2 Sheets--Sheet 1.

THOMAS MOORE.

Improvement in Machines for Enameling Mouldings.

No. 120,659. Patented Nov. 7, 1871.

Fig. 1.

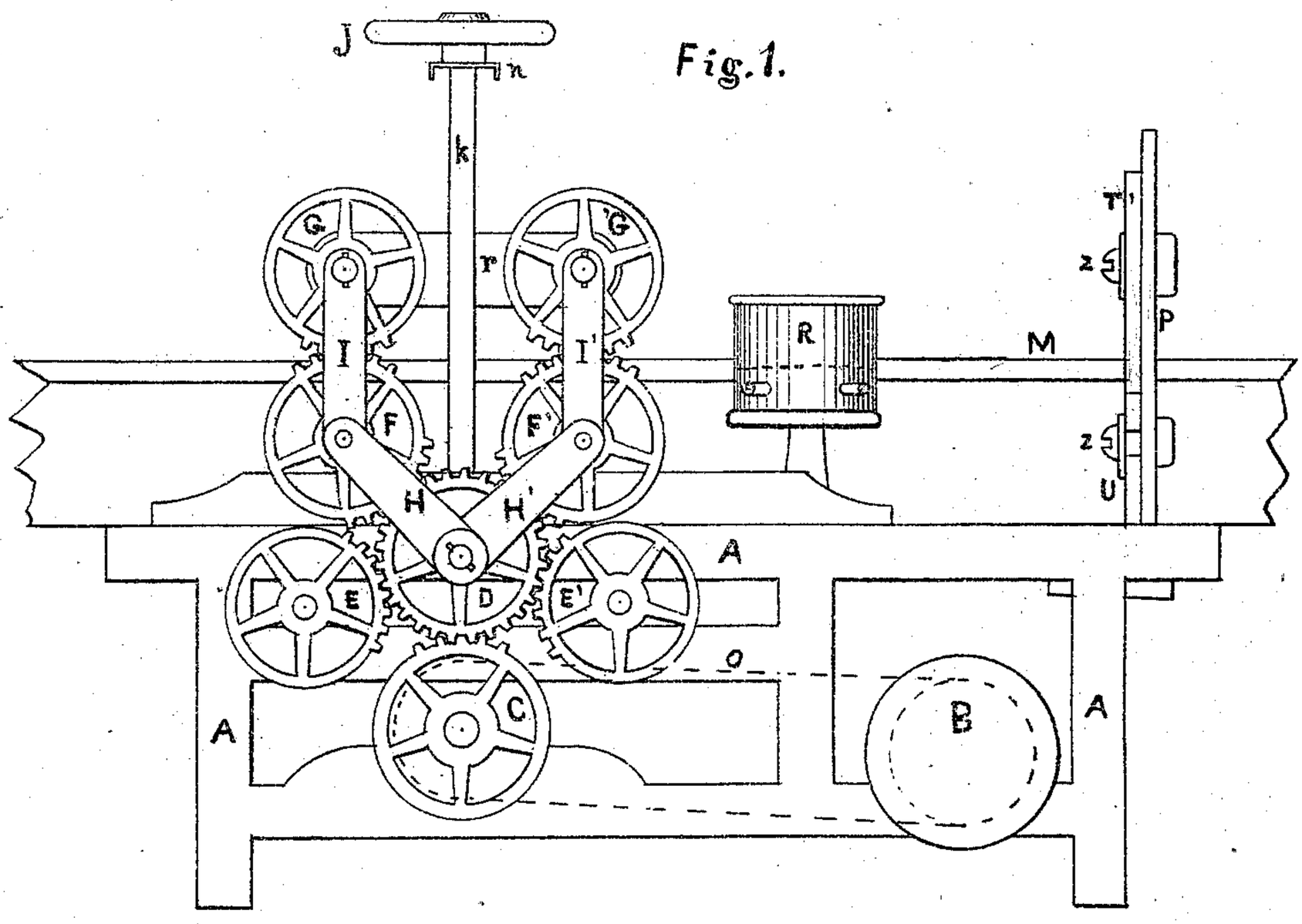
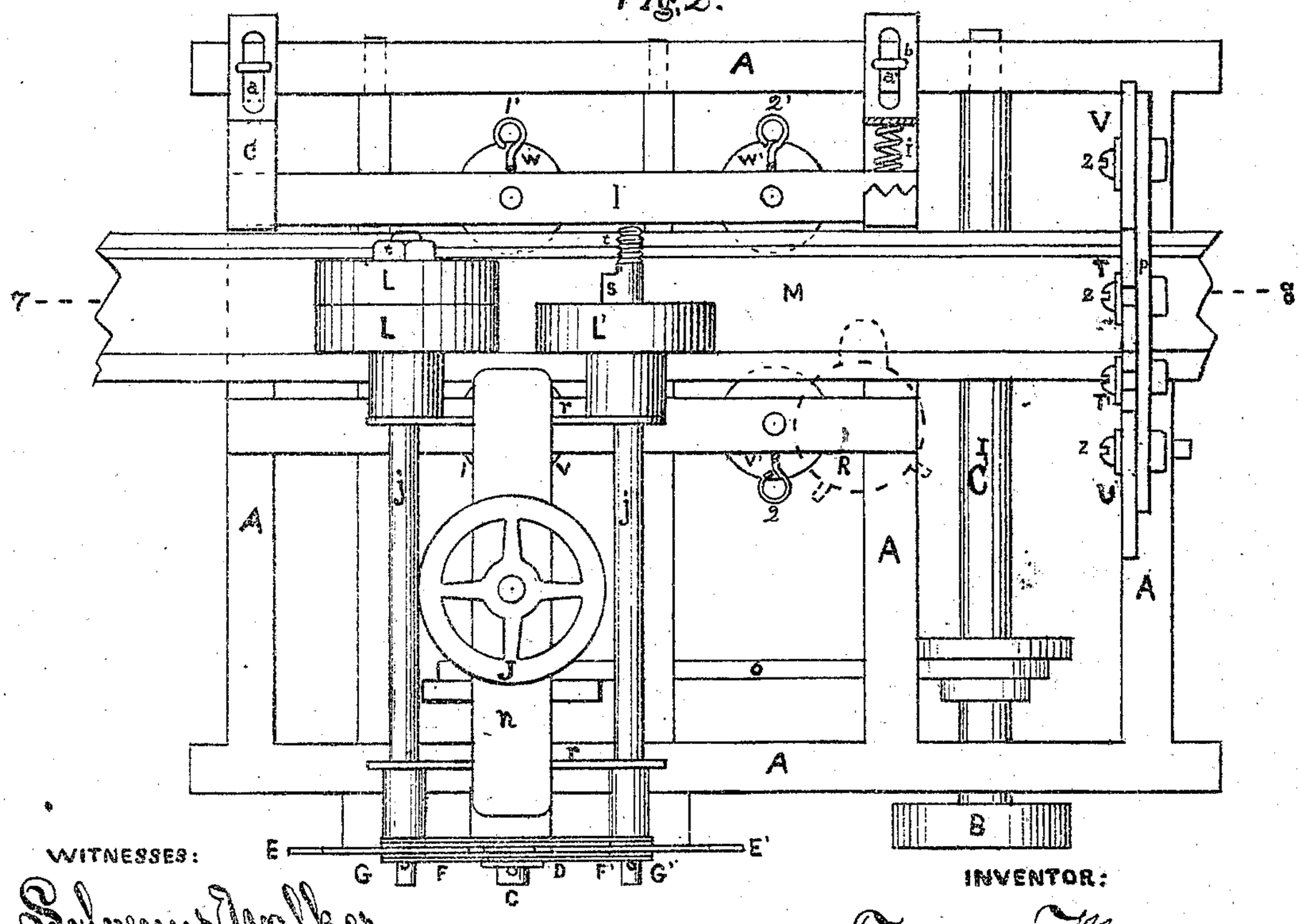


