

ble orders which issue from the proprietor to the various departments.

Cards, telegrams, letters and messages of that sort are sent to the various floors from the office by pneumatic tube men, of whom there are two employed during the day and one at night. The head bell boy is busy at all times near the office desk standing by the side of the man on duty at the bureau of information, making a record of the name and time of all callers and the names of the persons called upon. The office floor force consists further of six door boys, two footmen, four "buttons," two telephone men, ten elevator boys, two starters, all of whom are, of course, in uniform, and three leisurely-looking ununiformed men who comprise the detective force.

The door boys open and close the entrance doors, the footmen open and close carriage doors, the "buttons" whisk the snow or dust off your coat, and at other times stand around looking ornamental, the elevator boys take you up to your floor when the starters have given them permission. The starters have a more important duty to perform, which is to watch the stairway. They act under positive instructions to permit no one to go up stairs without a written pass from the proprietor.

Mr. Boldt does not regularly designate any of his assistants to issue these passes, naming one person for that purpose each time he leaves the hotel. Even with a pass in his or her possession, a stranger cannot go up stairs unless accompanied by a hotel servant in livery. The reason for this rigid rule, and another rule which prohibits the exit of any person with a bundle from the entrance near Fifth Avenue leading into the restaurant, is obvious.

Outside the hotel doors, besides the footmen, there are two carriage starters on duty until 1 o'clock at night, two pavement men, who relieve Commissioner Andrews of the work of keeping the streets clean in front of the hotel, and a gardener who, besides keeping trim the garden strip on Fifth Avenue, attends to the plants in the garden cafe.

A very important personage not yet mentioned is the head porter; he has a first assistant and twelve baggage handlers under him; also four bootblacks and toilet room men, and four messengers. These messengers wear the hotel livery, but are for the message service of the guests outside of the hotel. That completes what may be called the office force, concerned with the work which comes immediately under the office direction.

The housekeeper's department is next most closely under the direction of the office. The head housekeeper is a woman who has two assistant housekeepers, one to look after chambermaids, one to look after the cleaners. There are thirty-six maids, eighteen cleaners, who are women, and six men window cleaners. In addition to these the housekeeper has under her direction six furniture movers, an upholsterer and his assistant, a furniture repairer and his assistant. In the housekeeper's linen room there are two seamstresses and two girls who check out clean linen in exchange for soiled. If a head waiter wants a hundred clean napkins, he can only get them in exchange for an equal number.

The laundry, which is also in the housekeeper's department, is run by a chief and one assistant, two machine men and thirty-seven laundresses. The housekeeper's force is completed by the four parlor maids who decorate the reception rooms on the lower floor.

With this enumeration is concluded the employes who are directly controlled by the proprietor and his personal staff. The proprietor manages every other department of the hotel through the man who seems to be really his chief lieutenant, the steward. The steward in turn has at least a dozen important departments under him. There is then the steward, who is personally aided by one first assistant, one bookkeeper, one receiving clerk and two timekeepers. The timekeepers have mechanical aids, because every employe in the house, excepting the men employed in the office, carries a key with which he starts a mechanical contrivance which keeps a record of his time.

The most important division controlled by the steward is that which in turn is under the direction of the chef. The chef has under him six deputy chefs; each of these being a specialist, one for roasting, one for sauces, one for vegetables, and so forth. Each of these deputy chefs has from two to three assistants, and there are also employed in the kitchen proper four men who do nothing but wash and scour the pots and pans used by the cooks, and two men who do nothing but wash the marble floor of the kitchen. Directly under the chef there are employed forty-five men—no women. In other rooms, not under the chef, are a pastry cook and two assistants, a chief baker and an assistant, a chief compounder of ices and ice cream and two assistants, and two girl helpers, whose delightful vocation it is to prepare raisins and other fruit for the pastryman. Continuing, in the general department where food is prepared for guests, there are, in another room, three oyster-men, a coffee maker and two assistants, six storeroom girls, who give out lettuce, bread, butter, cheese, and so forth; two men, who supply the storeroom girls from the cold storage room; three yard men, who take the delivery of stores from dealers and distribute them to their various destinations. Then there is the big wine room in charge of a steward, assisted by four bottlers and handlers and five barkeepers.

