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J. H. Dow,

Operating Fan Tremolos.

No. 102,096. Patented Apr. 19. 1870.

Fig. 1.

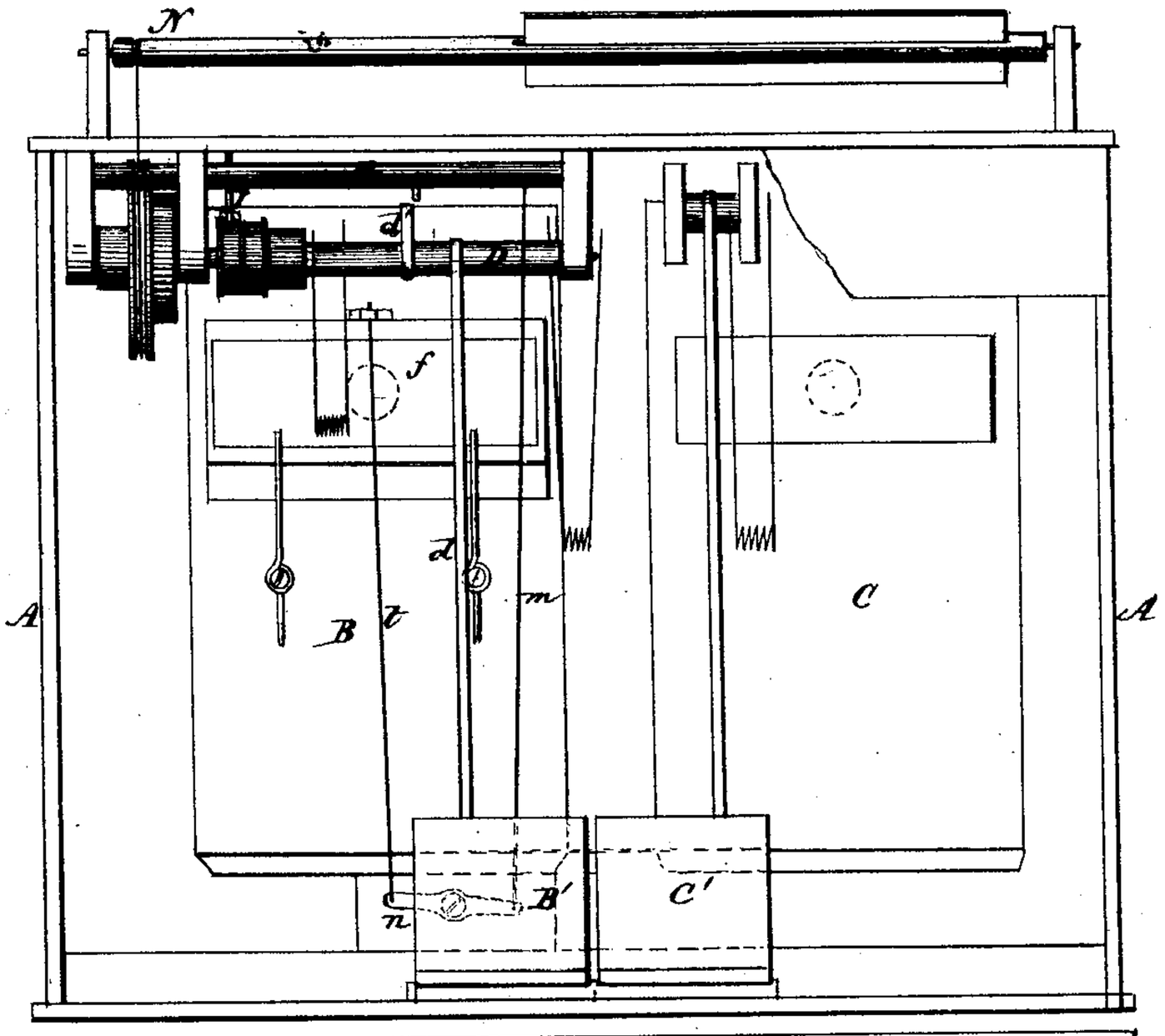
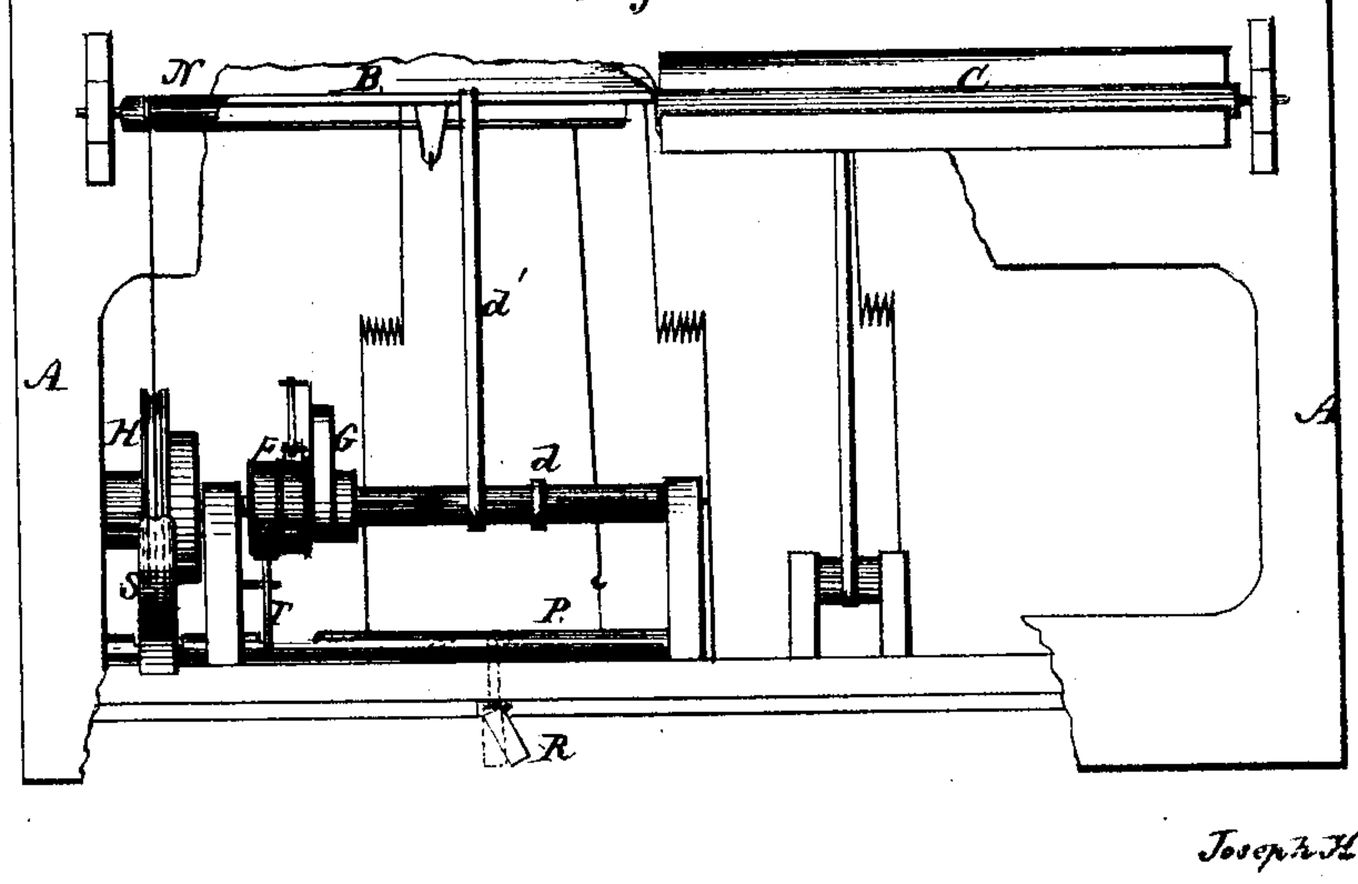