Fig. 2.



WITNESSES:

Sylvenus Walker

D. R. McCready

INVENTOR:

Thomas Moore

2 Sheets--Sheet 2.

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Fig. 3.

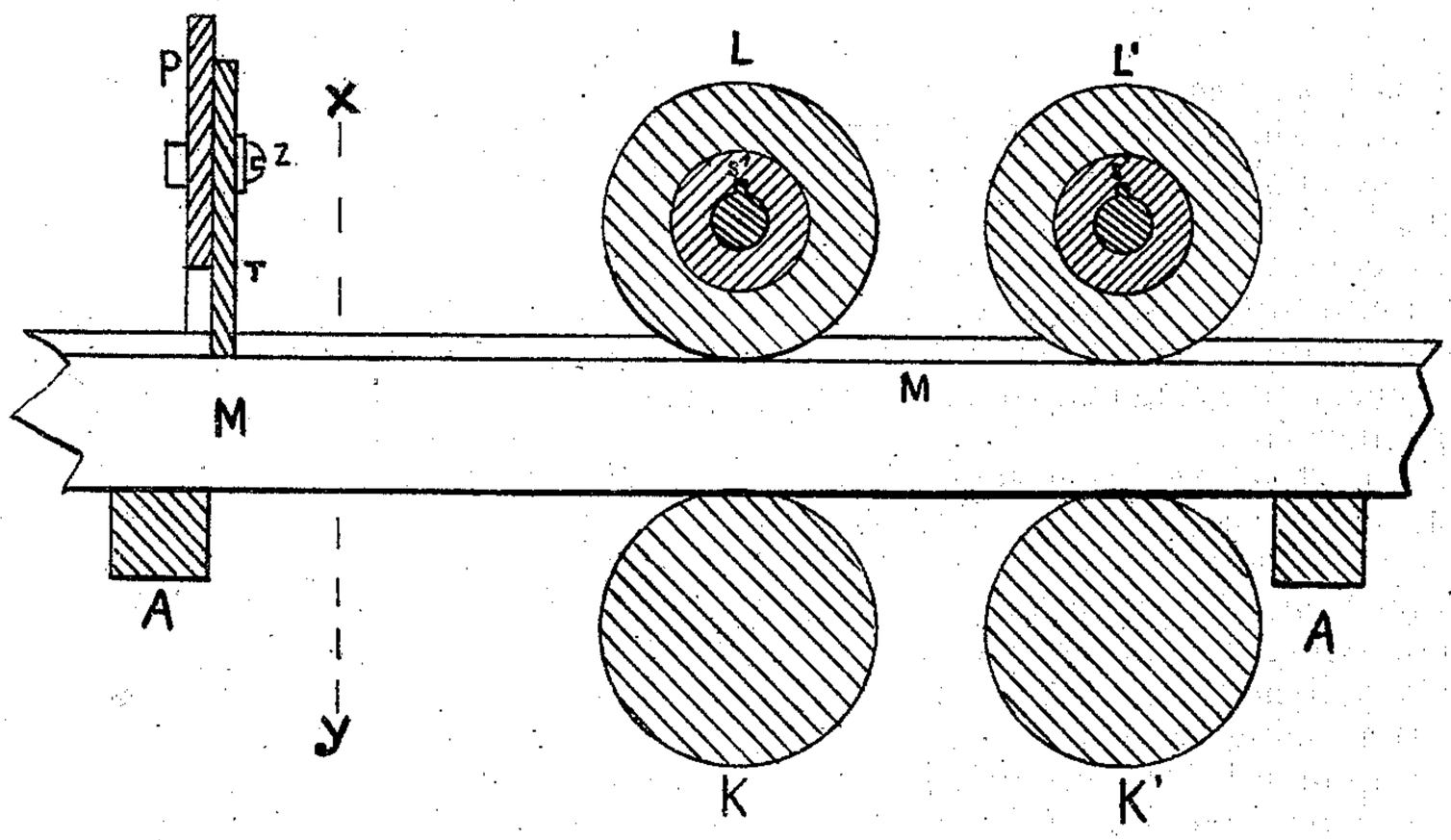
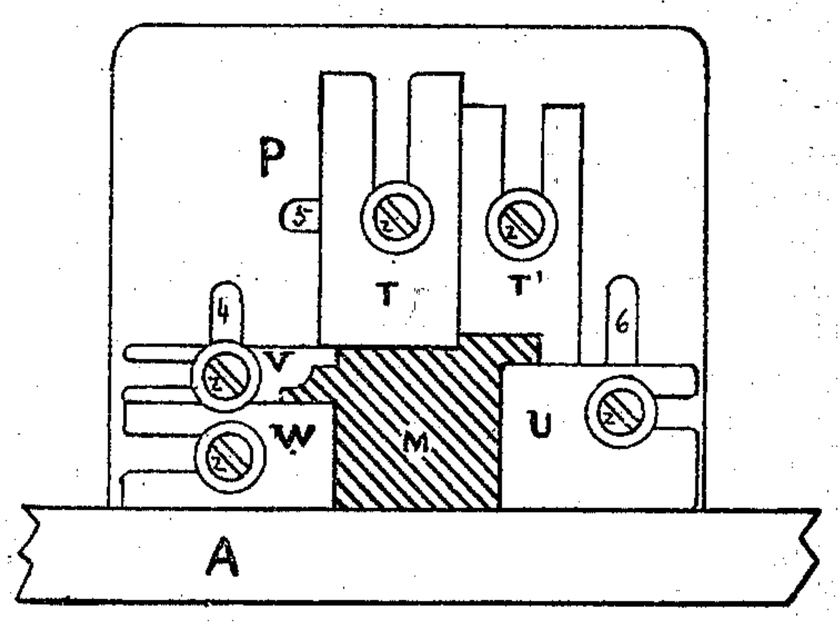