Before going upstairs from the kitchen floor to where the food is served, it comes in proper rotation to speak of the big room known as "Help's Hall." That has a head waiter and ten women who wait on male and female employes, excluding waiters. Then there is the waiters' dining room, where four waiters are employed, and the mechanics' dining room, where two waiters are employed.

Just who waits on the waiters who wait on the waiters the *Sun* man failed to discover.

These numerous divisions and powers are necessary to supply the orders that come from five different sources, and that are grouped in the restaurant department, which is immediately under the *maitre d'hotel*, who, like the chef, is in the steward's domain.

The *maitre d'hotel* has under him the ladies' restaurant, the gentlemen's restaurant, the garden cafe, the private dining rooms and the floor waiters who serve orders to private apartments. In the ladies' restaurant there are a head waiter, three assistant head waiters, sixty waiters and twelve omnibuses. The lat-

ter are apprentice waiters, and are employed to remove dishes between courses and otherwise aid the waiters.

In the garden cafe there are two head waiters, fifteen waiters and five omnibuses. In the gentlemen's restaurant there are two head waiters, eighteen waiters and six boys. The private dining room force is merely a skeleton organization composed of a head waiter, four assistant waiters and two women, who wash by hand the fancy china used in the private rooms. This force is increased as the size and number of the private diners require. Meals are served in rooms by the floor waiters. On each floor there are a head waiter, a waiter and an omnibus always. This force, too, is increased as required. The floor waiters never go to the kitchen, their orders being supplied by the dumb waiter service.

In the ladies' restaurant, the big one on Fifth Avenue, there are six checkers and two cashiers, and in the other two smaller restaurants two checkers and two cashiers each. That completes the organization through which meals are served, except the interesting little operation which proceeds at the foot of the dumb waiter. This is on the kitchen floor. The dumb waiters are two hydraulic elevators. They can be operated only from the bottom, and two men alternate in watches at the ship-like wheel which is turned to start

THE PIEFFORT SPINET.

THE spinet, upon which the herdsmen and shepherds of the Vosges play those pretty airs that are so much enjoyed by tourists, was invented at an epoch that cannot be precisely stated, by Dorothea, an alleged sorceress, who lived in the Valley of Ajol, near Plombieres. This musical instrument, which is exhibited at the Museum of the Conservatory, consists of an elongated box provided at one end with a shoulder piece and at the other with a neck with wooden pegs, after the manner of a violin. It is made of the wood of the cultivated or wild cherry tree, and is provided with five sonorous strings—four *sol's* in unison and one *do*. It is, upon the whole, a rudimentary instrument and one that possesses several serious defects, viz.: The pins to which the strings are fixed at the shoulder excoriate the player's finger, the steel strings are difficult to mount with simple wooden pegs, and, finally, the sonorousness, in consequence of the use of an ill-adapted wood and of a metal nut, leaves much to be desired. Into this primitive spinet, Mr. P. Pieffort has introduced important improvements. The addition of a new string in the basses completes the perfect accord, *la, do sharp, mi*, of the scale of *la*. The neck is provided with six keys with racks that permit of quick and



FIG. 1.—METHOD OF USING THE PIEFFORT SPINET.

and stop them. When a tray has been placed on the elevator the operator touches a button which notifies the head waiter on the floor to which the tray is consigned, and then turns the wheel. As the elevator ascends an indicator marks its location, and another turn of the wheel stops it at the right floor. There was something vaguely humorous in the sight of the waiters who were serving course after course into these elevators. The waiters were dressed just as those in the restaurant, had to undergo the same inspection of their linen and finger nails; their trays had to be exhibited to a checker just the same, yet they never saw nor went near the people they were serving, and what is of more importance, the people there never "saw" them.

