THE KEEPER



The Watch of Railroad Accuracy

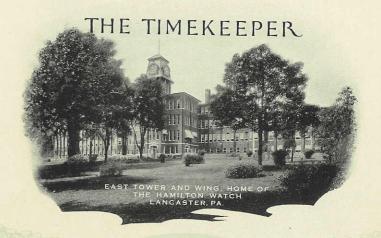
# Mamilton Hatch

The Watch of Railroad Accuracy



HAMILTON WATCH COMPANY LANCASTER, PENNA., U. S. A.

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1923
Lancaster, Pa., U. S. A.



UMAN nature is such that we are not conscious of the passing of time unless we measure it—by hours, minutes and seconds. Man's first conception of time measure was undoubtedly caused by the seeming transit of the sun across the heavens, and the movement of the shadows cast by trees and other objects. This phenomena suggested the sun dial, the first instrument used for time measure of which we have record. The earliest sun dial known is mentioned in a Chinese Manuscript of about 1100 B. C.

But the sun dial indicated time only when the sun was shining. As civilization spread the need was felt for an instrument of time measure that would indicate the hours on dull days and in the darkness of the night. The water clock or clepsydra was invented to fill this need, and credit is given to the Assyrians for the development of this instrument, about 640 B. C.

The clepsydra and the sun dial in their many forms were the only timekeepers known up to about A. D. 700, when,

> tradition says, a monk of Chartres invented the sand, or hour glass. There is also record of a time candle, said to be the invention of King Alfred the Great, of England, which indicated the hours as it was consumed.

The next and most important change in timekeeping came in the form of escapement machinery, actuated by weights, which struck a bell every hour. These were known as "Cloche" in France—from it we get our word clock. A dial with a hand to indicate the hours was a later addition. Weight clocks were first produced about 1350, and all such timepieces were dependent upon a very

crude escapement to attain a measure of uniformity. It was not until half a century after Galileo discovered the pendulum that it was applied to clocks, and so added materially to their more accurate performance.

About 1480 a Nuremberg genius (supposedly

Peter Hele) used a coiled spring as a driving force in his newly invented "pocket clocks"—and these were the great-grandfathers of the modern watch.

The pocket clocks were found, however, to be poor timekeepers, due to the fact that the coil spring exerted power at a diminishing rate. As they "ran down" they "slowed up." This was not remedied until 1658 when the balance spring was invented by Robert Hooke.

Further improvements in timekeeping and watch-making were of a highly technical character, interesting only to

students of the craft, but we have outlined briefly the history. And the present high development of timekeeping is best illustrated by comparing the sun dial and water clock with that wonderfully accurate and precise timekeeper, the Hamilton Watch.



To scientists, explorers, railroad men and mariners, accurate time is a necessity. By many others it is apt to be considered a convenience. But really, it is now a necessity to practically everyone. Not only do we need an accurate timekeeper to measure our time and keep us to schedule, but an accurate watch is a companion whose influence is shown on our character. We live with our watch. We are



so closely associated with it that it has a direct psychological effect upon us. It criticizes us when we waste time, and compliments us when we save it. Our watch becomes then, as it were, a supplement to our conscience.

When the Hamilton Watch was first manufactured, Railroad Men bought almost the entire output for use in timing their trains. This was in 1893, at a period when the increasing complexity of train schedules was creating an undreamed of demand for accurate watches.



It is not, perhaps, generally realized how much the watch contributes to railroad efficiency. It has been said that the watch of the railroad man is as necessary in modern railroading as the air brake. Without accurate timekeepers we could not have the complicated schedules that we do.

The railroad man is required to own a timekeeper that is more accurate and precise than many scientific instruments used in laboratories. From the very first, the Hamilton met with the whole-hearted approval of these men who had, perforce, to have the very best of Timekeepers.

At present the 16-size Hamilton is more extensively used, and in far greater numbers, on the railroads of America than any other watch, and it is a well-known fact that American Railroads lead the world in mileage as well as efficiency. Phenomenal timekeeping and durability in service have won for the Hamilton this supremacy among our railroad men. It has attained its high position on quality and performance.



King Albert of Belgium on his American tour displayed great interest in our fine railroads—and how accurately they were timed. And so it was that when His Majesty desired to buy an accurate American Watch—his choice was naturally a Hamilton.

The Hamilton Watch has honestly earned its titles, "The Railroad Timekeeper of America" and "The Watch of Railroad Accuracy." It has proved to be nearest to perfection in timekeeping, filling the exacting demands of Railroad Service.

As was natural, the Hamilton began to attract the attention of men in other walks of life. Others than those having a professional interest in a dependable timekeeper evinced a desire to own Hamilton accuracy.