Fig. 4.



WITNESSES:

Sylvenus Walker

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INVENTOR:

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UNITED STATES PATENT OFFICE.

THOMAS MOORE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR ENAMELING MOLDINGS.

Specification forming part of Letters Patent No. 120,659, dated November 7, 1871.

To all whom it may concern:

Be it known that I, THOMAS MOORE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Machines for Enameling Moldings; and the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification.

The first part of my invention relates to an adjustable combination-die in such a manner that the said die shall be capable of adjustment to the exact form of the molding to be enameled; and also of being fitted of steel, then hardened and highly polished; the object of this part of my invention being to insure an equal thickness of enamel upon all portions of the face of the molding and prevent the die from wearing, and also to give the enamel a smooth surface or high polish. The second part of my invetion relates to the combination, with an adjustable combination-die, of elastic feed-rollers, connected to the shaft which carries them by means of a flange and groove, which allows them to be easily exchanged, removed, or replaced, and prevents their turning upon the said shaft. My invention further relates to the combination of adjustable back and front rabbet guide-pulleys; also, in providing either with yielding springs, in combination with adjustable driving-gears, which insure the same speed to the upper and lower driving-rolls, that the molding may be driven with greater force and speed, to produce a high polish and a stronger enamel.

Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a top view of the same. Fig. 3 is a vertical transverse section, showing the molding and driving-pulleys at line 7 8, drawn across Fig. 2. Fig. 4 is a vertical section, showing the combination adjustable die in a line, *x y*, drawn across Fig. 3.

