(No Model.) 2 Sheets—Sheet 1.

R. C. CONTARDO.

TURNSTILE.

No. 552,893. Patented Jan. 14, 1896.

FIG. 1

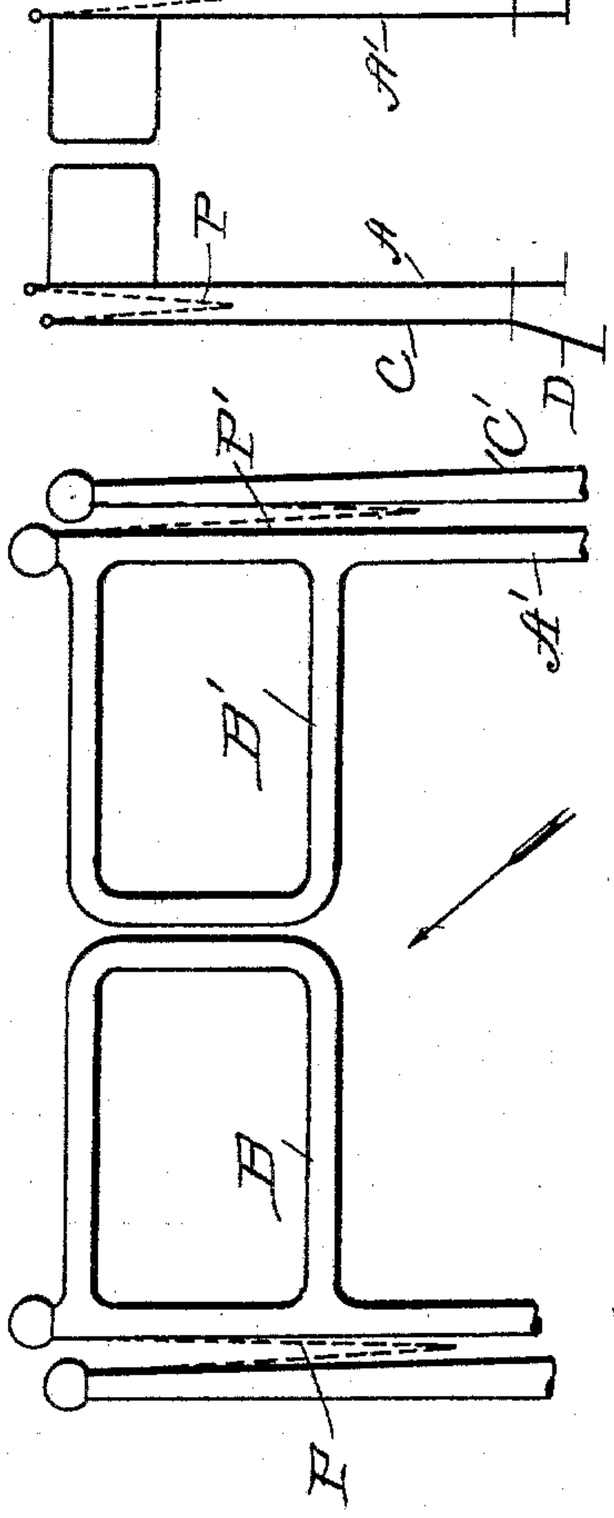

FIG. 2

