

(No Model.)

2 Sheets—Sheet 1.

J. B. HEIBECKER.

MEANS FOR OPERATING DISPLAY FIGURES.

No. 535,699.

Patented Mar. 12, 1895.

Fig. 1

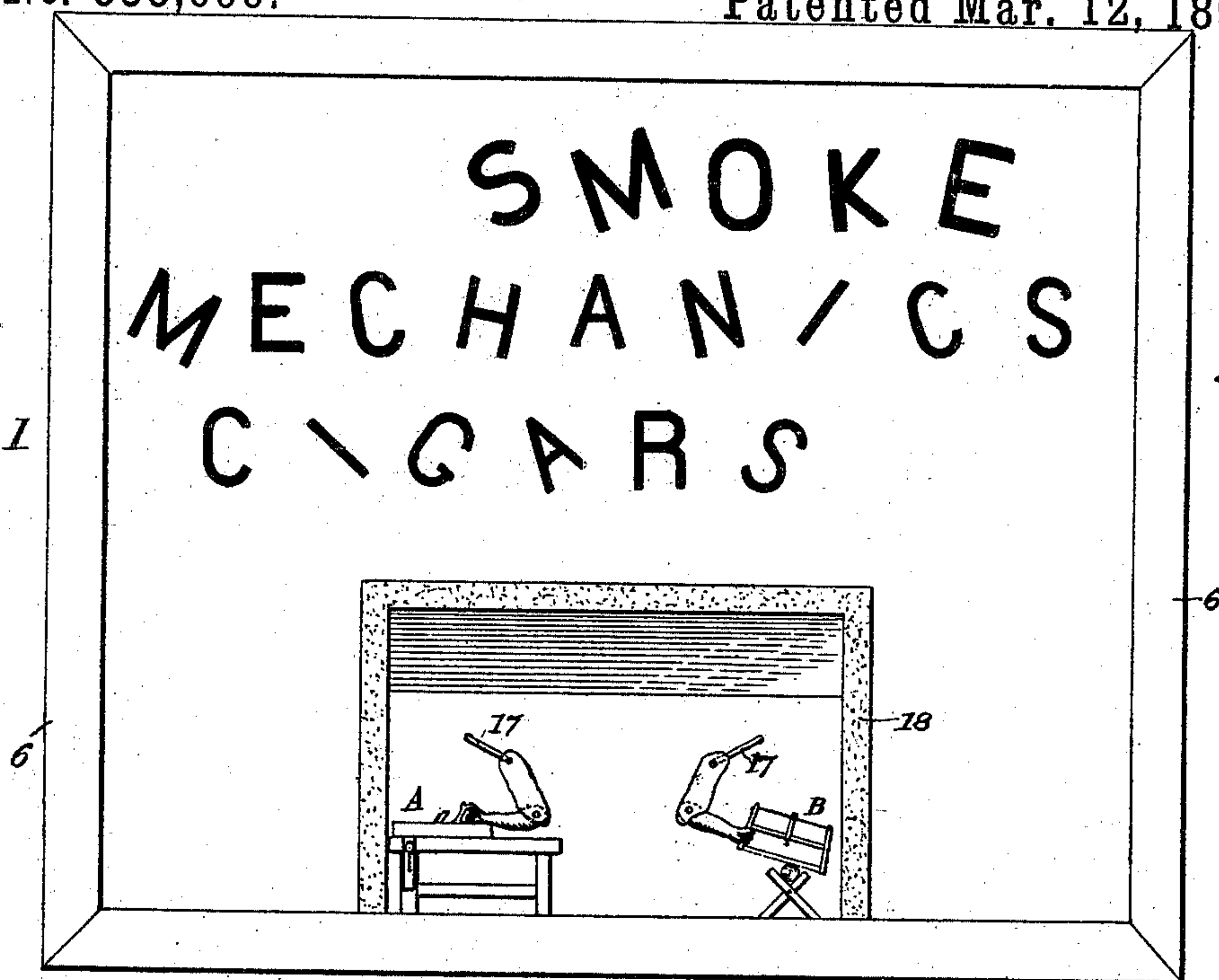
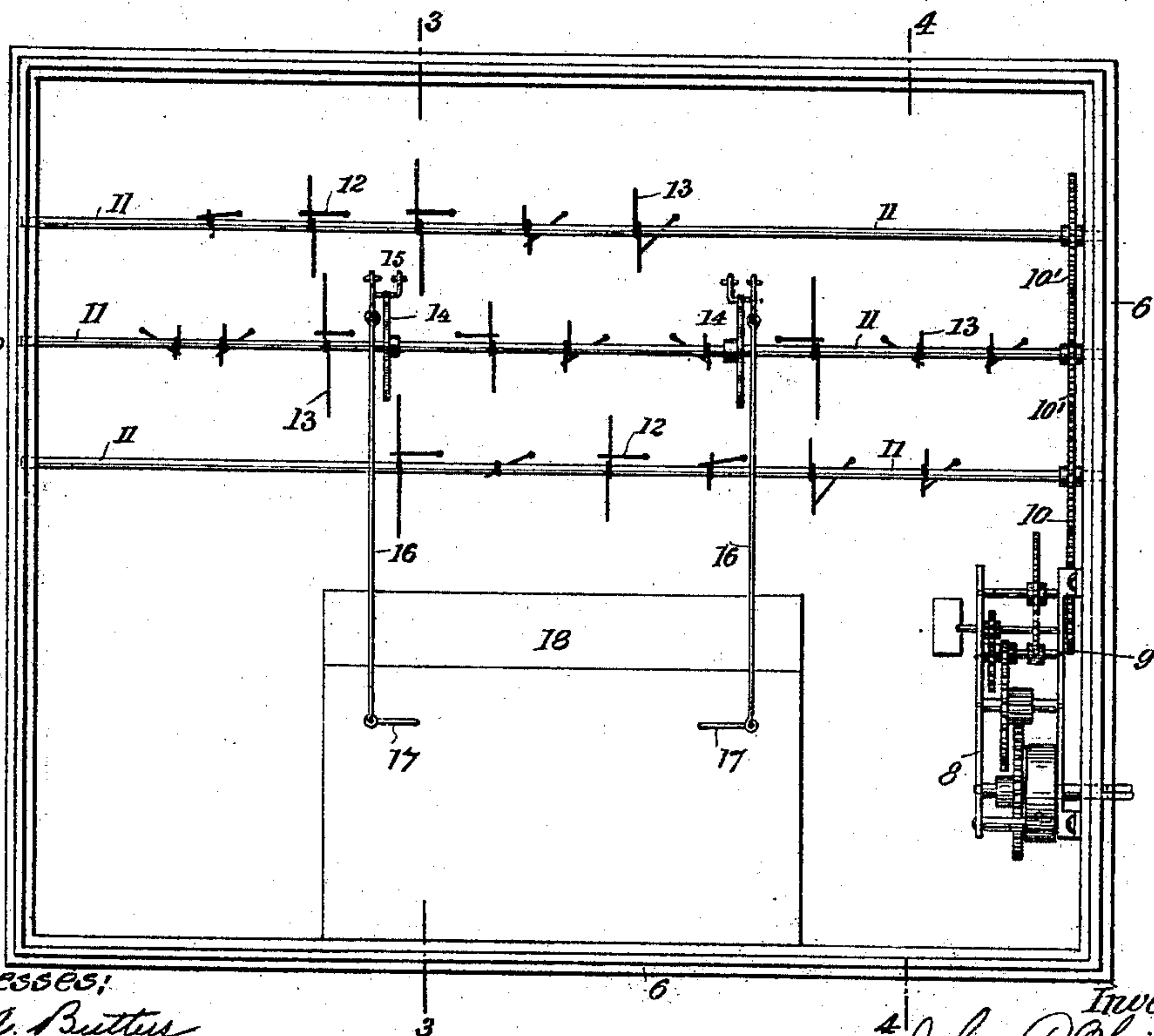


