O. Morgan,

Horse-Collar Machine.

No. 32,708. Patented July 2, 1861.

Fig. 3.

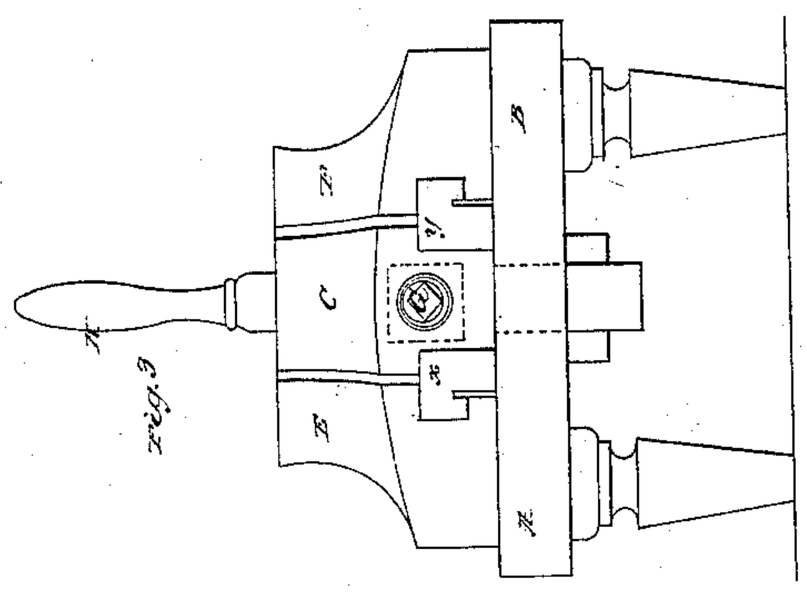


Fig. 1.