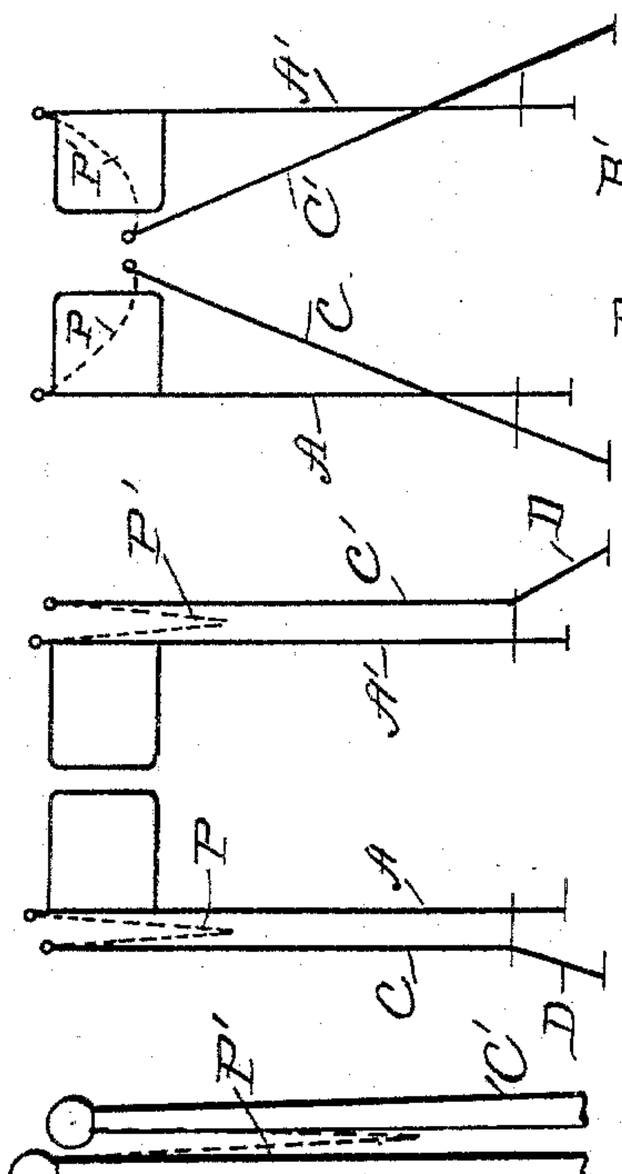

FIG. 3

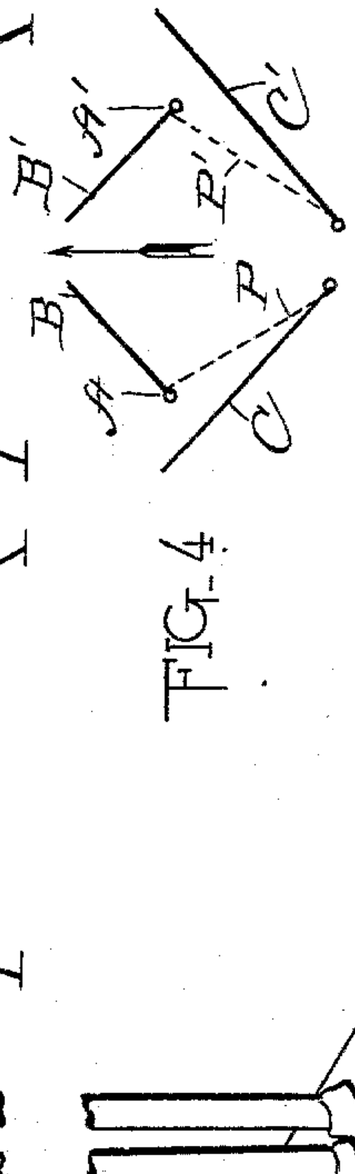

FIG. 4

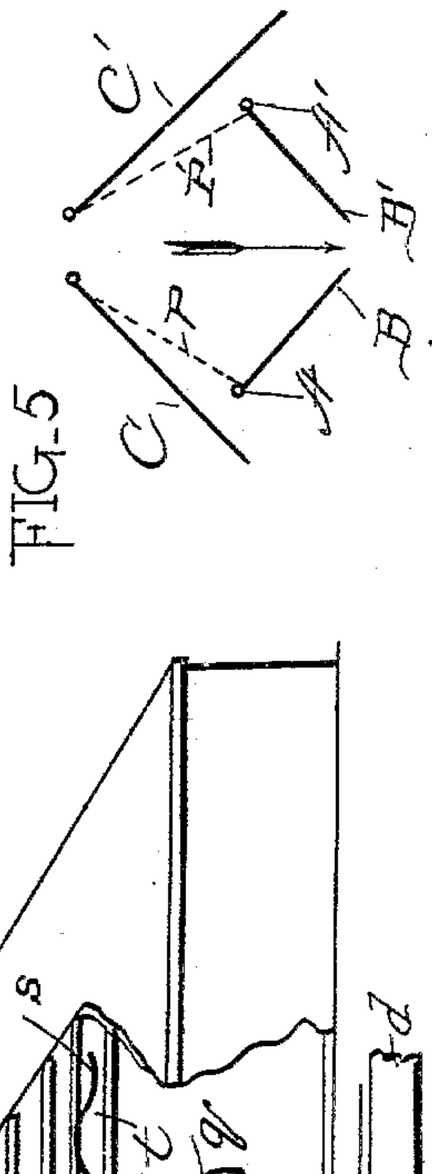

FIG. 5