Fig. 2



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3

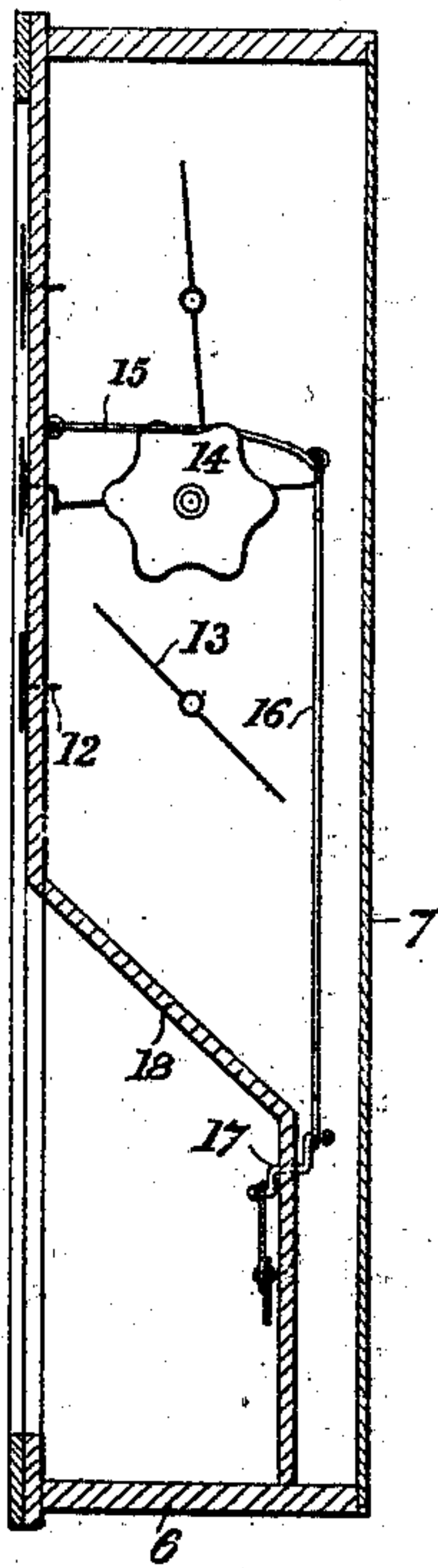


