

S. STRETTLES.

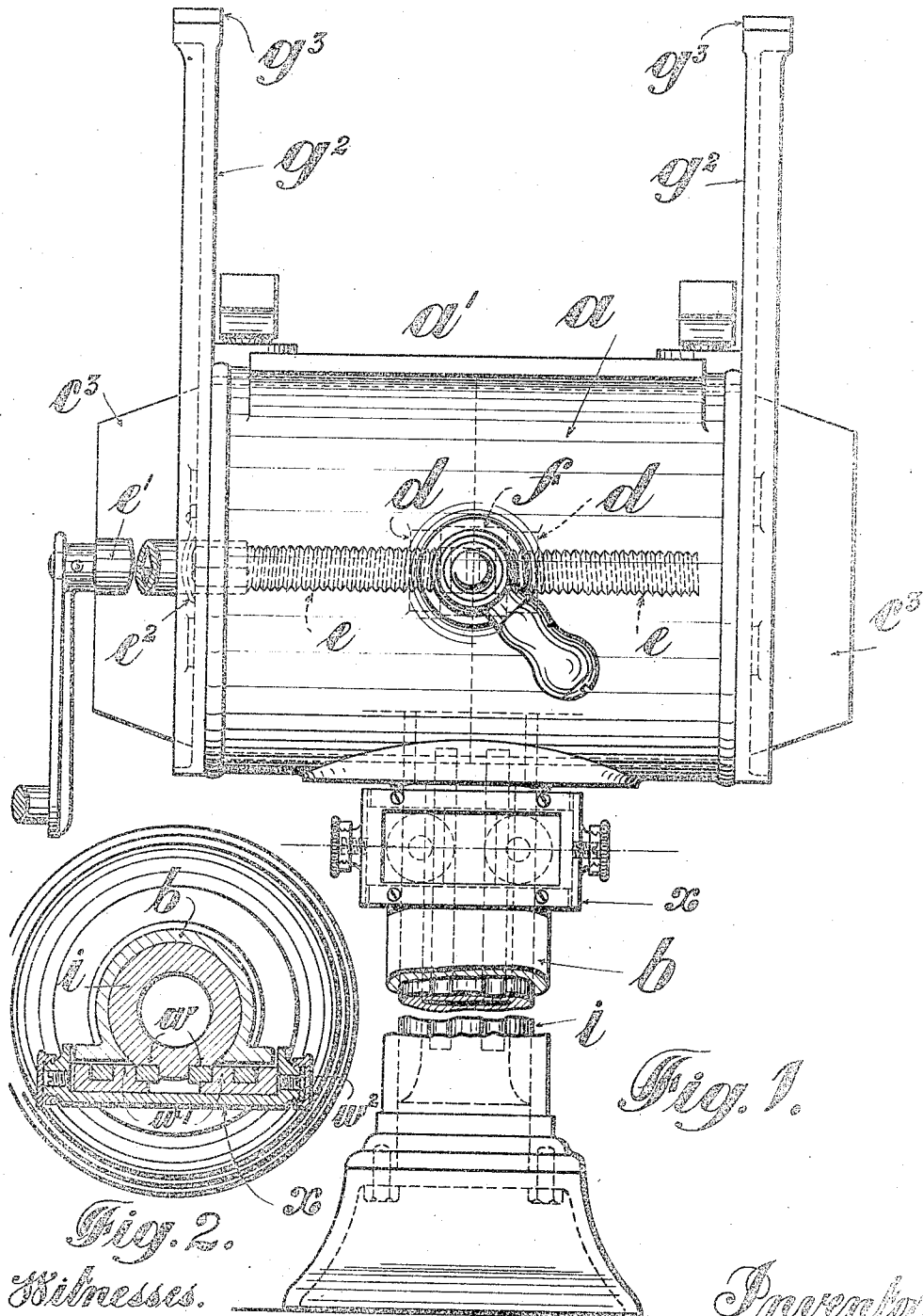
MACHINE FOR USE IN DRAWING PATTERNS IN MOLDING.

APPLICATION FILED FEB. 15, 1909.

Patented Dec. 7, 1909.

4 SHEETS—SHEET 1.

942,419.



Witnesses.

W. P. Burk

Ernest G. Smith

Inventor.

