(No Model.)

J. I. WOODFILL.

MANIFOLD COPYING DEVICE.

No. 355,749. Patented Jan. 11, 1887.

Fig. 1.

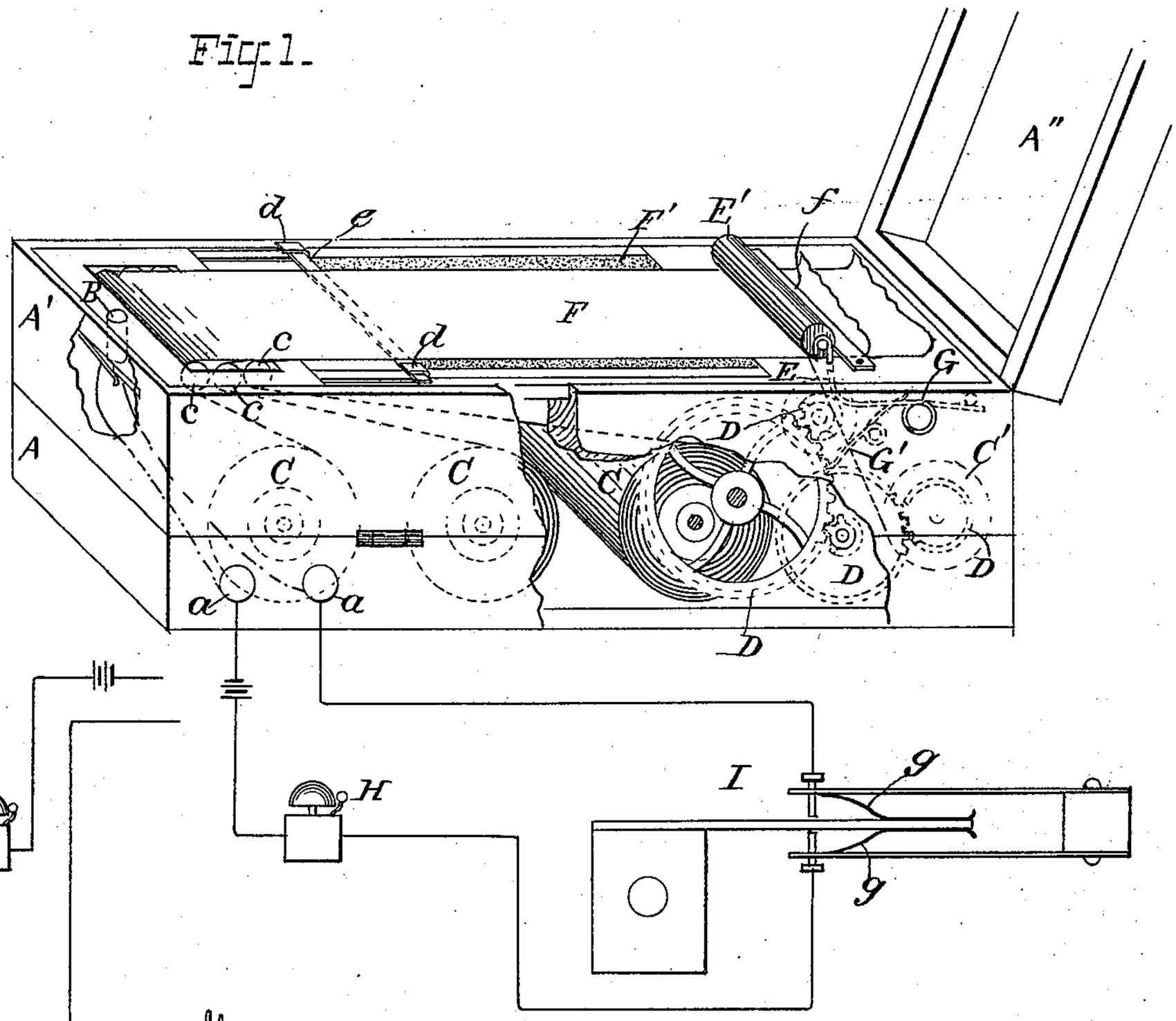


Fig. 2.

