H. TSCHERNING.

PATTERN DRAWING DEVICE.

APPLICATION FILED MAR. 19, 1910.

1,018,731.

Patented Feb. 27, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

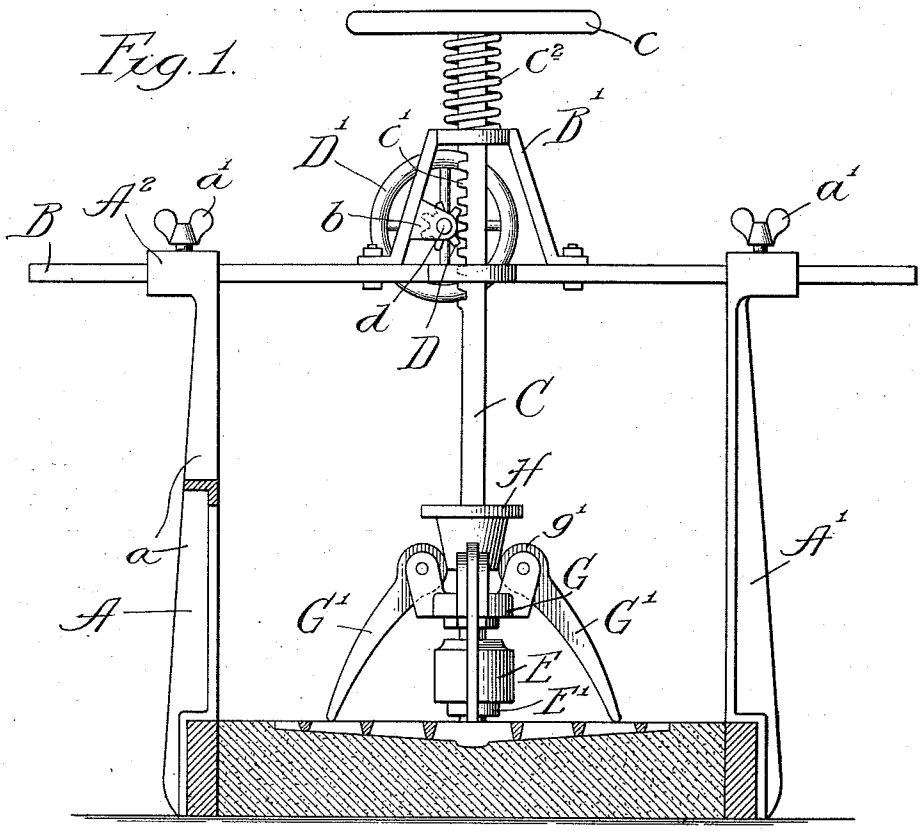
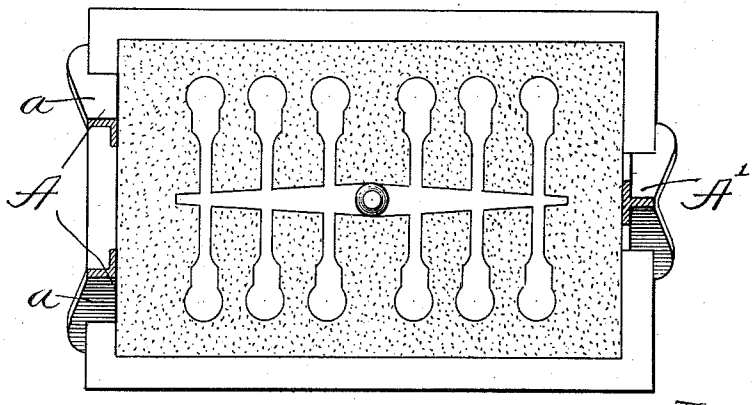


Fig. 2.



Witnesses:

John Enders

Chas. H. Buell

Inventor:

Henry Tscherning.

By Dyer, Tompkins, Lee, Christy & Wiles,

Attys.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

H. TSCHERNING.

PATTERN DRAWING DEVICE.

APPLICATION FILED MAR. 19, 1910.

1,018,731.

Patented Feb. 27, 1912.

2 SHEETS—SHEET 2.

Fig. 3.

