B. F. PHILPOT.

MOLDING MACHINE FOR CYLINDRICAL PHONOGRAMS.

APPLICATION FILED FEB. 12, 1910.

999,183. Patented July 25, 1911.

Fig. 2.

Fig. 1.

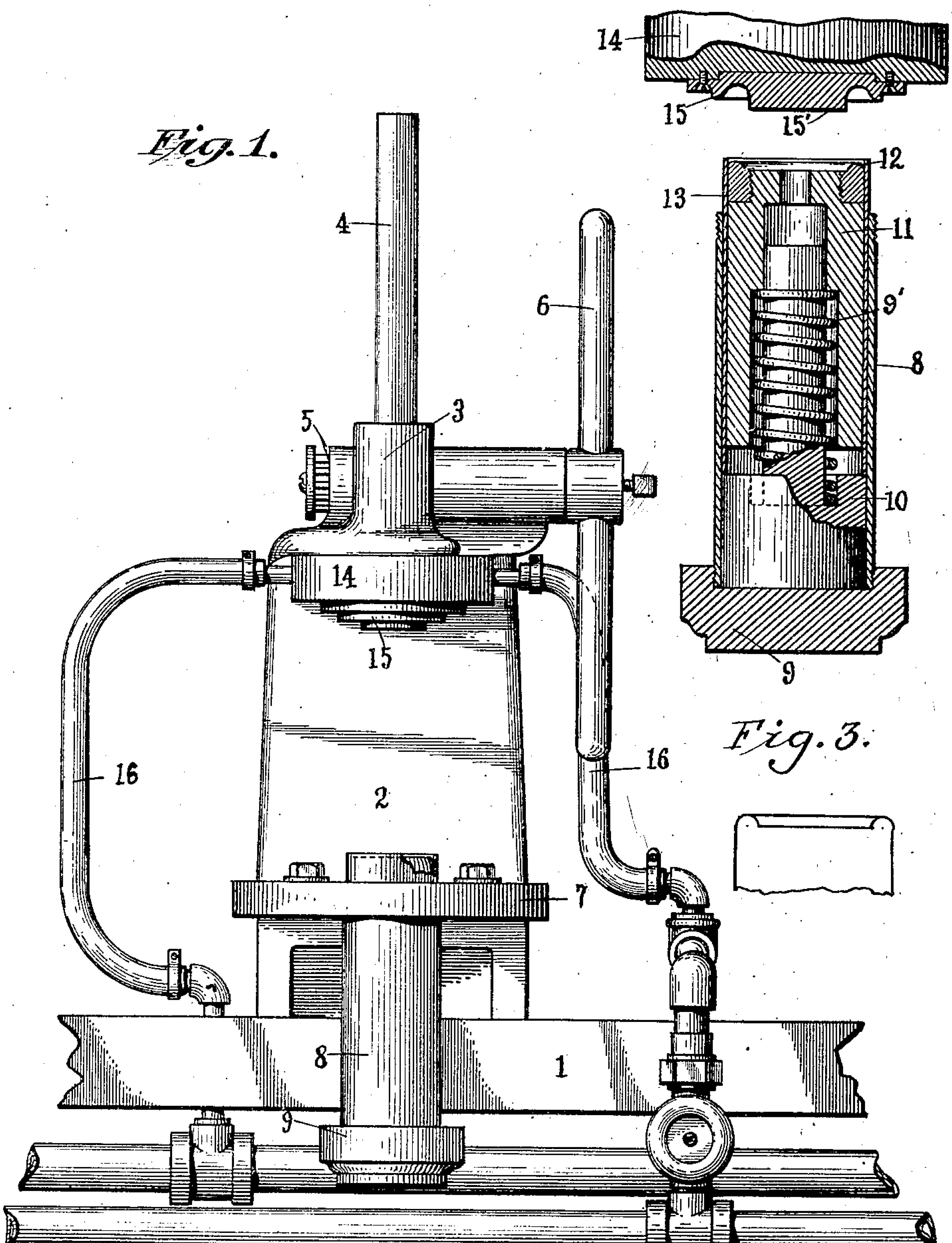

Fig. 3.

Attest:

C. P. Mitchell

Bertha Tenesliekt

Brian F. Philpot, **Inventor:**

by Robt B Killgore **Atty**

UNITED STATES PATENT OFFICE.

BRIAN F. PHILPOT, OF BROOKLYN, NEW YORK.

MOLDING-MACHINE FOR CYLINDRICAL PHONOGRAMS.

999,183. Specification of Letters Patent. Patented July 25, 1911.

Application filed February 12, 1910. Serial No. 543,530.

To all whom it may concern:

Be it known that I, BRIAN F. PHILPOT, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Molding-Machines for Cylindrical Phonograms, of which the following is a specification.

My invention relates to improvements in machines or molding presses for turning in the ends of tubes or cylinders used in making phonograms in accordance with the process disclosed in my application Ser. No. 543,529 filed February 12th, 1910.