Stephen Strettle

By his Attorney: W. J. Smith

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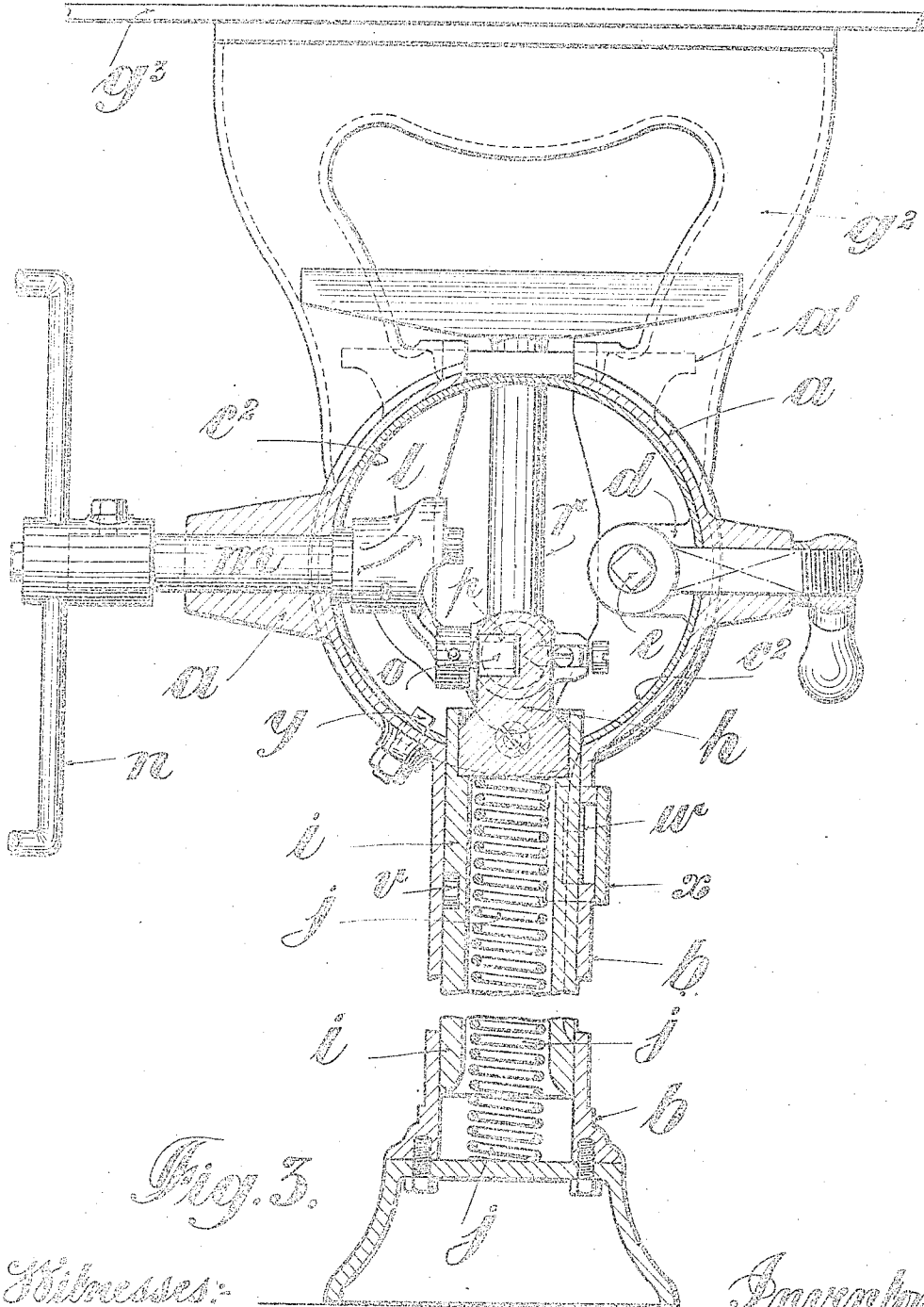


Fig. 3.