Accordingly, when the Hamilton Watch Company became convinced that the general public was interested in having a watch of extreme accuracy, they began the production of Hamilton Timekeepers in suitable sizes for general use.



In this way have come about the various models which you can see at any reliable jeweler's today.

The Hamilton 12-size watch is a graceful thin model and a timekeeper of consummate beauty. It is exactly the kind of watch that any man with an eye for the aesthetic as well as for mechanical excellence would want to

own. Expert jewelers say that it is the finest 12-size watch made in America.

At present there are many different Hamilton models, including all standard sizes from the "Milady's Watch of Accuracy" up to the 18-size model which some few people prefer.

The Hamilton 16-size, most popular among Railroad Men and Artisans, is midway between the 12- and 18-size models. The 16-size is a model which by reason of its accuracy has really become the Standard in Railroad Service. But every Hamilton Watch can be recommended for its accuracy, as they are built with the same great precision, and always up to the highest standard.

There is no more fitting gift for young men and women as they step from college or school into business life, than a high grade, accurate watch. It helps them realize, better than anything else, the qualities they would do well to cultivate in their own lives. The Hamilton, by its perfection of service, teaches a lesson of faithful performance of duty to be done.

Decide upon a Hamilton, then, when you desire a gift for graduation, birthday or Christmas. As a trophy or award for golf, tennis and other sports tournaments, or presentation purposes to those you wish to honor, you can find nothing more fitting and appropriate than a Hamilton Watch.

Hamilton Watches are standardized. This means that all parts of watches of the same grade are interchangeable. Repairs are thus rendered exceedingly simple and inexpensive. Many European watches do not have this advantage, being made of unstandardized parts, and therefore being repaired only with difficulty and at great expense.

Watchmaking has its experts who are as well known in their professions as other leading scientific men are in theirs, and at the Hamilton factory are found many acknowledged leaders of the watch building profession.

It is important to remember that scientific perfection extends to all Hamilton models, from the accurate wrist watches for women to the large 18-size movements. Every part of a Hamilton and every bit of work done must come up to the highest





scientific standards. And these standards are never lowered to admit of passing inferior work. The Hamilton Company manufactures no cheap or low grade watches. Hamiltons are born Timekeepers.

But the men who make the Hamilton do not work merely to meet a standard. Rather, like good craftsmen, they have quite a bit of that spirit which moved their forefathers to spend the better part of a lifetime in the construction of an ingenious and beautiful timekeeper for king or patron.

Thus it is that a perfectly equipped plant and the best of human skill produce that fine timekeeping instrument known as the Hamilton Watch.

The amount of time taken to produce a Hamilton Watch is another bit of evidence which shows how exacting are the requirements of the Hamilton Factory. The average time required is *nine months*. No watch is ever made in less than seven months—and often it takes a full year and



more. Of this time, two months alone are consumed in the assembling and finishing department, where each tiny part is tested and applied, and the finished watch tested.

The accuracy of the Hamilton can best be expressed in terms of "beats." Every backward and forward turn of the balance wheel is a beat. There are five of these to a second—157,680,000 in a year. This is practically 3732 miles traveled by the balance wheel. As an example, consider that one Hamilton recorded varied but 10 seconds in 14 months, 50 beats out of 183,960,000.

The Hamilton Watch Company has received, unsolicited, hundreds of similar remarkable timekeeping records made by Hamilton Watches, and thousands of letters from owners, praising the accuracy of their Hamiltons.

While the "20th Century" and other famous limited trains are speeding along, eating up the miles, a Hamilton Watch does the timing. And, in spite of the ceaseless jarring and jolting of the engine, these Hamiltons run accurately.

The engineer who built the motor highway up Pikes Peak wrote that, in the changing temperatures of summer heat at the foot and arctic blasts of the crest, his Hamilton varied but 21 seconds in seven months.

The following letter, from a High Officer in the Navy, Vice Admiral during the War, speaks for itself. The signer's name is omitted for reasons of Naval etiquette.

### HAMILTON WATCH COMPANY, LANCASTER, PA.

Gentlemen:—The watch purchased from you in December, 1913, is a marvel of accuracy. On January 1, 1914, it was set 22 seconds fast, on standard mean time, and throughout the year frequent comparisons were made which showed a steady and regular gain. On January 1, 1915, it was again compared and was found to be 1 minute 35 seconds fast, or a gain of 1 minute 13 seconds in 365 days, which is equivalent to a gaining rate of 0.2 seconds a day, or 6 seconds a month.