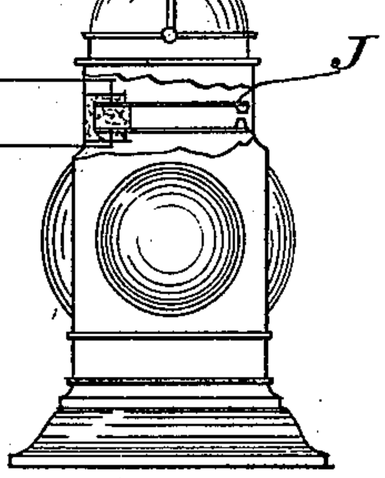
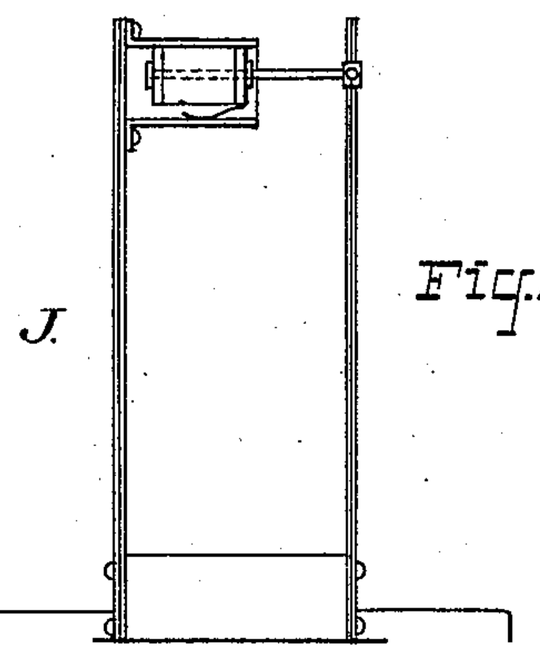


Fig. 3.



ATTEST:

J. A. Murdle

Edward P. Thompson.

INVENTOR:

John I. Woodfill,

by his Attorney.

W. J. Johnston

UNITED STATES PATENT OFFICE.

JOHN IRONS WOODFILL, OF JUNCTION CITY, MISSOURI.

MANIFOLD-COPYING DEVICE.

SPECIFICATION forming part of Letters Patent No. 355,749, dated January 11, 1887.

Application filed August 13, 1885. Serial No. 174,243. (No model.)

To all whom it may concern:

Be it known that I, JOHN IRONS WOODFILL, a citizen of the United States, and a resident of Junction City, county of Greene, and State of Missouri, have invented certain new and useful Improvements in a Manifold-Copying Device, of which the following is a specification.

My invention relates to that class of copying devices provided with continuous sheets of tissue-paper adapted to be passed under and above carbon paper, so that by writing upon the upper sheet copies of the writing are produced upon the under sheets. By turning a mechanism the copies are propelled, the one to a preserving-roller and the others to a point where they are torn off and dispatched by messengers.

The object of the invention is to so improve this class of apparatus that the adjustments may be easily performed, and so that the maximum amount of copying may be executed in the minimum space.

The device, generally, embraces the combination of a rectangular wooden principal box, a cover hinged to the same and containing most, if not all, the operating mechanism, consisting of rollers and gearing, as described subsequently, and a second cover for covering up the writing-tablet, which is located upon said first cover.

In order to illustrate the practical manner of carrying out my invention, drawings are hereunto annexed and described, in which similar letters of reference represent corresponding elements, and in which each part referred to is designated by a single letter.

Those parts not mentioned I do not claim in this my present application.

The materials of construction employed, the exact forms of design, and the proportional dimensions are not alluded to in every instance, as they are best determined upon by those versed in the art.

Figure 1 shows a general view of a train-order box or multiple-copying device and signal-connections, the containing-case being partly broken away, as shown. Fig. 2 shows a modification of said signal-connections, and Fig. 3 shows a form of thermostat which may be employed in place of the ordinary thermostat.