That ends the restaurant service, except that there is another active division required to care for the china and silver carried out to the pantries by the omnibuses. From the pantry men carry the dishes to the steam dish washers, where eight men are employed, and to the silver cleaner, where a chief and twelve assistants are employed. Dishes are washed by steam, knives cleaned by machinery and silver burnished by

easy tuning. A piece with a special string fastener does away with the inconvenience noted above. Finally, the sonorousness is greatly developed by the use of properly selected wood. After numerous experiments, Mr. Pieffort has found that the kinds of woods should be classified in the following order, beginning in this regard with the best: Rosewood, ebony, amaranth, blue ebony, false mahogany, walnut, cherry. This classification is somewhat surprising at first sight, but it must not be forgotten that, as has been observed by Mr. Pieffort, the sound is produced in the spinet by the repercussion of the sonorous waves, and not by their vibration in the interior of the instrument, as in the violin. As a proof in support of this, Mr. Pieffort has observed that the sonorousness is diminished by more than half when the spinet is placed upon marble or metal instead of wood.

The instrument, which is not very cumbersome, being placed upon a table, is played with the left hand armed with a piece of reed serving as a fingering stick, and the right with a mediator (a piece of tortoise shell), designed to cause the alternate vibration of the strings

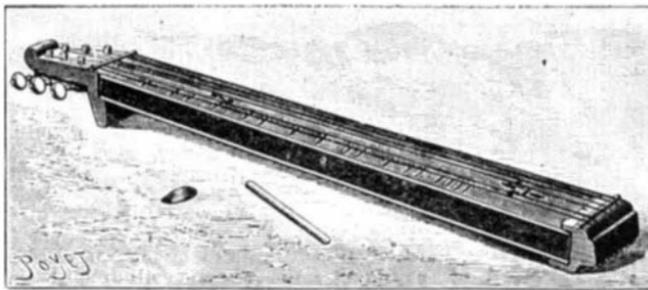


FIG. 2.—DETAILS OF THE INSTRUMENT.

electricity. And, by the way, the humble bottle washers merely touch a button when they want something to revolve like lightning inside a bottle, and the ice cream man moves a lever when he needs another ton of crushed ice.

Before going into the mechanical department a few words more will conclude the list of those whose services are for the personal comfort of the guests. There are ten barbers, two ladies' hair dressers, one manicure, one chiropodist and two valets.

All the mechanical departments are under the steward's supervision. There is one chief engineer and two assistants (one for day and one for night). Each assistant chief engineer has four firemen, two oilers and one coal passer. There is one ice machine man and one tank man. No ice is used in the cold storage; the low temperature required for meats, vegetables, wine, milk and other stores is produced by cold air.

The machine shop, where all repairs to engines, pumps and elevators is done, is run by a master mechanic and two assistants. In addition the mechanical force includes one head painter and two assistants, two steam fitters, two plumbers, two carpenters, one electrician and two assistants. The plant operated by the last named furnishes 10,000 sixteen candle power incandescent lamps, and the twenty-seven pumps have a daily capacity of 3,000,000 gallons. You see what a simple thing it is to organize the force required to run a big modern hotel.

so as to obtain at will either a continuous sound, as in the mandolin, or pizzicati, as in the guitar. Slurred notes, which add so much to the expression, are easily executed. The natural tones and semitones of the scale are obtained on the two first strings, and the alterations (sharps and flats) upon those of the center, which serve at the same time to produce a note of perfect accord. The effects of choruses are produced by the simultaneous vibration of the six strings, giving the perfect accord. The Pieffort spinet permits of playing upon a range of two octaves and a half starting from *mi*, a sixth above the grave *sol* of the violin. With the special sonorousness due to the nature of the instrument and the physical effects that it produces, it lends itself to the execution of all pieces not exceeding this range. We have heard the inventor execute the stanzas of Flegier, a pavan of Louis XIII., the Ave Maria of Gounod, and *Lein du Bal*, a fantasia on *Il Trovatore*, and we can say that the instrument lends itself to every nuance and is very agreeable to hear. The spinet, moreover, is very easy to play, and a person ignorant of music may, in a few hours, learn to execute certain popular airs, dances especially. It is an interesting invention worthy of being presented to our readers.—*La Nature*.

In blowing up Blossom Rock, San Francisco Bay, 43,000 pounds of explosives were used.