Witnesses:

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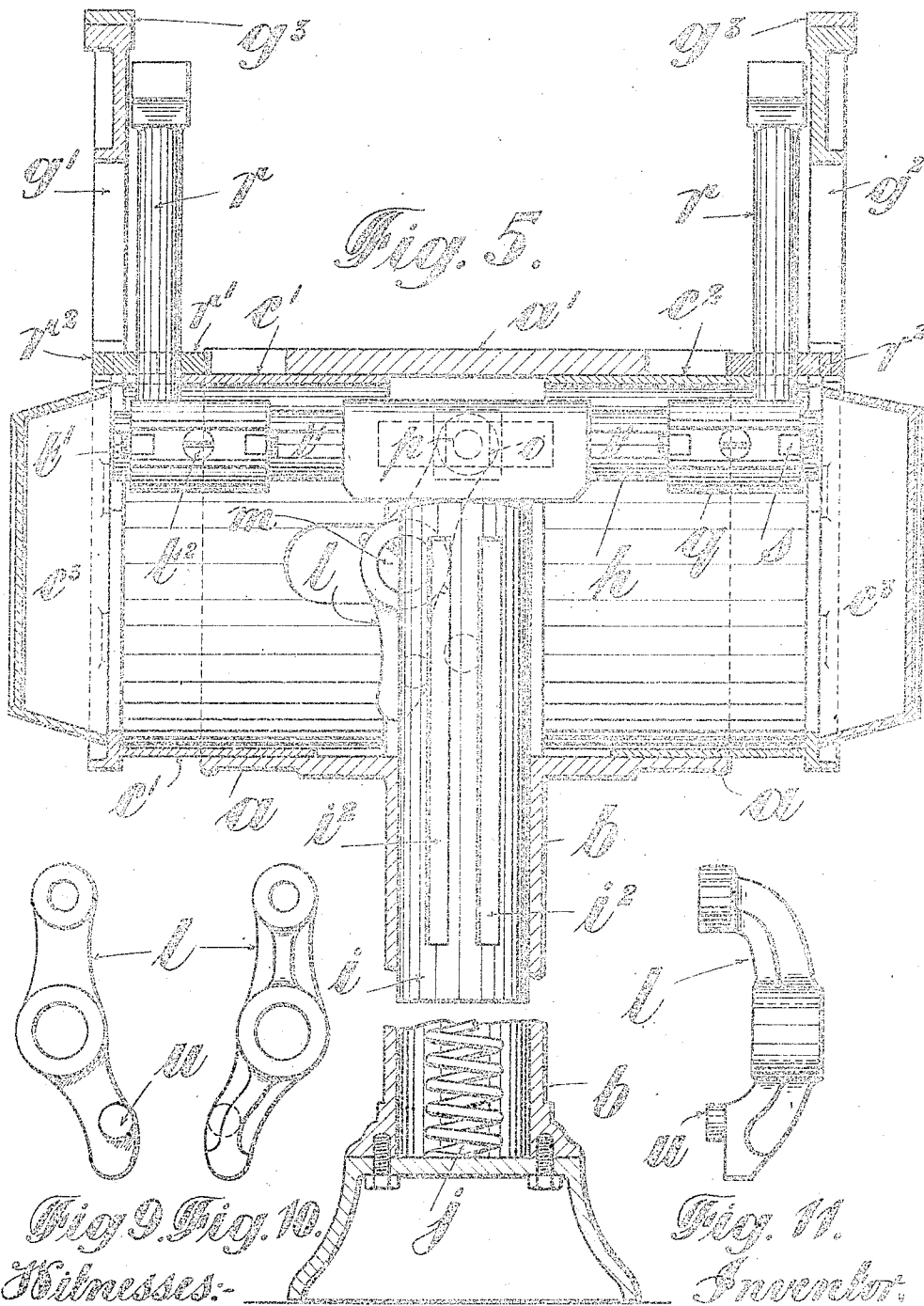
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4 SHEETS—SHEET 4.



Witnesses:-

W. P. Burk
C. C. Smith

Fig. 11.

Inventor:

Stephen Stretles

By his Attorney, [Signature]

UNITED STATES PATENT OFFICE.

STEPHEN STRETTLES, OF MANCHESTER, ENGLAND.

MACHINE FOR USE IN DRAWING PATTERNS IN MOLDING.

942,419.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed February 15, 1909. Serial No. 478,077.

To all whom it may concern:

Be it known that I, STEPHEN STRETTLES, a subject of the King of Great Britain and Ireland, and resident of Manchester, England, have invented certain new and useful Improvements in Machines for Use in Drawing Patterns in Molding, of which the following is a specification.

This invention refers to and consists of a new or improved construction of machine by which patterns can be readily withdrawn from the boxes used in molding, and which can be readily adjusted for use in withdrawing patterns from molding boxes of different sizes.