Fig. 4

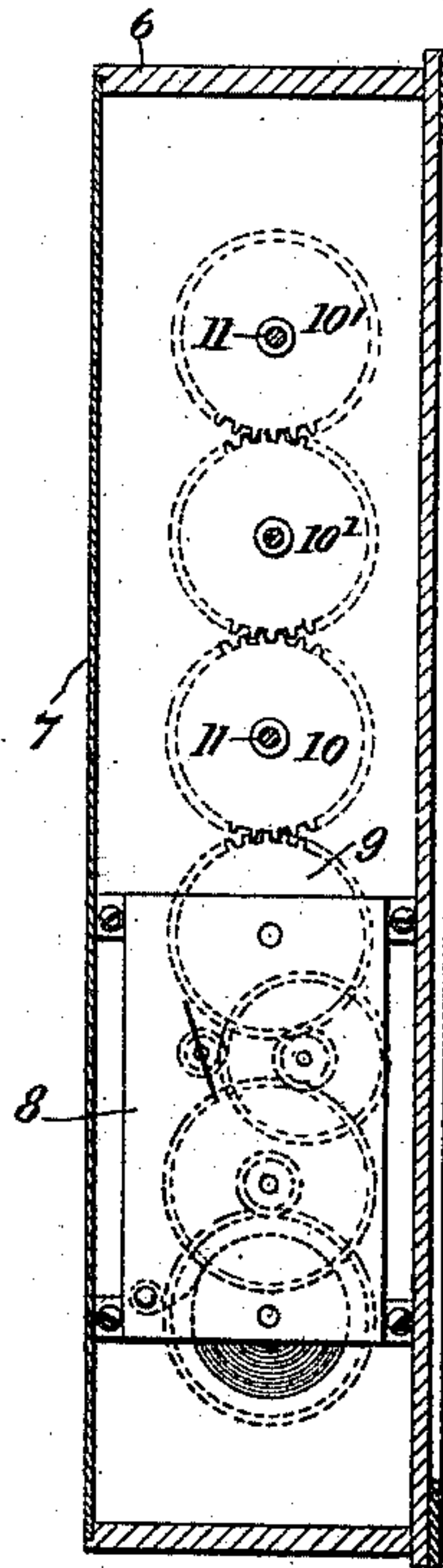
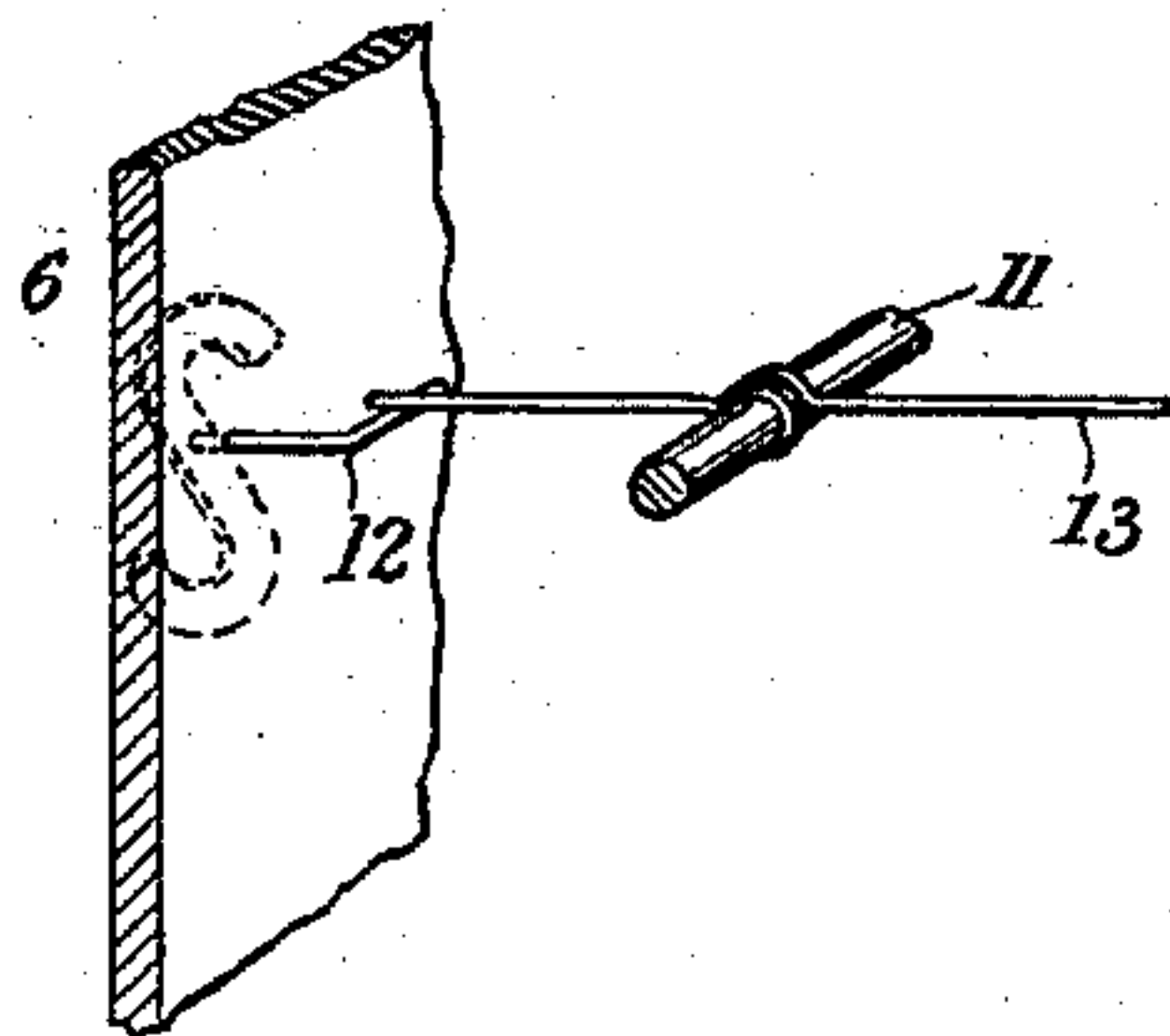