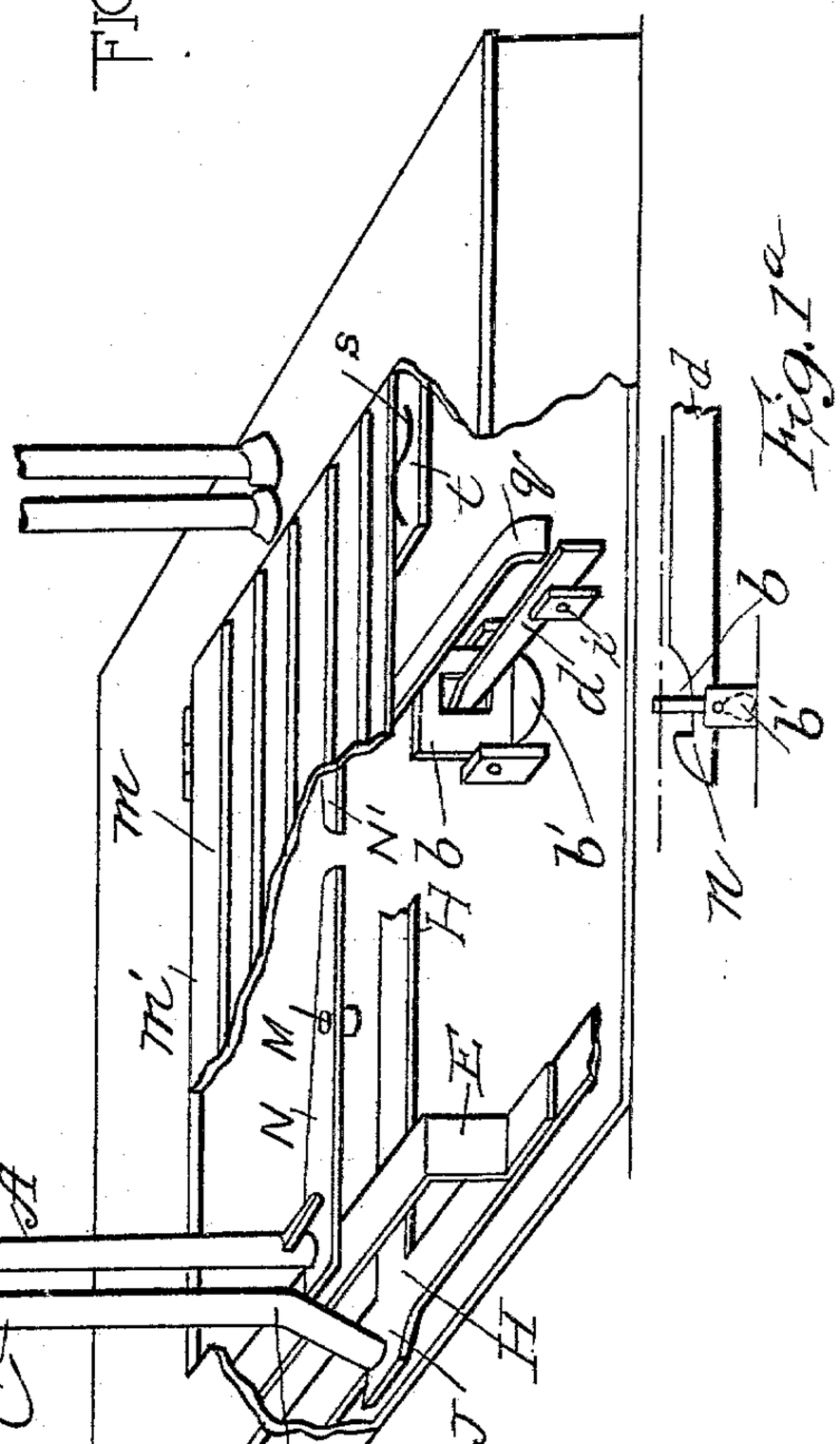

Fig. 7a

Witnesses
E. B. Bolton
H. van Oldenneel

Inventor:
Ramon Chavarria Contardo
By Reinhardt & R
his Attorneys.