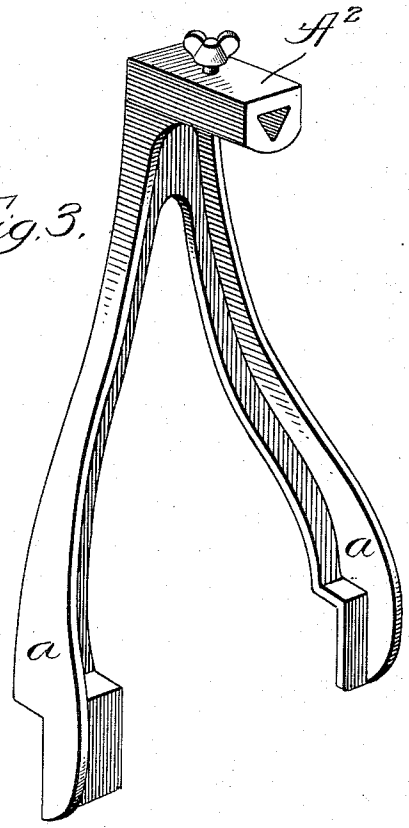


Fig. 4.

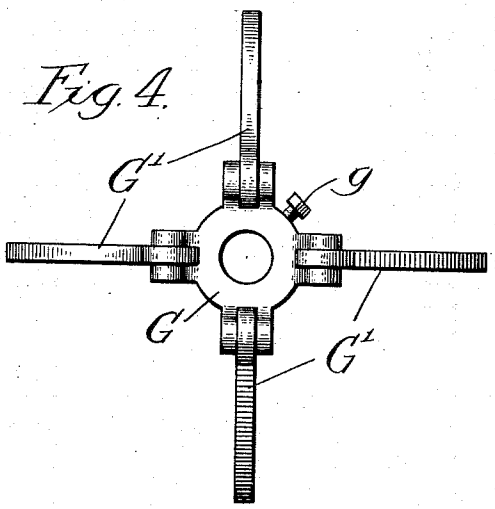


Fig. 5.

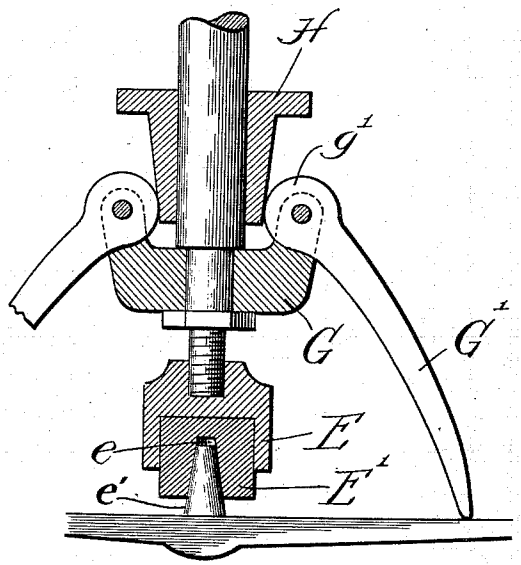
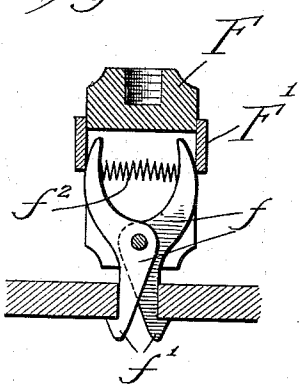


Fig. 6.



Witnesses:

John Enders

Chas. H. Buell.

Inventor:

Henry Tscherning.

By Dyrenforth, Lee, Chrittons & Wiles.

Attys.

UNITED STATES PATENT OFFICE.

HENRY TSCHERNING, OF FREEPORT, ILLINOIS.

PATTERN-DRAWING DEVICE.

1,018,731. Specification of Letters Patent. Patented Feb. 27, 1912.

Application filed March 19, 1910. Serial No. 550,552.

To all whom it may concern:

Be it known that I, HENRY TSCHERNING, a citizen of the United States, residing at 350 Adams street, Freeport, in the county of Stephenson and State of Illinois, have invented new and useful Improvements in Pattern-Drawing Devices, of which the following is a specification.