Fig. 5



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UNITED STATES PATENT OFFICE.

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MEANS FOR OPERATING DISPLAY-FIGURES.

SPECIFICATION forming part of Letters Patent No. 535,699, dated March 12, 1895.

Application filed May 15, 1893. Serial No. 474,184. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. HEIBECKER, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Means for Operating Display-Figures, of which the following is a specification.

My invention relates to means for operating display figures for show-windows, house ornaments and the like. The mechanism is adapted to be combined with movable letters, figures and symbols, and with various parts of figures of animals, whereby at stated intervals the various figures, letters or symbols may be caused to partake of revolving or reciprocating movements, and the various parts of figures of animals may be caused to describe any desired movement.

The object of the invention is to produce signs for advertising purposes that are adapted by their movable parts to attract the attention of the public; the invention being also applicable to various articles of use in the household which it may be desired to provide with movable figures which may be set in operation at pleasure for the purpose of amusement or instruction.

The invention is illustrated in the annexed drawings and described hereinafter, and in the claims are pointed out the novel features for which protection is desired.

In the drawings, in which like characters indicate like parts in the several views, Figure 1 is a front elevation of a sign embodying my invention and showing a series of movable letters and certain symbols also adapted to be moved when the mechanism is set in motion. Fig. 2 is a rear elevation of Fig. 1 showing the mechanism whereby the letters and figures are operated, the said mechanism including a clock-work and a series of horizontal shafts. Fig. 3 is a cross-section on the line 3, 3, of Fig. 2 looking in the direction of the arrow. Fig. 4 is a cross-section on the line 4, 4, of Fig. 2, and Fig. 5 is a detail showing a fragment of one of the horizontal shafts, and an operating wire mounted thereon and co-operating with a wire supported in the frame work of the case and having attached to its outer end a letter which is adapted to be revolved as hereinafter explained.

Referring to the drawings, 6 indicates the frame-work of a display sign which in this instance consists of a shallow box of the requisite dimensions, and 7 the movable back of the case. In one end of the case there is suitably mounted a clock-work mechanism 8, the driving wheel 9, on the main shaft of said mechanism meshing with the gear-wheel 10 mounted on the lowermost of the series of horizontal shafts 11, the other shafts of the series being also provided with intermeshing gear-wheels 10'. While the gear-wheel 10 on the main shaft of the motor is shown gearing directly with the gear-wheel on the lowermost horizontal shaft 11, said wheel 10 may be adapted to gear with a smaller wheel mounted on the extreme end of the said lowermost shaft 11, thus giving to the said shaft an increased speed in a manner well understood.

The horizontal shaft 11 extending from side to side of the frame-work of the case—there may be one or a number of these shafts according to the nature of the matter to be displayed—is a distinctive feature of my invention and by its employment in conjunction with a simple form of gearing and a motor such as a clock-work mechanism to transmit motion to the display figures, the letters of a sign, for example, I am enabled to operate display figures in a cheap and effective manner. By the use of intermeshing gear-wheels in conjunction with the horizontal shaft or shafts I am enabled to regulate the movements of the figures to be displayed and with the requisite degree of speed, and with greater regularity than if the cranks for operating the letters or figures had motion imparted to them directly from the main shaft of the motor.