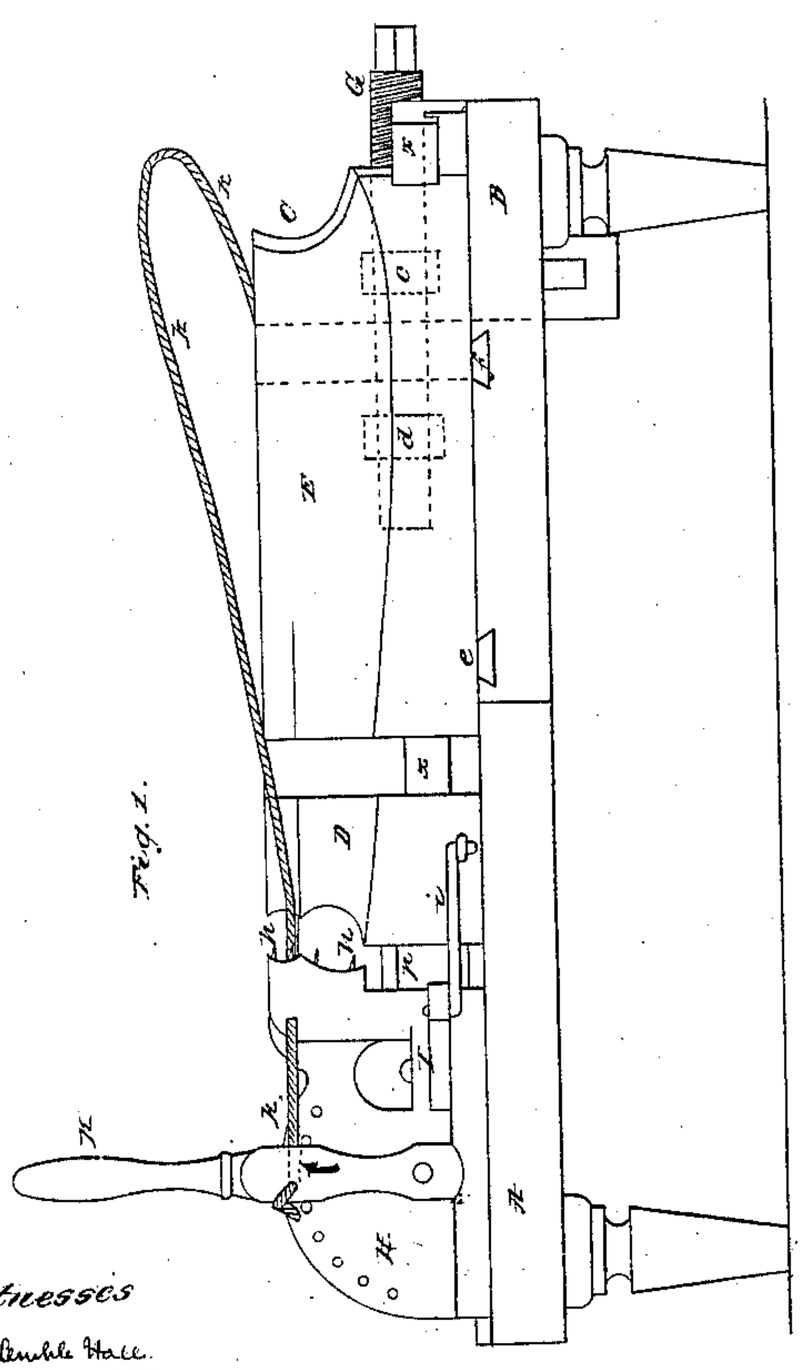
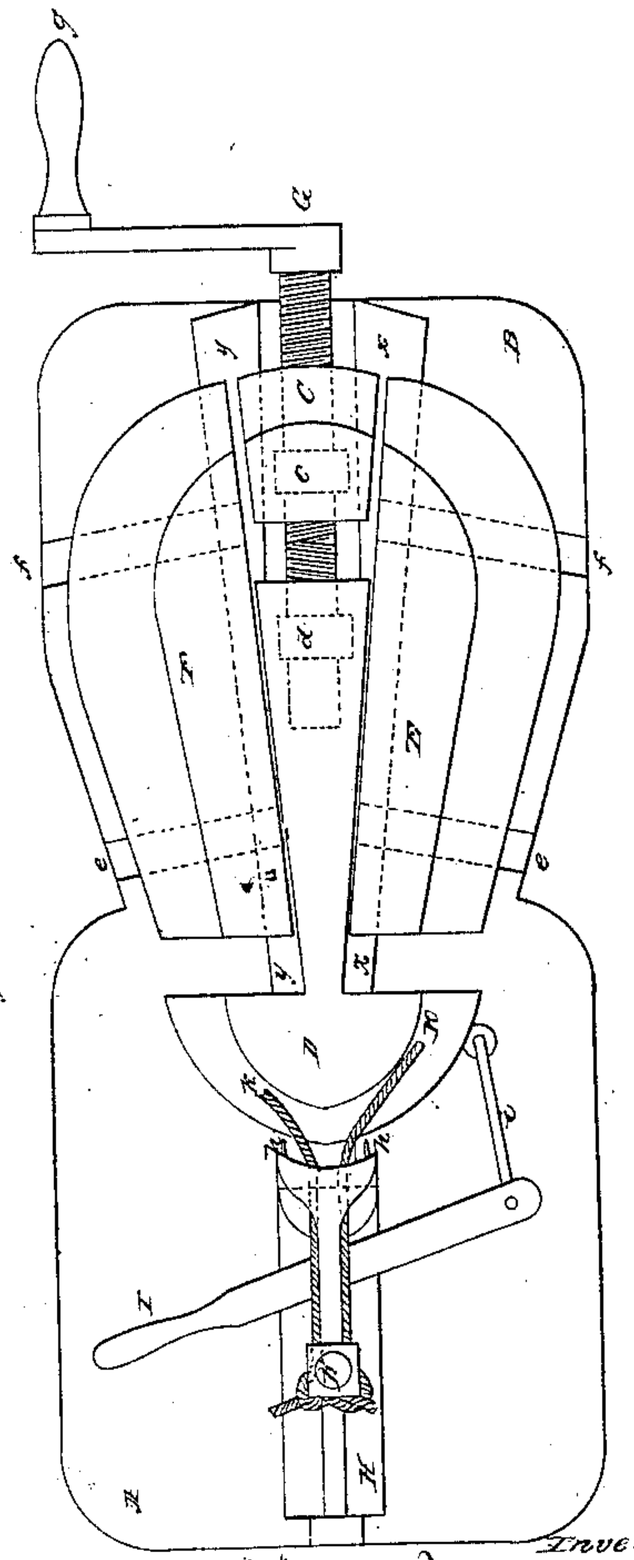


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

ORSON MORGAN, OF HENRY, ILLINOIS.

HORSE-COLLAR BLOCK.

Specification of Letters Patent No. 32,708, dated July 2, 1861.