Upon the accompanying drawing, Figure 1 illustrates a front elevation (partly broken away) of the improved machine with its several parts in the normal, at rest, position and suitable for use in drawing patterns from molding boxes of small dimensions. Fig. 2 illustrates a sectional plan on line *x-x*. Fig. 3 illustrates a transverse sectional elevation of Fig. 1 on line *y-y*. Fig. 4 illustrates a longitudinal sectional elevation of Fig. 2 on line *z-z*. Fig. 5 illustrates a further longitudinal elevation of Fig. 2 but with the parts shown in the position they occupy when supporting the pattern prior to its being withdrawn from the mold, and as adapted for drawing patterns from molding boxes of large dimensions. Figs. 6 to 12 illustrate details separately.

According to the invention, the improved machine consists of a tubular open-ended body part *a*, the interior of which is bored to a true cylinder like the cylinder of an engine. Such body part *a* is mounted horizontally upon any suitable form of support, but preferably upon a hollow pillar or pedestal *b*, the lower part of which is broadened out to form a foot on which the pedestal may rest. Usually the pedestal will be such as to stand upon a floor and support the part *a* at a height suitable to a workman.

The machine also consists of two further tubular parts *c'*, *c''*, which fit one in each of the open ends of the said body part *a*, hereinafter called the cylinder. These two further tubular parts, hereinafter called the slides, fit telescopically in the cylinder ends and are capable of being caused to approach and recede from each other. At its outer end each slide is closed by a cap or cover *c³* held in position by lugs and set screws.

The means used for adjusting the slides may be of any suitable kind. One arrangement consists of lugs or bosses *d* bored and screw threaded transversely and one secured to the interior face of the slide *c'* and the other secured to the interior face of the slide *c''*, the two lugs, when the slides are at their inner position, lying near to each other. The said adjusting means also consist of a screw *e* formed with right and left handed screw threads which respectively screw through the bosses *d* which are screw threaded to suit. The central part of the screw *e*, which is left plain, is held rigidly to the cylinder *a* by a further lug or boss *f*, this latter being so formed and mounted as both to support the screw *e* and when desired clamp the screw against rotation. One or both covers *c³* is or are preferably narrower in one direction than the other in order to allow room for an opening through which the boss of a handle such as *e'* may be inserted to engage the end of the screw *e* which is squared, see Fig. 1. To cover the opening when the handle is removed a small swivel plate *e²* is provided.

In one with or fitted to the slides *c'*, *c''* are the two end frames *g'*, *g''* of the machine upon the top edges of which will rest the molding box from which the pattern requires to be withdrawn. For supporting extra large molding boxes metal strips *g³* may be applied to the top edges of the frames.

Within the cylinder *a* is a bar *h*, see Fig. 4, and in the said pillar support *b* is a rod *i* to which is connected the said bar and which is capable of rising and falling. By means of a spring *j* (or weight) the rod is normally held elevated, thus holding the bar at its highest point within the cylinder. To allow for the use of a long spring the rod *i* is made hollow. Also within the cylinder *a* is a lever *l* mounted upon a stud or axis *m* which passes transversely through the wall of the cylinder and is provided with a handle *n*. Fitted to the said bar, which is suitably recessed to receive it, is a slide block *o*, and with such block loosely engages a pin *p* on one arm of the lever *l*, see Fig. 3. Connected directly to the bar *h*, or to loose sleeves *q* carried by the bar, are two up-rights or posts *r* which extend upward through holes or slots in the cylinder and slides, and when the bar *h* is at its highest

point in the cylinder the top ends of the posts lie on a level slightly below the top edges of the end frames. To such upper ends of the parts is fitted a rectangular frame or plate (not shown) suitable for supporting the pattern plate. Where the posts r pass out of the cylinder they are guided by the arrangement shown in plan in Fig. 12, such arrangement consisting of a fitment r^2 fixed to the end frame and a cap r^3 fixed to the fitment. The sleeves q may be made to inclose the ends of the bar, but they will each preferably be made as shown, and be held to the bar by a V-pointed key piece s slidably fitting a V-groove i' in the bar i and held to the sleeve by set screws t' , t^2 , see Figs. 6 and 7. The set screws t' pass loosely through slots in the ends of the piece s and screw into the sleeve, while the set screw t^2 screws through the sleeve transversely and into the piece s holding it against the rod or freeing it.