Fig. 2.



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2. Sheets. Sheet. 2.

Operating Fan Tremolos.

No. 102,096. Patented Apr. 19. 1870.

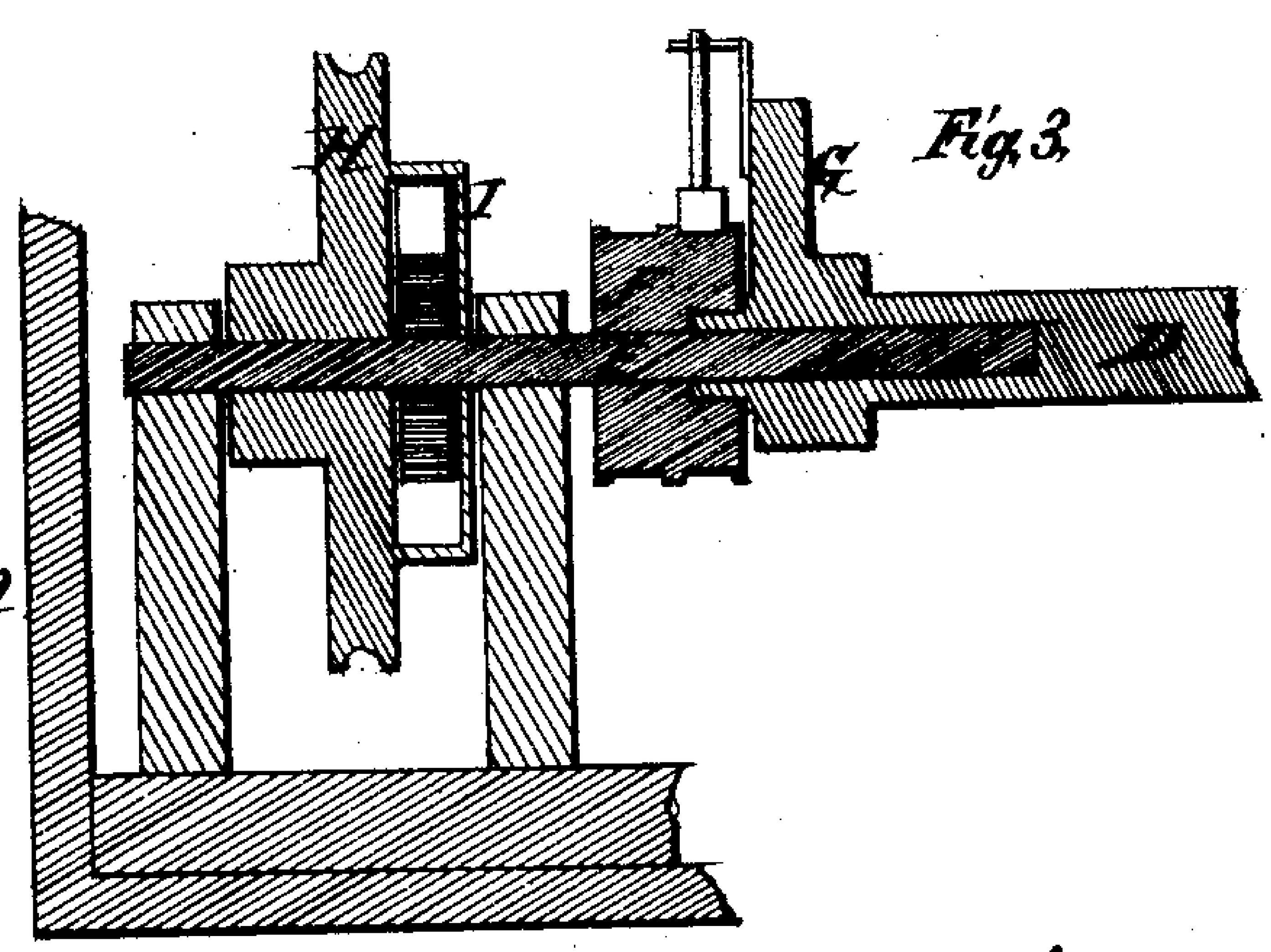
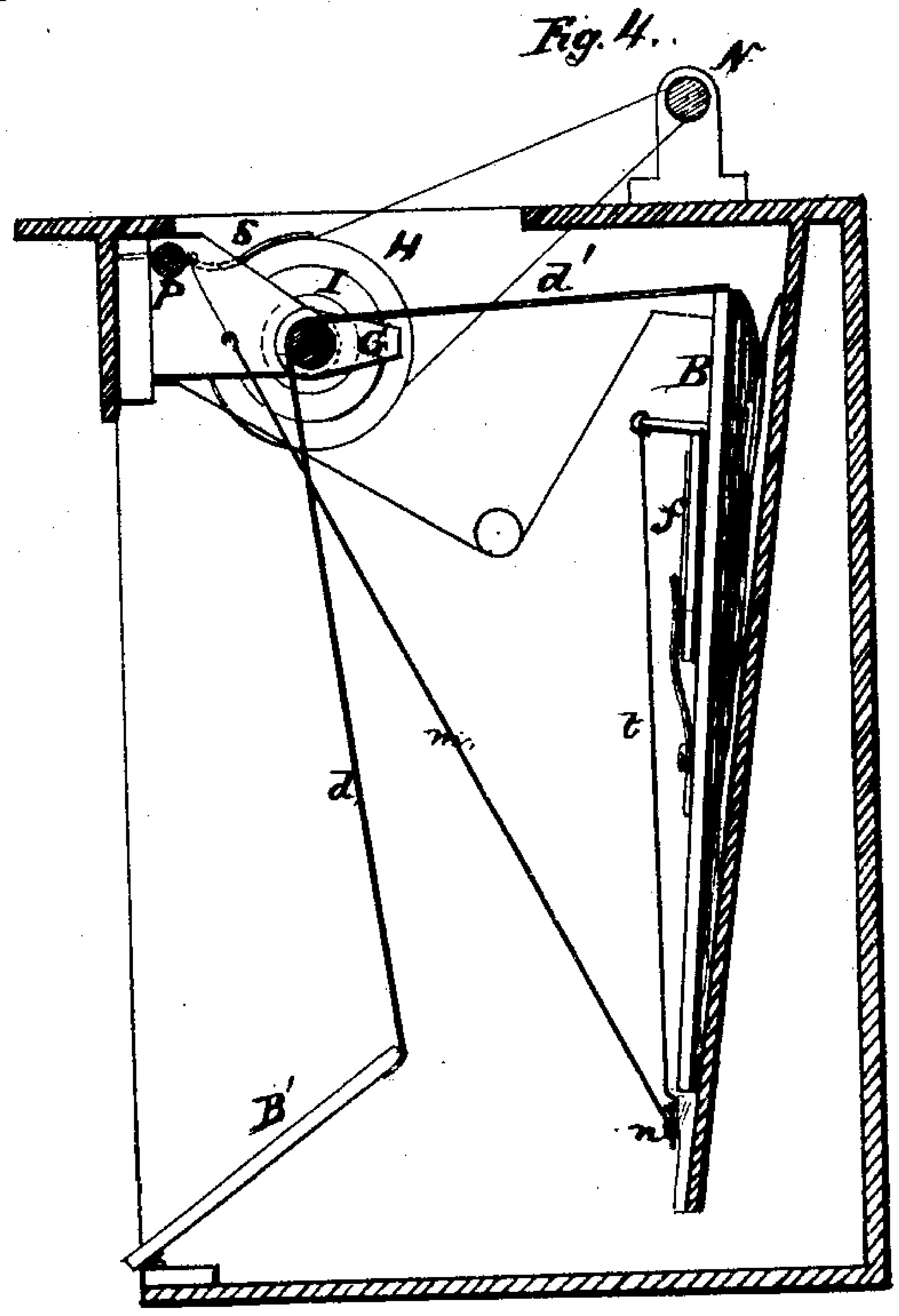