(No Model.) 2 Sheets—Sheet 2.

R. C. CONTARDO.

TURNSTILE.

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FIG. 8

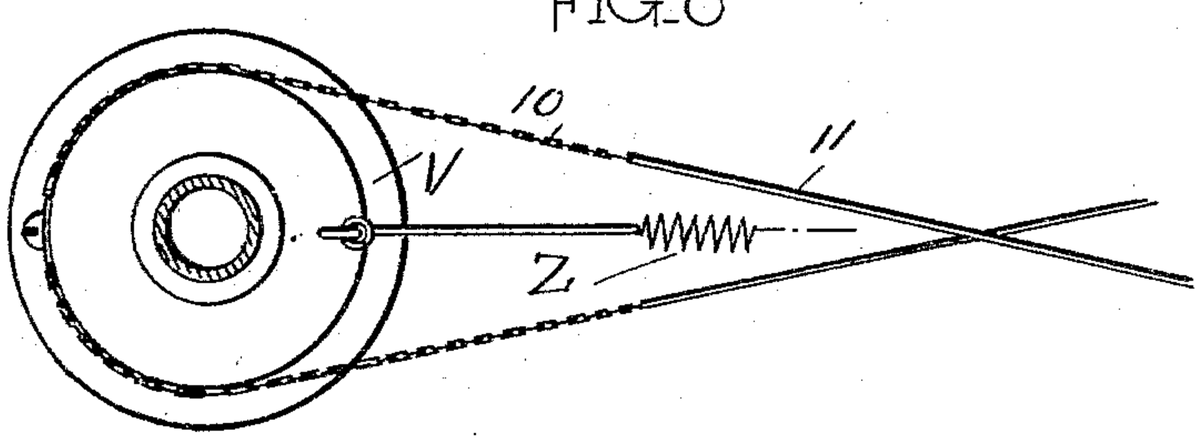


FIG. 7

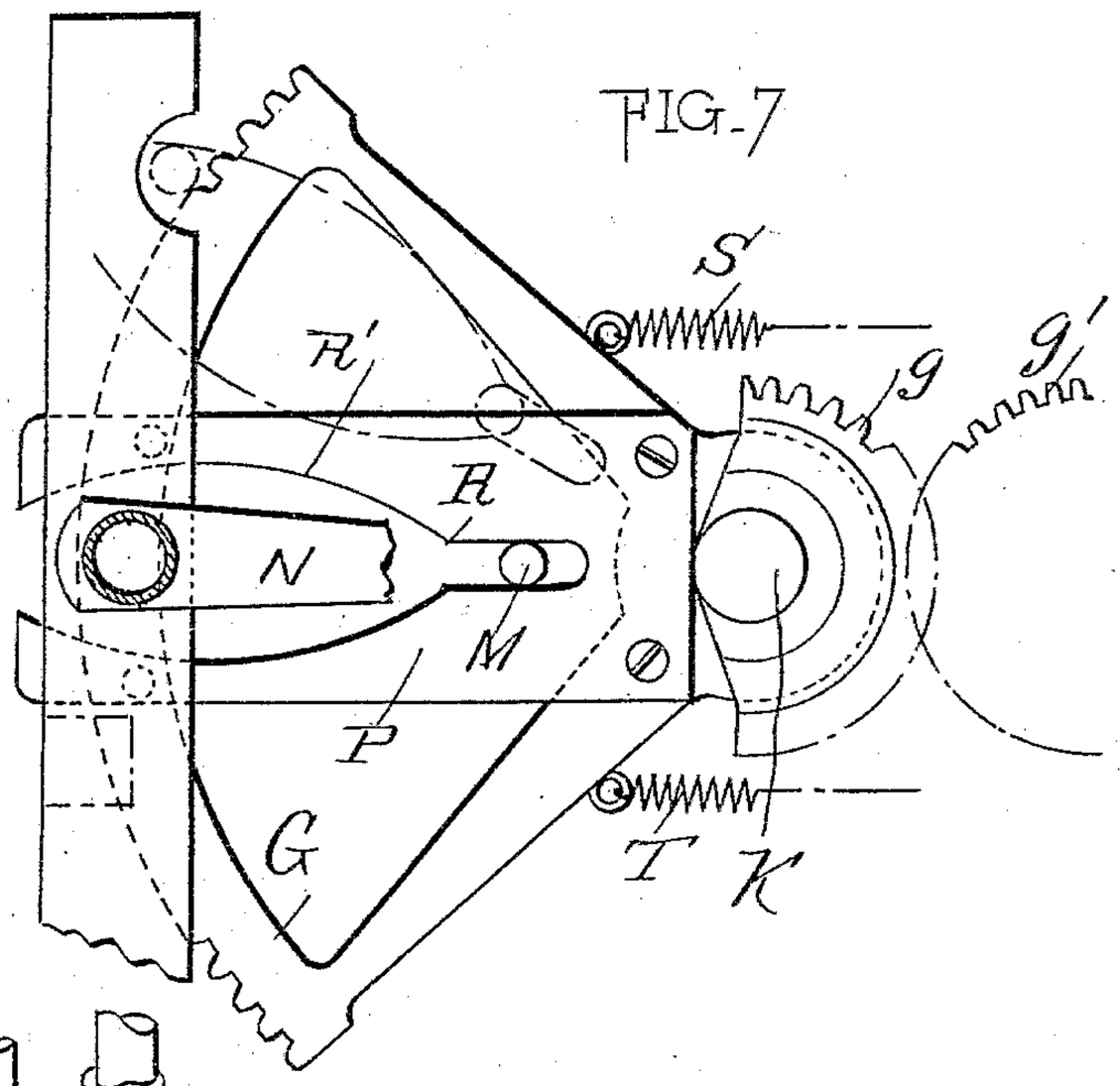
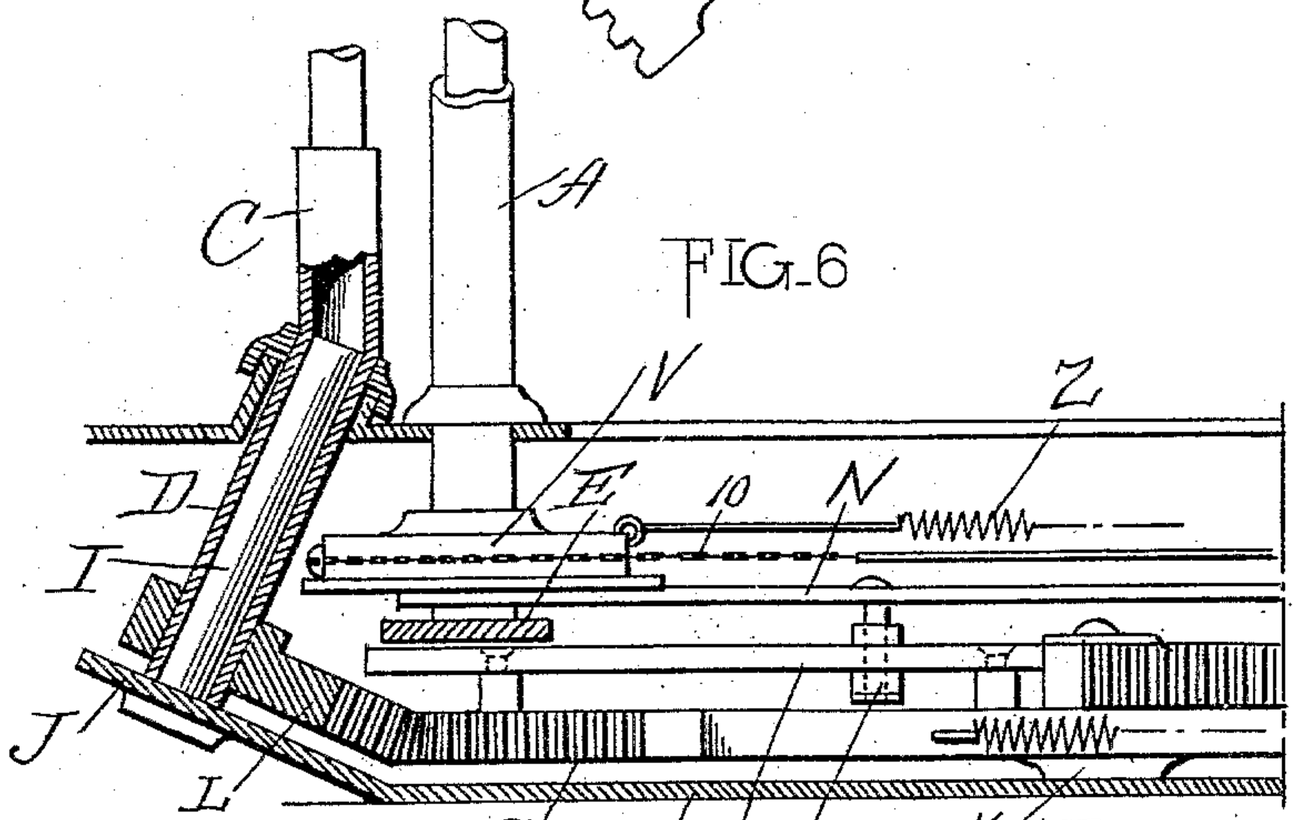


