool 54' is connected with the block or beam 55, adapted to move vertically in guides 56, secured to the face of the drum. This cross-beam or block is connected by the screw-threaded couplings at 56^x to the plunger-rods operated by the gear-bar.

As above stated, the drum is adapted to be turned to bring its desired face uppermost. In order to permit this, the table is formed in two parts 57 and 58, Fig. 4, guided, as at 59, to move in the frame. When the drum is to be turned, these sections of the table are moved apart, and then the drum is turned and set in proper position, and thereafter the parts of the table are moved up to the drum again, as shown in Fig. 2.

I claim as my invention—

1. In a machine of the class described, the tool or operating device or devices, a drum having a plurality of faces carrying devices to cooperate with the tool or tools, a lever for holding the drum in position, and a shaft carrying the lever and means for adjusting the said shaft longitudinally in its bearings so that the drum will be held accurately in the desired position, said adjustment being in a direction transverse to the axis of the drum, substantially as described.

2. In combination in a machine of the class described, the tools or operating devices, a gage, a hand operating device and a connection between the same and the gage for multiplying the movement of the said hand operating device to the gage, substantially as described.

3. In combination in a machine of the class described, a gage, a toothed bar connected therewith, a gear meshing with the toothed bar and hand operating devices connected with the gear for traveling the same and a toothed bar engaging the gear for multiplying the movement of the hand operating device, substantially as described.

4. In combination in a machine of the class described, the tool or tools with means for operating the same, a gage, movable along the surface of the table, a stop, a device for operating the gage having connections thereto, an arresting device associated with the said operating device with means for operating the arresting device so that it may pass the stop, substantially as described.

5. In combination in a machine of the class described, the tool or tools with means for operating the same, a gage, movable along the surface of the table, a plurality of stops, a device for operating the gage, an arresting device associated and moving with the operating device with means for throwing the said arresting device out of line with the said stops, substantially as described.

6. In combination in a machine of the class described, a tool or tools with means for operating the same, a gage, movable along the surface of the table, a stop, an operating-lever with connections to the gage, an arresting device associated and moving with the said lever and means carried by the lever for adjusting the arresting device so that it may pass the stop, substantially as described.

7. In combination in a machine of the class described, a tool or tools with means for operating the same, a gage, a stop, an operating-lever with connections to the gage, an arresting device associated and moving with the said lever, and means carried by the lever for adjusting the arresting device so that it may pass the stop, said adjusting means including a finger-lever with connections to the arresting device, substantially as described.

8. In combination in a machine of the class described, a tool or tools with operating means therefor, a gage, a hand-lever for operating the same, a stop, an arresting device associated and moving with the hand-lever, a shaft extending through the handle of the hand-lever, a finger-lever on the said shaft and connections from the said shaft to the arresting device to withdraw the same from engagement with the stop, substantially as described.

9. In combination in a machine of the class described, a tool or tools with operating

means therefor, a gage, a lever having connections with the gage and a horizontally-extending handle, a stop, an arresting device associated and moving with the lever, a shaft extending horizontally at the handle, a finger-lever for operating the said shaft and means for connecting the shaft with the arresting device, substantially as described.

10. In combination in a machine of the class described, a tool or tools with operating means, a gage, a lever, a sliding carriage or block having a pin-and-slot connection with the lever, a connection between the said block and a gage, a stop, an arresting device carried by the block and means carried by the lever for withdrawing the arresting device from alinement with the stop, substantially as described.

11. In combination in a multipress, a drum adapted to be turned, a recess in one face of the drum, a vise-jaw associated with said recess, means for operating the vise-jaw, a tool cooperating with the tool held by the vise-jaw and means for operating the cooperating tool, substantially as described.

12. In combination, in a multipress, a drum adapted to be rotated, and having a plurality of faces, a tool held on one of the said faces, guides secured to the said face, a tool cooperating with the tool on the drum and moving in the said guides and means for operating the said last-mentioned tool, substantially as described.

13. In combination in a multipress, a table having a movable section, a drum, arranged below the plane of the table-surface adapted to be turned, tools on the said drum being adapted to be brought into action by turning the same, and the movable section of the table being adapted to be adjusted to permit this adjustment and a tool cooperating with that on the drum, substantially as described.

14. In a multipress, a table formed in two sections slidable toward and from each other, a rotary drum or carrier having thereon a plurality of tools, and a carrier for tools to cooperate with those on the drum the said table-sections being moved away from each other to permit the drum to be turned and being returned to normal position when the drum is set, substantially as described.

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

RALPH G. WHITLOCK.

Witnesses:

NATHAN NEWBY,
J. LANDRUM GRAHAM.