My invention relates to certain new and useful improvements in pattern-drawing devices, and is fully described and explained in the specification and shown in the accompanying drawing, in which:

Figure 1 is an elevation of my improved device, a portion of the frame being shown in vertical longitudinal section; Fig. 2 is a view showing the legs in horizontal section and the pattern and flask in elevation; Fig. 3 is a perspective view of one end of the frame; Fig. 4 is a top plan of the spider and fingers; Fig. 5 is a vertical section through the pattern-engaging portion of the device and the parts immediately adjacent thereto and Fig. 6 is an illustration of a modified form of pattern engaging device.

Referring to the drawing A is a casting forming one end of the frame of my device. The same has two legs *a*, each of which is provided with a right-angled notch forming a shoulder at its lower end, adapted to rest upon the edge of the drag in the manner illustrated in Figs. 1 and 2. A^1 is a similar casting at the other end of the device, the same comprising however only one leg, similarly notched and shouldered at the bottom to provide a single resting point upon the edge of the drag. By this means the entire structure receives a three-point bearing on the edge of the drag, which frequently has great irregularities, and thus is firmly supported without danger of tilting. Each of the castings A A^1 is provided with an outwardly turned projection perforated longitudinally by a non-circular hole in which runs a bar B longitudinally adjustable through the perforations aforesaid and capable of being locked in any given position by set screws a^1. By the foregoing described mechanism the castings, which form the legs of my device, can be adjusted to fit any drag, and the bar can be moved at will therethrough to bring the operating-mechanism carried thereby into any given desired longitudinal position with reference to the contents of the drag.

The bar B supports at its center an upwardly extending yoke-shaped bracket B^1, the bar B and the upper part of the bracket B^1 being enlarged in line with each other, as illustrated, and centrally perforated for the passage therethrough of a plunger-rod C which is guided by said perforations. The plunger-rod is provided with a handle *c* at its upper end, and with a rack c^1. A spring c^2 surrounds the upper end of the plunger-rod and presses the same up with sufficient force to prevent the fall of the same by gravity. The yoke-shaped bracket B^1 carries a smaller bracket *b* in which is journaled a shaft *d* carrying a pinion D in mesh with the rack c^1 on the plunger C, a hand-wheel D^1 being provided by means of which said shaft and pinion may be rotated to elevate and depress the plunger C at will.

On the extreme lower end of the plunger C is carried a block E containing a piece of rubber E^1 having a conical depression *e*, which is adapted to frictionally engage with a similarly shaped projection e^1 upon a pattern, for the purpose of drawing the same. In the alternative, the modified form of pattern-engaging device shown in Fig. 6 may be adopted, in which F is a block adapted to be secured to the extreme lower end of the plunger, the block being slotted at its lower end to receive pivotally between the furcations formed by said slot, a pair of fingers *f* provided with hooks f^1 at their lower ends, the fingers being acted upon by a spring f^2 which is adapted normally to press the fingers in such direction as to throw the lower ends thereof together. A ring F^1 surrounds the block F in this form of construction and when lowered will press the upper ends of the fingers together and press the lower ends apart. When this form of pattern-engaging mechanism is used the pattern is provided with a perforation or notched depression of some sort into which the lower ends of said fingers may enter and engage in the manner illustrated. When the fingers have entered the ring F^1 will be depressed to throw them apart and a firm hold will then be had upon the pattern whereby the same may readily be drawn from the drag.

Above the pattern-engaging mechanism at the lower end of the plunger is mounted a spider G in the preferred form of construction provided with four radially projecting arms turned upward at their ends in the manner best shown in Fig. 5. The spider

is rotatable upon the plunger and can be locked in any given position by a set-screw *g*. The upper ends of the arms of the spider are bifurcated and between the furcations are pivoted fingers G^1, each of said fingers being provided at its upper end with an enlarged head of a circular cross-section, the curvature of said heads being concentric with the pivots of the fingers. Vertically movable upon the plunger above the spider is a locking cone H, which, when depressed, will engage with the circular heads of the fingers to hold the same in any given angular position with reference to their supports.