Fig. 3.

Fig. 4.



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JOSEPH H. DOW, OF BIRMINGHAM, CONNECTICUT, ASSIGNOR TO HIMSELF AND DARIUS WILCOX, OF SAME PLACE.

Letters Patent No. 102,096, *dated April* 19, 1870.

IMPROVEMENT IN OPERATING FAN TREMOLOS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOSEPH H. DOW, of Birmingham, in the county of New Haven and State of Connecticut, have invented a new Improvement in Operating Fan Tremolos; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent in—

Figure 1, a front view;

Figure 2, a top view, a portion of the case removed to show the mechanism;

Figure 3, a partial sectional view enlarged; and in

Figure 4, a transverse section.

This invention relates to an improvement in mechanism for operating the tremolo of reed instruments, the object being to apply the power through one of the pedals which operates the bellows or feeder of the instrument.

A is the case, of common construction, below the wind-chest, that portion being here removed for the purpose of more clearly illustrating the operation of the invention.

B is one bellows or feeder, C, the other, operated respectively by pedals B′ and C′ in the usual manner.

The feeder B is connected to its pedal by a shaft, D, a band, *d*, attached to the shaft and pedal, and a band, *d′*, from the shaft to the bellows, as seen in figs. 1, 2, and 4, so that, as the pedal is depressed, the shaft D partially revolves by the unwinding of the band *d* therefrom, and the band *d′* winding on to the shaft opens the bellows. The object of this connection is to cause the revolution or rotation of the shaft D.

The shaft D is constructed as seen in fig. 3, so as by its revolution to create power.

E is a second shaft arranged axially to the shaft D, and upon which is fixed a friction-wheel, F.

On the shaft D an arm, G, extends out, and is attached to a band around the wheel F, so that as the shaft D revolves, the arm G will draw the band tightly upon the wheel F, so as to cause the wheel F to turn with the shaft.

This band and its connection to the arm G is in the usual manner of friction-bands or clutches, the friction-band extending over only a part of the wheel F.

On the other part of the wheel another band is arranged to prevent the return of the wheel after it has been advanced by the turning of the arm G. This construction is also common in friction-clutches for other purposes.

Therefore, by the turning of the shaft D the wheel F is turned with it, and when the shaft D returns the wheel F is held to prevent its return, so that the clamping device goes back to take a new hold.

On the shaft E a pulley, H, is arranged loose upon the shaft, and to the said pulley a barrel spring, I, is fixed, one end of the spring being fixed in the barrel, the other end to the shaft E, so that the pulley H being held, the shaft E turning will wind the spring, consequently, so soon as the spring shall have been wound with sufficient power, the pulley H will revolve.

From the pulley H a band extends to the shaft N of the tremolo, as seen in figs. 1 and 4, the tremolo being arranged in the usual manner in the wind-chest.

As it is not at all times desirable that the tremolo be in operation, I arrange a shaft, P, see figs. 2 and 4, and connect the shaft P with a knee-stop, R, see fig. 2, so that, by turning the knee-stop to the position denoted in broken lines, fig. 2, the shaft P is partially turned.

On the shaft P a spring-lever, S, is arranged, so as to bear upon the pulley H, and the turning of the shaft P raises the spring S from the pulley, the force of the spring S being sufficient to hold the pulley when bearing upon it and prevent its turning.

The clutch or band which holds the wheel F when turned, is also connected by an arm, T, see fig. 2, to the shaft P, so that when the spring S is bearing upon the pulley the friction-band is loosed upon the wheel F, but when the spring S is raised then the friction-band is tightened, the shaft P in turning drawing up the band by means of the arm T; therefore, when the shaft P is free, and the spring S bearing upon the pulley, the wheel F rotates back and forth with the shaft D; but when the shaft P is turned to loose the spring S and raise the arm T, then the wheel F is advanced with the shaft D, winding the spring, and held while the shaft returns for a new hold; therefore, whenever the tremolo is required, press the knee-stop to the left to free the pulley H from the spring S, and tighten the band on the friction-wheel, and the tremolo immediately revolves, and when the knee-stop is permitted to return the tremolo instantly stops.

It is desirable when the tremolo is in operation that the bellows or feeder should not operate, and while the treadle may be disconnected in various ways to prevent the operation of the bellows, I prefer to prevent the operation by holding open the valve *f*, and this I do by connecting the shaft P with a lever, *n*, see fig. 1, through a rod, *m*, and the other end of the lever *n* by another rod, *t*, to the said valve, as seen in figs. 1 and 2, so that by the turning of shaft P the valve *f* is open and held open until the shaft is returned.

I do not broadly claim operating the tremolo by a power independent of the wind of the bellows; but

I do claim as my invention—

1. Combining the tremolo-shaft with the pedal by which the bellows or feeder are operated, through mechanism consisting of the pulley H, shafts D and E, and frictional wheel F, all operating substantially as set forth.

2. In combination with a mechanism connecting the pedal B′ to the tremolo-shaft N, the arrangement, substantially such as described, to open or release the bellows or feeder from the action of the pedal while the tremolo is in operation.

JOSEPH H. DOW.

Witnesses:
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