FIG. 6



G H P M K

Witnesses:
E. R. Bolton
H. van Oldenneel

Inventor:
Ramon Chavarria Contardo
By Pierce & Co
His Attorneys.

UNITED STATES PATENT OFFICE.

RAMON CHAVARRIA CONTARDO, OF PARIS, FRANCE.

TURNSTILE.

SPECIFICATION forming part of Letters Patent No. 552,893, dated January 14, 1896.

Application filed September 29, 1894. Serial No. 524,541. (No model.) Patented in France June 12, 1893, No. 230,767; in Germany July 11, 1893, No. 74,482; in Italy July 12, 1893, No. 67,406, and in England July 27, 1893, No. 14,489.

To all whom it may concern:

Be it known that I, RAMON CHAVARRIA CONTARDO, a citizen of the Republic of Chile, residing at Paris, France, have invented certain new and useful Improvements in Turnstiles, of which the following is a specification.

The invention has been patented in France June 12, 1893, No. 230,767; in Germany July 11, 1893, No. 74,482; in Italy July 12, 1893, No. 67,406, and in Great Britain July 27, 1893, No. 14,489.

As my apparatus takes very little room while at rest and works in the smallest possible space, it can be used not only at the entrance to public places, but also upon stages, surface cars, and vessels. The apparatus described herein is intended to operate with any suitable form of registering mechanism. In apparatus of this kind there is one manner of defrauding, which consists in preventing the wings of the turnstile from closing at the moment when one person passes out, so that another person may at once pass in while the wings are thus held open, thus preventing the apparatus from registering. Part of my invention consists of means for preventing such fraudulent entry.

The turnstile described herein consists of two portions similar in all respects and operating in like manner; but it will be understood that I do not limit myself to the two sets of devices.

Figure 1 is a perspective view of the turnstile with part of the base broken away to show the interior mechanism, part of which is omitted. Fig. 1ª is a detail view of part of Fig. 1. Figs. 2 and 3 are diagrammatic side views of the turnstile. Figs. 4 and 5 are diagrammatic plan views of the same. Fig. 6 is a detail view of the lower parts of one of the shafts and standards with the operating mechanism in connection therewith, parts being shown in section. Fig. 7 is a plan view of parts of the mechanism shown in Fig. 6, and Fig. 8 is a detail plan view of the connection between the shafts with a part broken away.