Had the rate of gain been variable, it would have been very different, but running as steadily and uniformly as it did, I would have no hesitancy whatever in using it for navigational purposes, as it is far more accurate than the average chronometer used for this purpose, and much more convenient.

(Signed)

All these records bear testimony to the statement that the Hamilton is a phenomenally accurate watch. They show why the Hamilton is preferred by railroad and scientific men—capable judges of a good watch.

# HOW A WATCH IS MADE TO MEET THE CONDITIONS OF EVERYDAY USE

HE problem of accuracy in a watch would be greatly simplified if it were to remain in one position and at a constant temperature all the time. But a watch must keep good time in varying positions in which it is liable to be placed in ordinary service, and must also run true in the cold of winter and the heat of summer. Position and temperature seriously affect the accuracy of a watch unless precautions are taken.

To offset the variation caused by heat and cold the balance wheel of every Hamilton Watch is built of an outer rim of brass and an inner rim of steel, fused together. Thus is the unequal expansion of these metals made use of to scientifically compensate the action of one by the opposite action of the other.

Time compensation is further supplied by tiny timing screws mounted in the rim of the balance wheel. All Hamiltons are adjusted to cold and heat variations, these adjustments being made in a refrigerator

at a temperature of 34 degrees Fahrenheit, and thence to a hot box at 100 degrees Fahrenheit.

When accurate under both conditions, Hamilton Watches are next adjusted to isochronism. This means that the





balance is so regulated that it will not run one bit faster immediately after winding than twenty-four hours later.

This delicate adjustment consists of regulating the stroke of the balance wheel in such a way that the faster the wheel moves the longer the stroke and the slower it moves, the shorter the stroke.

A watch is at one time or another in any one of the following five positions: (1) dial up, or flat on its back; (2) back up, or flat on its face; (3) stem up, or natural position; (4) 3 o'clock up, or as the watch would be if tipped to the left; (5) 9 o'clock up, or as the watch would be if tipped to the right.

On account of the minuteness of adjustments, watch making is a far more difficult art than clockmaking. A ship chronometer, the best timekeeper known, is adjusted to the dial up position only. In view of this fact it is significant that hundreds of jewelers and expert repairmen use a Hamilton Watch as a chronometer.



Accuracy of this kind has caused the Hamilton to be much sought after by men and women who prize timekeeping qualities in a watch.

Yet, due to the extraordinary care that is taken in the production of each Hamilton, it will never be a watch that you will see everywhere. It will always possess an exclusiveness peculiar to precise mechanical instruments of the very highest grade.

Only from four to five hundred Hamiltons are made each day. This is all that over nine hundred master watchmakers in the Hamilton factory can produce.

But this limited output is at the same time a safeguard. It *insures* the quality of the Hamilton Watch that *you* purchase, and enables the Hamilton Watch Company to give a broad guarantee with every watch sold.

When you buy a Hamilton you can do so with the profound assurance that you are buying a watch that will, with proper care, give you accurate time for long years to come.

# HOW YOU SHOULD TREAT YOUR HAMILTON WATCH

"She's human as you are
You treat her as sich"

—Kipling.

THE best way to carry your Hamilton is on a "T" chain, with the watch resting in your vest pocket. But whatever style of chain or fob you wear, the main point to consider is that you carry your watch in a secure pocket, where it will not be knocked every time you move.

See that your watch pocket is free from dirt and lint—and keep it so. Avoid opening the back of the case. If you must open it let it be done in a place where there is no dirt or moisture.

If there is anything the matter with your timekeeper, don't try to put it in order yourself—take it straight to your jeweler. All jewelers know the Hamilton, and if one of the tiny parts is broken he can replace it with a genuine replica of it. All Hamiltons are standardized, so insist on having repairs made with *genuine Hamilton material*.

It is better, too, to have your jeweler set and regulate your watch. He charges nothing for this service and is glad to render it.

You can get the best results by winding your watch at the same time every day, preferably in the morning. By so doing you prepare your watch for the jolts of daytime use.

Your watch is better off in your pocket at night than under the pillow. In fact, if it holds the same position it had in daytime, the pocket is the best place for it. Your watch will then be in "12 up" position, and in a far safer place than under the pillow, where it is always in danger of being dropped to the floor.

Ask your jeweler to look at your Hamilton about every eighteen months (wrist watches about once in every nine months) as it should be cleaned and oiled at least once in that time. If possible, go to the jeweler who sold you your Hamilton for he is always interested in its performance.

The jeweler who sells Hamiltons expects to give Hamilton service.

He will gladly adjust the watch to your personal habits and see that it keeps time for you in a satisfactory manner.