A is the frame of the machine, which frame should be substantially constructed of wood and iron, or wholly of iron, to resist the vibrations of the operating parts. B is the driving-pulley, which is hung on the main shaft C^1 of the machine, from which latter motion is communicated to the gear-wheel C by means of belt *o*. Gear-wheel D connects with gear-wheel C and drive gear-wheels E E′, which are hung on a shaft which carries driving-pulleys K K′; also, in connection with gear-wheel D are the two intermediate gears F F′. These latter have two adjustable connecting-arms, H H′, which admit of their being brought nearer the top of gear-wheel D, thus raising the driving-gears G G′, which connect with the adjustable gears F F′ by means of arms I I′. This is accomplished by hand-wheel J, which is attached to the upper end of a screw-shaft, the lower port of which runs through a corresponding nut in the adjustable frame *r*. This latter frame supports shafts *j j′*, which carry the elastic sectional driving-pulleys L L′, which are provided with a suitable groove to receive the flange *s* upon the shafts *j j′*. These grooves and corresponding flanges *s* prevent the elastic sectional pulleys from turning upon the shaft which carries them, yet allow their removal easily and readily, or their adjustment at varying points upon the shafts *j j′* as the upper surface of the molding M may require. The hand-wheel J has a bearing upon the cross-piece *n* upon the uprights *k k′*, which are provided with suitable grooves to allow the frame *r r′*, carrying the elastic driving-pulleys L L′, to be raised or lowered according to the varying depth or thickness of the molding M to be enameled. *v v′* are adjustable rabbet guide-pulleys, held in position by set-screws 1 2. *w w′* are also adjustable rabbet guide-pulleys, held in position by set-screws 1′ 2′. These latter are supported in an adjustable frame, I, having arms *c c′*, provided with slots *a a′* and set-screws *b b′*. The arms *c c′* are provided with spiral springs *i i′*, which keep the pulleys *w w′* in contact with the molding, but will yield to any irregularities upon the molding in the paths of the guide-pulleys *v v′* or *w w′*. The shafts *j j′* are hung in adjustable bearings, by which they may be elevated or depressed according to the thickness of the molding or the amount of pressure required to drive the molding through the die. R is the reservoir to contain the enamel of glue and whiting. This reservoir is provided with a double bottom, between which steam is admitted by suitable pipes, which serves to keep the enamel hot at the bottom only, as, by means of a suitable spout, it is drawn from the bottom of the reservoir and conducted upon the face of the molding to be enameled. P is a plate of wrought-iron, having an opening cut sufficiently large to admit the molding M to pass through it without coming in

close contact. Toward each side of this plate P is provided oblong openings 4 6. These are arranged perpendicularly. Above these is a horizontal opening, 5. To this plate P is attached, by screw-bolts Z Z Z, hardened-steel pieces or polishers T T′ U V W. The ends of those that come in contact with the face of the molding M are made upon a bevel, being open or furthest from the molding upon the front or face side, to allow the enamel to draw in under their ends. As the molding is driven rapidly beneath them the enamel is pressed upon the face of the molding very solid, and the smooth polished ends leave the enamel, after passing a few times beneath them, very smooth and hard. The pieces W and U are beveled in the opposite direction to the former, and scrape the enamel from the rabbet upon either side of the molding. The polishers and scrapers are provided with slots in their outer ends, to allow their adjustment to the molding with a nicety, so as to insure each pattern of molding to fit exactly with any piece of the same pattern (when cut and joined) previously enameled. This plate P is attached in a firm manner to the rear of the frame A, and holds the polishers T T′ V and scrapers U W, the whole forming an adjustable combination-die. In Fig. 2, one section of the elastic driving-pulley is removed, to show the flange *s* upon the driving-shaft *j′*. Power being applied to the driving-wheel B, the driving-pulleys K K′ and L L′ are driven in opposite directions, K K′ underneath, and the elastic faced L L′ above. The molding is driven with great speed and force through the die. The elastic-faced pulleys may be pressed firmly upon the enameled surface without injuring it. Thus I am enabled, by means of my improved machine, to produce a superior article of enameled molding, prepared for gilding or otherwise, at a great reduction in cost from that heretofore produced.

Having thus described my invention, I claim—

1. The adjustable combination-die, composed of plate P, steel polishers T T′ V, and scrapers U W, made adjustable by means of slots and secured with screw-bolts Z Z Z Z Z or their equivalents, substantially in the manner as and for the purposes hereinbefore set forth.

2. In combination with the foregoing claim, the flanges *s s′* upon driving-shafts *j j′*, and corresponding grooves in elastic section-pulleys L L′, substantially in the manner as and for the purposes set forth.

3. In combination with the above claims, the gear-wheels C and D, combined with gear-wheels E E′, F F′, and G G′, when connected by arms H H′ and I I′ carrying driving-pulleys K K′ and L L′, frame *r r′* carrying shafts *j j′*, adjustable in guides or grooves in uprights *k k′* by means of screw-shaft and hand-wheel J, substantially in the manner as and for the purposes set forth.

4. In combination with the foregoing, the rabbet-pulleys *v v′*, in combination with the adjustable yielding rabbet guide-pulleys *w w′*, the frame 1 *c c′*, and springs *i i*, when combined and arranged substantially in the manner as and for the purposes hereinbefore set forth.

THOMAS MOORE.

Witnesses:
SYLVENUS WALKER,
JOS. H. WHITMAN.

(54)