The vertical shafts A A′, Fig. 1, carry the wings B B′ and turn in bearings in the base. The adjacent standards C C′ are normally vertical, also; but they turn with their feet D, which are oblique and are journaled within the base. When a person passes in the direction of the arrow, Fig. 4, he pushes the wings before him outwardly. By the mechanism shown in Figs. 6, 7, and 8 the turning of the shafts A A′ makes the oblique feet D revolve, the standards C C′ of which will then occupy the oblique position shown in elevation in Fig. 3 and in diagrammatic plan view in Fig. 4. They obstruct the passage in front of the stile and prevent a second person from walking in immediately after the first. When the latter has gone in, the wings B B′ return to their normal position, as well as the standards C C′, which caused the obstruction. Small chains P P′, fixed to the heads of the standards C C′, complete the obstruction of the passage caused by the standards C C′, said chains extending from the tops of the standards C C′ to the tops of the shafts A A′. The same operation takes place in the reverse direction if a person goes out in the direction of the arrow, Fig. 5. The same standards C C′ obstruct the passage behind him by revolving in the reverse direction, Fig. 5, and thus swinging to the opposite side of the stile from the position formerly described and shown in Fig. 4.

The base of the apparatus includes an H-shaped piece of iron placed horizontally, the left-hand end of which is indicated by the letter H in Figs. 1 and 6. The cross-beam H has an extension J at both ends, which are sufficiently bent upward to give the inclination to the pivot I, which is fixed upon the same. The oblique feet D of the shafts C C′ are hollow and revolve upon the pivots I, only one of which is shown in Figs. 1 and 6. Two bridge-pieces E, only one of which is shown in Figs. 1 and 6, furnish the lower bearings for the shafts A A′, which also bear in the top wall of the base.

A toothed sector G, horizontally arranged and pivoted at K within the base, gears with a segment L, fixed upon the hollow foot D. A horizontal arm N, Figs. 1 and 7, fixed at the bottom of the shaft A, carries a roller M, which, by rolling upon the interior edges of the piece P fixed upon the sector G, imparts to the same the motion from the wing and shaft.

When a person goes in and pushes the

wings B B′ before him the arm N, by its roller M, pushes the piece P and causes the sector G to turn, which makes the segment L rotate, and consequently the shaft C, which, as has been explained, is thereby placed obliquely behind the entering person. At the moment the roller reaches the point R, Fig. 7, of the piece P the obstruction is complete, as the shaft C has been turned then almost a quarter of a rotation. From there the roller rolls upon the curved part R′ of the piece P, which curve then lies concentric with the center of the shaft A, and consequently no further movement of the arm N will be imparted to the sector G nor to the standards C, which will remain stationary while the wings B B′ may continue to turn. The other half of the apparatus works at the same time and in the same way. The back-motion spring S, which is fixed to the two sectors G at opposite sides of the apparatus, returns said sectors to their normal position as soon as the wings B B′ are released, and said wings return also to their original position.

A person going out produces an operation in the reverse direction, and then the spring T, Fig. 7, returns the parts to normal position.

In order that the working of both parts be more regular and simultaneous, a toothed wheel *g* is fixed to the sector G, and this engages with a gear-wheel *g′*. The gear-wheel *g′* is connected to the sector corresponding to and opposite to the sector G, so that both sectors will move simultaneously for both sides of the stile. Besides this a pulley V, Figs. 6 and 8, is fixed at the foot of each rod A and A′. Two chains 10 pass about the pulleys V, the ends of which chains are connected by metallic wires or bands 11, which cross each other, Fig. 8, so that the connected shafts move simultaneously.

A spring Z, Figs. 6 and 8, is fixed by one end to the edge of the pulley V and by the other to the edge of the opposite pulley in order to return the shafts A A′ to their normal position when a person coming or going out has made them turn in one direction or in the other.