To all whom it may concern:

Be it known that I, ORSON MORGAN, of Henry city, in the county of Marshall and State of Illinois, have invented a new and useful Improvement in Horse-Collar Blocks or Formers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing, making a part of this specification, and to the letters of reference marked thereon.

The nature of my invention consists in dividing a horse collar block into sections which may be suitably expanded in such a manner that the relative proportions of length and breadth and shape may be retained in any enlargement of the size of the collar operated upon.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 is a side elevation of my said improved machine for making horse collars. Fig. 2 is a plan; and Fig. 3 is an elevation of the same.

A B is the table or bench of the machine.

C, D, E and F are four blocks constituting a horse collar former or shaper. The butt, or throat, block C is permanently secured to the table by a key or other suitable fastening.

D is the block forming the small end of the collar, and sliding longitudinally on a dovetailed tenon in the center of the table. The motion of the block D to and fro, is communicated by a right and left screw G working in the nuts *c* and *d* of the blocks C and D respectively.

g is the handle by which the screw may be worked.

E and F are side blocks working crosswise the table on the tongues and grooves *e* and *f*. These tongues do not cross the table at right angles, but in an angular direction inclining upward toward the small end of the collar as they proceed outward. By this arrangement the butt or throat of the collar is preserved in its general shape approximately a semi-circle; which would not be the case if the tongues and grooves occasioned a rectangular movement of the side blocks. The side blocks E and F obtain their transverse motion from the longitudinal motion of the block D communicated through the wedge shaped side pieces *x* and *y*, which are attached to D, and are tongued and grooved into the side blocks E and F in such a manner that the longitudinal motion of D either wedges them apart or draws them together as may be required.

H is a small carriage also sliding on the central dove-tailed tenon of the table, and carrying a horizontal lever I, and a vertical lever K. The lever I works on a pin in the middle of its length, and on the end opposite to the handle has a rod *i* which hooks into an eye on the block D, and thus enables the operator to shift the carriage back and forward on the table. The portion of the carriage that clamps the ends of the collar when it is moved toward and against the forming blocks is furnished with spurs *h* that firmly secure the ends of the collar while it is being stretched. The vertical lever K works over an arc of the carriage furnished with holes and a pin, as shown in the drawing, or a ratchet and pawl, by which it may be retained in the position desired. Attached to the lever K is a rope or thong *k*, *k*, which may be passed over or around the collar and held tightly in its place by fastening back the lever. The carriage has a steady pin *p* working in a hole in the block D.

I do not propose to confine myself to the particular proportions or specific details of construction shown in the model and drawing. The table and blocks may be of cast iron; and I prefer to make the grooves in the table, with the tongues of the blocks working therein, of a T shape. The inclination I prefer to use in the wedge pieces *x* and *y* that move the side blocks E and F, is about five thirty seconds ($\frac{5}{32}$) of an inch taper to the inch, which will preserve the relative proportions of width and length of the collar.

The operation of my machine is as follows: The collar being made is placed over the blocks C, D, E and F which are closed together for the purpose. The carriage H is then brought up by the horizontal lever I until the spurs *h* penetrate and secure the ends of the collar. The rope *k*, *k* is placed over the seam in the part of the collar that is to be indented for the reception of the hames of the harness, and is drawn tight by the lever K which is secured by a pin. The blocks are then expanded by turning the screw G with its handle *g* over from left to right. By the action of the right and left

screw in the nuts *c* and *d* of the blocks C, D, the movable block D is shifted along the longitudinal tenon of the table, away from the stationary block C; and in its progress moves the side blocks E and F outward by means of the wedge pieces *x* and *y*. The outward motion of the side blocks E and F is restricted by the tongues and grooves *e* and *f*, that convert it into a motion slightly tending upward, by which the shape of the throat of the collar is preserved.

By the symmetrical expansion of the blocks C, D, E and F, combined with the rope *k k*, by which the groove for the reception of the hames is made, a horse collar may be expeditiously and effectually formed with great economy of labor.

I hereby claim as my invention and desire to secure by Letters Patent—

1. The construction of a horse collar block in parts arranged in the manner described that they may be expanded uniformly and retain the same relative proportions of length and breadth and shape to suit the various sizes of collars.

2. The sliding carriage H constructed substantially as described, with the spurs *h* for clamping the ends or points of the collar, and the lever K by which the rope *k k* is tightened into the hames groove.

ORSON MORGAN.

Witnesses:
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