The letters comprising this sign are mounted in the face of the case on bent wires 12, adapted to be rotated freely, one angle of the same extending within the case as shown in Fig. 5; and motion is communicated to these letters by the wires 13, secured to the horizontal shaft 11, when the latter is rotated by the motor. The wires 12 are fastened to the letters above their vertical centers and the inner ends of said wires which are acted upon by the wires on the shaft 11, are bent either to the right or to the left as may be required to balance the letters. The shaft 11 is provided

with as many operating wires 13, as there are letters or symbols to which motion is to be given.

For the purpose of operating display figures employed in connection with the letters of the sign or independently, the shaft 11 is provided with disks 14, which are adapted to coact with the pivoted wire brackets 15, supported against the rear of the face of the case as shown in Fig. 3. The wire bracket 15 is pivoted to a rod 16, which at its lower end is pivoted to one end of the angular wires 17, the opposite end of which extends through the frame work 18 arranged in the bottom of the case 6, and within which the display figures may be located, the figures being connected to the outer ends of the wires 17, as shown in Figs. 1 and 3.

The requisite motion is imparted to the display figures A, B, by the peculiar conformation of the circumference of the cam disks 14, which as will be understood co-act with the pivoted frame 15, when the shaft upon which the disks are mounted is revolved. The cam surfaces of said disks are here shown to be curving gradually inwardly as well as outwardly, whereby gradual and reciprocating motion is imparted in both directions to the figures operated thereby; but it will be seen that any other suitable form of cams may be employed in order to produce such movement of the figures as may be desired and as may best correspond with their character. As said frames 15 are connected to the rods 16, which in turn are connected to the cranks or bent wire pieces 17, whose outer ends are joined to the figures to be operated, the said figures are consequently moved in conformity to the raising and lowering of the frame 15 by the revolution of the disk 14 beneath the same as the shaft is driven by the motor, the speed of the shaft as before explained being regulated by the character of the gearing between the shaft and motor.

In operation, as the shaft or shafts 11 are revolved the wires 13 strike with a slight touch the inner ends of the wires 12 upon which the letters, &c., are mounted in the face of the casing, and the said letters are thus caused to revolve irregularly and at varying speeds. The movements of the display figures are regular and uniform by reason of the construction of the disks 14 and their co-operation with the pivoted brackets 15.

By employing the same horizontal shaft or shafts for imparting movement to the wires

direct which actuate the letters of the sign and for revolving at the same time cam disks through which any desired mechanical movement can be given to the display figures, a pleasing and attractive combined effect can be produced by the simultaneous movement of such letters and such figures.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus of the character herein described, the combination with a casing, of a horizontal shaft mounted longitudinally within said casing and provided with wires arranged at intervals along its length, of letters, symbols, and the like, supported in the face of the casing on pivoted wires having ends extending into the casing and adapted to be acted upon by the wires secured to said shaft and a motor for driving the said shaft, substantially as set forth.

2. The combination with the casing, a series of horizontal shafts arranged longitudinally within the casing and provided with intermeshing gearing at one end and with wires arranged on the shafts at suitable intervals and a clock-work mechanism supported in the casing and geared to a gear-wheel on the lowermost shaft, of display figures, letters or symbols supported on wires in the face of the casing, the said wires extending through the casing and adapted to be operated by the wires on said horizontal shafts, substantially as set forth.

3. In an apparatus of the character herein described, the combination with a casing, of a horizontal shaft mounted longitudinally within said casing and provided with wires arranged at intervals along its length, of letters, symbols, and the like supported in the face of the casing on pivoted wires having ends extending into the casing and adapted to be acted upon by the wires secured to said shaft, and a cam wheel arranged on said shaft, a display figure supported in the face of the casing and means for imparting motion from the cam disk to said figure, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 10th day of May, A. D. 1893.

JOHN B. HEIBECKER.

Witnesses:

JULIUS G. KNUTH,
J. E. M. BOWEN.