A is a box having two covers, A′ and A″, and provided with two binding-posts, *a*. The cover A′ is provided with a push-button, B, adapted to operate a circuit-closer connected with the binding-posts *a;* with three rolls of paper, C, from which paper is fed out; with a fourth roll, C′, upon which paper is adapted to be rolled; with mechanism consisting of gear-wheel D, for operating the roll C′ and the press-roller E, located just below the roller E′; with rollers *c*, supported in an opening in said cover; with sheets of paper F, (obtained by unrolling the rolls C,) lying upon the surface of said cover and having carbon-paper F′ between said sheets; with hooks *d*, secured to the top of said cover and adapted to retain the strip *e*, to which the carbon-paper is attached; with a cutting-edge, *f*, arranged beyond the roller E′, located upon the top of said cover, for the purpose of cutting off paper, as desired, after having been pulled under the said roller; with a spring, G, adapted to hold the roller E′ in position, and with a similar spring or catch, G′, to allow the mechanism to be operated in one direction only. The cover A″ serves not only the ordinary services of a cover, but also serves to operate the push-button B by pressing it downward and closing the circuit when the cover rests upon said button.

A sheet of carbon-paper may be placed between every two sheets of paper from the rolls C in the well-known manner, but, preferably, by having each sheet of carbon-paper secured to a strip, *e*, which is held by the hooks *d*. Only one strip is shown, for they are all exactly alike.

The binding-posts are connected electrically with an electric bell, H, and a circuit-closer, which may be either two springs, *g*, adapted to be separated by the flag-pole I, or a thermostat, J, arranged in a lantern.

The operation consists in writing upon the sheet F, forming characters, by the assistance of the carbon-paper, upon all the sheets of paper; in propelling the mechanism at the right-hand end of the box, thereby causing the paper to travel longitudinally, while the carbon-paper remains stationary, the paper from the rolls C passing under the cutting-edge *f*, except the under sheet, which passes upon the roller C′, so that one of the copies may be preserved, and in tearing off the copies at the cutting-edge. The object of having the cir-

cuit-closer attached to the box is to provide an alarm or signal, as now to be explained.

The dispatcher calls an office, and tells him to make two or more copies. The operator opens the box, thereby setting the bell to ringing, because when the cover A″ is raised the push-button B rises and closes the circuit-closer. Then it is necessary to stop the disagreeable noise of the bell before he can take the order, thus making it improbable that he will neglect putting the flag-pole I, of insulating material, between the springs *g*. The bell then stops ringing. At night, when a lantern is used, the circuit is kept open by a thermostat, so if an operator has an order to hold a train, he puts out the lantern at some time convenient. Should the light fail to burn, the thermostat closes the circuit and causes an alarm in the office.

The operation of the propelling mechanism is: When the wheels D are turned, they propel both the rolls C′ and roller E, the consequence being the passage of all the paper sheets between the rollers E and E′ and the winding up of one of the sheets upon the roll C′, the remainder of the sheets passing under the cutting-edge *f*. It may be noticed that the wheels D gear into each other, a portion of the teeth being shown on each wheel, and that the larger one gears in the same manner into teeth upon the end of the roller E. The paper sheets unwind from the rolls C, because they pass tightly between the rollers E and E′.

The system of signaling and the special form of thermostat shown in Fig. 3 I do not claim in this present application, as they will form the subject-matter of future applications.

Having now stated the object of the said invention; having described its practical realization by reference to the accompanying drawing; having particularly ascertained the manner in which the same operates to accomplish the said object, and having intimated that it is applicable to other purposes than those mentioned, what I consider to be novel and original, and therefore claim as my invention, secured to me by the hereinbefore, in part, recited Letters Patent of the United States, is—

1. In a multiple train-order box, the combination of a box proper, A, a first cover, A′, attached to said box and supporting the copying apparatus, and an inclosing second cover, A″, to said first cover, substantially as described.

2. In a multiple train-order box, the combination of a box proper, A, a first cover, A′, to said box, rolls C, bearing webs of paper supported within said cover, rollers *c*, supported in an opening in the top of said cover, the paper from said rolls passing over said rollers, hooks *d*, secured to the top of said cover, and a strip, *e*, fitting into said hooks, carbon-paper being attached to said strip and lying between sheets of paper in the ordinary manner, a receiving-roller, C′, and propelling-rollers E and E′, said receiving-roller and said propelling-rollers being geared to common driving-wheels, D, and, together with said wheels, being secured to said cover A′, and an inclosing-cover, A″, attached to said first cover, a pressure-spring, G, being connected to the roller E′, and a catch-spring, G′, to one of the wheels D, substantially as and for the purpose described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two witnesses.

JOHN IRONS WOODFILL.

Witnesses:
W. H. JOHNSON,
JNO. M. SMITH.