In using the improved machine and with the posts r in the position shown in Fig. 5, the molding box is placed on the end frames g' , g^2 , the plate carried by the posts lying immediately below it and being firmly held in such position while the ramming of the mold is taking place. When it is required to draw the pattern from the molding box the handle n is rotated in the direction of the arrow, thereby causing the lever l to be rotated and the bar h , owing to the movement of the pin p , to be lowered and with it the posts and pattern, the spring j within the support balancing the weight until the pattern lies clear of the molding box. The box being removed and a fresh one being placed in position, the pattern is raised by the reverse rotation of the handle n and thus made ready for the next molding operation. Or, if the machine is used for pattern drawing only, the pattern is removed and the plate raised ready for the next box.

To stiffen the cylinder and also afford a suitable support for the pattern to rest upon when fully lowered, the cylinder is provided with flanges a' , the top faces of which lie slightly above the periphery of the cylinder. To prevent the bar and posts moving downward prior to the pattern being lowered, the lever l engages a pin on the rod i , or a pin u on the lever engages a shoulder v in rod i ; see Figs. 4 and 8. To insure of the rod i rising up and down smoothly in the pedestal, small anti-friction rollers w may be provided against which vertical ridges i^2 of the rod may bear. The rollers will preferably be carried by studs w' adjustable by means of screws w^2 in the fixed cap x toward the ridges i^2 , see Figs. 1 and 2.

When the slides c' , c^2 lie at the shortest distance apart the end frames serve to support the smallest size of molding box. To allow of the frames supporting larger sizes

the slides are moved outward by the screw e . In moving the slides c' , c^2 the posts r are also moved, the sleeves q which carry them moving endwise on the bar as the slides are adjusted. By closing the outer ends of the slides, sand, etc., is excluded, and by providing conical end caps they allow of the adjustment of the slides while always covering the ends of the bar h .

To help in arresting the upward movements of the bar and hold it while the molding box is being rammed, also to enable the attendant to release the handle n a small inclined stop y is provided against which the lever l wedges when the bar is fully raised. 80

What I claim is:—

1. A machine for use in drawing patterns in molding comprising an open-ended cylinder, a vertical hollow support on which the cylinder is horizontally mounted, two further cylindrical parts or slides telescopically fitting the said cylinder, end frames carried by the said slides, means for adjusting the said slides longitudinally and further means for holding them in any desired position, a bar within the said cylinder and extending from end to end, a rod centrally connected to the said bar and slidably fitting the said hollow support, a spring for balancing or helping to balance the weight of the rod and bar, and anything carried thereby, a rotary member within the cylinder and adapted to engage the bar, and, on being rotated, raise or lower the bar, uprights or posts carried by the bar and extending through the cylinder wall and on being raised adapted to lie slightly below the top edges of the end frames, substantially as herein set forth.

2. In a machine for use in drawing patterns in molding, an open-ended cylinder, and a hollow vertical support on which the cylinder is horizontally mounted, in combination with two cylindrical slides fitting telescopically within the cylinder, a right and left handed screw, lugs on the slides with which the screw engages and a further lug and a screwed stud and handle by which the screw is supported and clamped, substantially as herein set forth.

3. In machines for drawing patterns in molding, the combination with an open-ended cylinder with openings in the top part and at each end, and a hollow vertical support on which the cylinder is horizontally mounted, of a bar arranged horizontally within the cylinder, a rod connected to the bar and slidably fitting the said hollow vertical support, sleeves adjustably mounted on the bar, uprights or posts carried by the sleeves and projecting upward through the openings in the cylinder, a rotary member within the cylinder and a short stud or axis for such member passing transversely through the wall of the cylinder, and means

whereby the member on being rotated raises and lowers the bar, and with it the posts, substantially as herein set forth.

4. In machines for drawing patterns in molding, an open-ended cylinder and a hollow vertical pillar on which the cylinder is horizontally mounted, a bar arranged horizontally within the cylinder and a rod connected to the bar at right angles and slidably fitting the said hollow vertical support, and said rod having vertical grooves producing vertical parallel ridges, anti-friction rollers and means for adjustably supporting the roller axes, substantially as herein set forth.
5. In machines for drawing patterns in molding, an open-ended cylinder and a hol-

low vertical support on which the cylinder is horizontally mounted, in combination with two cylindrical slides telescopically fitting the cylinder and each slide closed at one end by a cap having an opening for allowing of the insertion of the boss of a turn-key handle, a swivel cover for said opening, and a pair of vertical frames fitted to the slides on which the molding box may rest, substantially as herein set forth.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

STEPHEN STRETTLES.

Witnesses:

F. C. PENNINGTON,
FRED WORRALL.