From the foregoing description of the mechanical construction, the operation of my device can readily be understood. After the cope has been taken off the drag it is sometimes a matter of some difficulty to draw the pattern, particularly if the same have long projections running downward into the drag, without disfiguring the mold in the drag by irregularly drawing the pattern. The purpose of the present construction is to provide a simple mechanism whereby the patterns can invariably be drawn up in a perfectly vertical direction without danger of such injury to the molds. To this end the legs of the frame are adjusted to fit the drag, which is to be used. The cross-bar B is then placed in such a longitudinal position as to bring the plunger immediately over that portion of the pattern which is adapted to be engaged by the pattern-engaging mechanism at the lower end of the plunger. The pattern-engaging mechanism is then engaged with the pattern in the manner already described in detail in connection with the two different forms of this device illustrated. The fingers G^1 are then arranged so as to contact with the pattern in the manner illustrated. It may be that with any given pattern all of these fingers will not contact. It will be obvious that more or less fingers than those illustrated might be used in building the machine, the purpose being merely to provide enough fingers that with all ordinary patterns enough will contact therewith to make it certain that the pattern will be held in a fixed angular position with reference to the plunger. When the fingers are so placed in position the locking cone is dropped and the plunger elevated in the manner already described, that is by turning the hand-wheel and exerting the upward force upon the plunger, through the means of the rack and pinion movement.

It will be evident that the foregoing device is simple, comparatively cheap in its construction, that its adjustment is a comparatively simple matter and that when once adjusted to a given drag and card of patterns it can be used very rapidly. Furthermore, it will be seen that the finger-mechanism holds the pattern in an absolutely fixed position so that tilting or rocking becomes impossible.

I realize that considerable variation is possible in the details of construction of my improved device, without departing from the spirit of my invention, and I do not intend, therefore, to limit myself to the specific form herein shown and described.

What I claim as new and desire to secure by Letters Patent, is:

1. In a pattern-drawing device, pattern-engaging means adapted to exert the necessary lifting force upon the pattern to draw the same and pattern-steadying means adjacent to the pattern-engaging means and arranged to be placed in contact with the pattern and locked in position to prevent relative movement between the pattern-engaging means and pattern.

2. The combination, in a pattern-drawing device of a guided movable member, pattern-engaging means carried thereby and pattern-steadying means also carried thereby and arranged to contact with the pattern in a plurality of points to prevent rocking of the same with reference to said guided member.

3. The combination, in a pattern-drawing device of a guided movable member, pattern-engaging means carried thereby, a plurality of pivoted fingers adapted to engage the pattern to prevent the rocking of the same, and means for locking the fingers in position in contact with the pattern.

4. In a pattern-drawing device, the combination with a guided member of a bifurcated block carried by said member, a pair of hooks pivoted between the furcations of said block and arranged to enter an opening in a pattern and when separated to engage the same and a ring movable upon the block adapted to engage the hooks upon the opposite sides of the pivots from their engaging portions to hold the same in their separated relation.

5. The combination, with a frame adapted to rest upon the edges of a drag, of a guided member adjustable upon the frame to be brought over different parts of the drag, pattern-engaging means carried by said member, means for moving the member, and pattern-steadying means carried by said member and consisting of a plurality of fingers adapted to be brought into contact with the pattern to prevent rocking of the same with reference to said guided member.

6. The combination, with a frame having adjustable supports adapted to rest upon the edges of drags of different sizes of an adjustable longitudinally-extending member and a guided member carried thereby and adapted by the adjustment thereof to be brought over different parts of the drag, pattern-engaging means carried by said

guided member, a series of steadying fingers carried by said member and adapted to be brought into contact with a pattern to prevent rocking the same, and locking means for the fingers.

7. A device for drawing patterns comprising a drawing member adapted to be attached to the pattern plate, and a polypod brace member co-acting with the drawing member, the legs of which brace member engage the pattern plate and hold it against tilting movement.

8. A device for drawing patterns comprising a drawing member adapted to be attached to a pattern plate, and a plurality of brace rods co-acting with the drawing member, said rods engaging the pattern plate and holding it against tilting movement with respect to the drawing member during the drawing operation.

HENRY TSCHERNING.

In presence of—
JOHN SCHILLER,
B. R. RODENBOUGH.