The mechanism for preventing fraud consists of the following elements, Fig. 1: A rectangular plate *b* is pivoted at its sides upon two supports fixed to the base. This plate being weighted at *b′*, resumes always the vertical position when it has been put out of said position. A lever *d*, pivoted at *i*, passes through an opening made in the plate, and its extremity forms a stop-catch *n*. A panel *m* is arranged in the flooring of the base, which forms the superior wall thereof, the edge *m′* of which panel is provided with hinges and the upper surface of which panel is level with the floor. The free edge of the panel is held up by means of springs, as *s*, supported by fixed cross-beams *t*. An arm *q* is fixed horizontally under the panel *m*. The curved extremity of said arm rests, without pressing upon the lever *d*, very near its pivot, so that when a person is standing upon the panel his weight will slightly press the same down, and this slight pressure is sufficient to lift the long arm of the lever *d* and its stop-catch *n*. The arms N and N′, the latter being for the right-hand half of the apparatus, Fig. 1, extend half-way across the base and their extremities nearly meet each other. The extremities of these arms in their to-and-fro motion when a person goes out touch the sides of the plate *b* and make it swing in one or the other direction.

The operation is as follows: When a person passes through the turnstile, the weight of his body on the panel lifts the long arm of the lever *d;* but the stop-catch *n* does not prevent the plate from swinging forward, and the arms N N′ pass over the plate easily. When the foot of the person has released the panel, the latter rises and the lever *d* drops again, so that the arms N N′ can freely resume their normal position; but if at the moment the person passes through the wings should be held in their extreme open position and another person should attempt to defraud the apparatus by passing through these open wings his weight on the panel will lift the lever *d*, the stop *n* of which catches into the plate *b*, which prevents the arms N N′ from resuming their normal position, and the standards C C′ will be held in their oblique position, thus obstructing the passage. This person must therefore go back, and he cannot enter except by pushing the wings in front of him to their full extent, thus causing a registration.

One wing with its shaft and oblique standard with the operating mechanism may be used to constitute a complete stile, if desired.

Having thus described my invention, what I claim is—

1. In combination in a turn stile the vertical shaft, the swinging wing carried thereby, the rotary standard having an oblique foot or pivot for swinging the standard into oblique position across the passage and the means for turning the standard as the wing is operated, substantially as described.

2. In combination in a turn stile the wing with its shaft, the obstructing means and the connections for operating the same including the arm N the piece P with its curve R′, the segment carried by the piece P and the segment on the obstructing means engaging therewith.

3. In combination in a turn stile the wing with its shaft, the obstructing standards, the oblique pivot foot therefor and the connections between the oblique foot and the foot of the wing shaft, substantially as described.

4. In combination, in a turn stile, the wing, the shaft therefor, the obstructing standard having an oblique foot and means for rotating the said standard to each side of the wing shaft and operated from the said wing shaft substantially as described.

5. In a turn stile, the combination of the

wing, with its shaft, the swinging standard to obstruct the passage on each side of the wing and shaft and the means for operating the same from the wing shaft comprising the arm N, the two part piece P, the segment connected to the said piece, and the segment on the swinging standard, substantially as described.

6. In combination in a turn stile the wing with its shaft, the swinging standard to obstruct the passage on each side of the wing and shaft and the means for operating the same from the wing shaft including the piece P the arm N arranged to operate the piece P either way said piece having the curved edges to secure a dwell in the movement of the swinging standard and the connections between the piece P and the swinging standard, substantially as described.

7. In combination in a turn stile, the wing with its shaft, the swinging obstructing standard arranged to move to either side, the connection between the wing shaft and said standard including the segment G and the return springs one on each side of the segment for holding the segment and other parts in central position, substantially as described.

8. In combination, the wing with its shaft, the obstructing device arranged to close the passage in rear of the wing when the same is moved, locking means arranged to hold the obstructing device in position until the wing returns to normal position and means for controlling the lock comprising the vertically movable platform arranged to be pressed down by the weight of the person, substantially as described.

9. In combination, the wing with its shaft, the obstructing device connected therewith to be operated thereby, the catch for the wings and obstructing device and the vertically movable platform arranged to hold the catch in locking position when a person steps thereon while the wing is open, substantially as described.

10. In combination the wing with its shaft, the obstructing device connected to the wing to be operated thereby, the arm N moving with the wing shaft, the pivoted stop plate *b* the catch *n* arranged to hold the stop block against movement in one direction and the platform arranged to operate the catch, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

RAMON CHAVARRIA CONTARDO.

Witnesses:
E. LONERGAN,
ROBT. M. HOOPER.