My object is the production of a press which will support the extremely thin walls of the tube and smoothly turn the ends in between the dies which are maintained at a pre-determined distance apart while the molding operation is being carried on.

In the drawing Figure 1 is a view of the complete machine, Fig. 2 is a sectional view of the tube holder and molding cap or die, and Fig. 3 shows the end of the tube after it has been turned in.

The machine comprises a base 1 provided with a bearing standard 2 having a bearing box 3 at the upper part. A plunger 4 is actuated by a gear 5 working in a rack on the plunger and reciprocates in the bearing 3, a handle 6 connected with the gear affording means for reciprocating the plunger. A shelf 7 carries the work holding cylinder 8 which is provided with a base 9. The shelf is far enough below the head of the machine to enable the tubes to be slipped in and out of the cylinder. The inside diameter of this cylinder is slightly larger than the outside of the tube to be molded. A mandrel rests inside this cylinder and its outside diameter is slightly less than the inside diameter of the tube being molded. This mandrel consists of a differential plug 10 resting on the base 9 and has a spring 9′ wound around its small diameter. A second plug member 11 rests on the spring and is centered on the small diameter of the plug 10. The upper end of this plug 11 is beaded or rounded to form a male die which may be a separate piece as shown to facilitate renewals. The heating head 14 is attached to the plunger 4 and flexible piping 16 affords means for conveying steam for keeping the head hot. A female die 15 is secured to the head 14 and coöperates with the male die 12.

A tube of the material to be molded is slipped into the cylinder with its upper edge slightly showing above the top as shown in Fig. 2. On lowering the heated head and die the central part 15′ of the female die strikes the spring supported part 11 of the compound mandrel and causes it to telescope against the pressure of the spring.

The thickness of the central boss 15′ determines the space between the operative faces of the dies which should be a few thousandths of an inch more than the thickness of the material being operated upon to enable it to slip freely between the dies and be rolled in and yet prevent wrinkling. The exposed edge of the tube strikes against the flare on the outside of the female die 15 and begins to curl inward over the edge of the male die. On further downward motion of the head the upper part of the mandrel continues to sink and the upper edge of the tube 13 is rolled smoothly between the dies. As the sides of the tube are at all times fully supported between the mandrel and cylinder they have no chance to warp, twist or wrinkle. After the limit of travel is reached the head is raised, the spring lifting the upper member of the mandrel and the tube with its rolled over edge can be removed from the machine.

I claim:—

1. A molding machine for making cylindrical phonogram blanks of celluloid or the like material comprising a frame, tube holding mechanism a die secured to the tube holding mechanism, a heated head movably secured to the frame, a counter die on the head and means for maintaining a predetermined separation between the operative faces of the dies while they are in molding position.

2. A molding machine for making cylindrical phonogram blanks of celluloid or the like material comprising a frame, a cylinder secured thereto, a compound mandrel within the cylinder, the upper member of which is yieldingly supported, a die on the upper member, a heated head, a counter die carried thereon, means for reciprocating said head with respect to the cylinder whereby the material to be molded will be forced between the dies upon the reciprocation of the head, and means for maintaining a pre-determined separation between the operative faces of the dies while they are in molding position.

3. A molding machine for making cylin-

drical phonogram blanks of celluloid or the like material comprising a heated head, a die on said head, means for reciprocating said head, a work holding member alined with said head consisting of a cylinder, a compound mandrel within said cylinder composed of an upper part which telescopes with respect to the cylinder, and a lower supporting part, the cylinder and mandrel being adapted to hold the tube to be operated upon between them, a counter die on the upper member of the mandrel and means for maintaining a pre-determined separation between the operative faces of the dies while they are in molding position.

4. A molding machine for making cylindrical phonogram blanks of celluloid or the like material comprising a heated head, a die on said head, means for reciprocating said head, a work holding member alining with said head consisting of a cylinder, a compound mandrel within said cylinder composed of a lower part of different diameters, a spring on the small diameter, an upper part guided by the small diameter and resting on the spring, and a counter die on the spring supported member, the cylinder and mandrel being adapted to hold the tube to be operated upon between them; and means for maintaining a pre-determined separation between the operative faces of the dies when they are in molding position.

5. A molding machine for making cylindrical phonogram blanks of celluloid or the like material comprising a heated head, a die on said head, means for reciprocating said head, a work holding cylinder rigidly supported in alinement with said head, a compound mandrel in said cylinder consisting of an upper and a lower member, the upper member of which telescopes with respect to the cylinder means for yieldingly supporting the upper member, a counter die on the upper member, the cylinder and mandrel being so proportioned that the tube to be operated upon will fit snugly between the cylinder and mandrel and project above the top of the cylinder and slightly above the face of the die, and means for maintaining a pre-determined separation between the operative faces of the dies when they are in molding position.

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

BRIAN F. PHILPOT.

Witnesses:

ROBT. B. KILLGORE,

A. J. MANFRED.