The guarantee made by the Hamilton Watch Company is also made by the jeweler from whom you purchase, and this guarantee is the broadest possible one that can be made. It is nothing less than *complete satisfaction to you*. Select the model of your choice from the following catalog pages. Then go to your jeweler and tell him your choice is such and such a Hamilton—the watch whose record for service is universally known—the watch that is justly considered as peerless among the fine timekeepers of the world.







The "Newton" Case

# HAMILTON No. 920

America's Most Accurate Thin Watch

NATCH may be valuable for its beautiful and rare case alone, but the real and permanent value lies most in its timekeeping qualities.

The best watch is undoubtedly the one which keeps time most accurately and dependably. This quality is inherent in every Hamilton—all Hamilton Watches are first of all accurate timekeepers.

Experts have pronounced the Hamilton No. 920 to be the most accurate 12-size watch made in America. It is built to meet the demand for thinness and aesthetic beauty; yet constructed with as much care as the most accurate chronometer.







The "Byron" Case

No. 920-12-size, open face, white gold finish, bridge movement, pendant set, 23 extra fine ruby jewels in gold settings, patent motor barrel, gold train, steel escape wheel, double roller escapement, sapphire pallets, micrometric regulator, Breguet hairspring, compensation balance, adjusted to temperature, isochronism and five positions. Sold cased only as follows:

Masterpiece 18k Extra Heavy White Gold, hand made and

Extra Heavy 18k Yellow or Green Gold Plain. Extra Heavy 14k Yellow or Green Gold Plain.

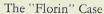
14k Yellow or Green Gold Plain.

14k Green or White Gold "Byron" Engraved. 14k Green or White Gold "Newton" Engraved. 14k Green or White Gold "Frodsham."

Permanent "Lancaster" Engraved Green or White Gold

Permanent "Florin" Engraved Green or White Gold Filled. Permanent Plain, Yellow or Green Gold Filled.







Permanent Plain Case

# HAMILTON No. 900

An Accurate Timekeeber of Consummate Beauty

White gold finish, 12 size, bridge movement, open face, pendant set, 19 extra fine ruby jewels in gold settings, patent motor barrel, gold train, steel escape wheel, double-roller escapement, sapphire pallets, micrometric regulator, Breguet hairspring, compensation balance, adjusted to temperature, isochronism and five positions. Sold cased only as follows:

Extra Heavy 14k Yellow or Green Gold Plain.

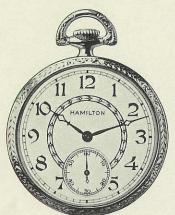
14k Yellow or Green Gold Plain.

14k Green or White Gold "Byron" Engraved. 14k Green or White Gold "Newton" Engraved.

14k Green or White Gold "Frodsham."

Permanent "Lancaster" Engraved Green or White Gold Filled.

Permanent "Florin" Engraved Green or White Gold Filled. Permanent Plain, Yellow or Green Gold Filled.



The "Lancaster" Case



The "Frodsham" Case

# HAMILTON No. 914

Here is Hamilton Accuracy Combined with Beauty at Moderate Price

12-size, nickel, 3/4-plate movement, open face, pendant set, 17 extra fine ruby jewels in gold settings, steel escape wheel, double-roller escapement, sapphire pallets, micrometric regulator, Breguet hairspring, compensation balance, adjusted to temperature, isochronism and three positions. Sold cased only, as follows:

14k Yellow or Green Gold Plain

14k Green or White Gold "Byron" Engraved.

14k Green or White Gold "Newton" Engraved.

14k Green or White Gold "Frodsham."

14k Green or Yellow Gold "Rembrandt" Plain or Engraved.

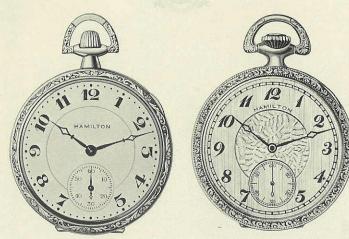
14k Green or Yellow Gold "Hamlet" Plain.

Permanent "Lancaster" Engraved Green or White Gold Filled.

Permanent "Florin" Engraved Green or White Gold Filled.

Permanent Plain, Yellow or Green Gold Filled.





The "Fulton" Case

The "Franklin" Case

# HAMILTON No. 910

A model that meets the demand for an accurate thin watch at a price within reach of everyone. It is built up to the Hamilton standard of performance.

12-size, nickel, 3/4 plate movement, open face, 17 fine jewels in settings, double roller escapement, micrometric regulator, Breguet hairspring, compensation balance, adjusted. Fitted, timed and adjusted in a 25-year, gold-filled case. Sold cased only as follows:

25-yr. "Franklin" Engraved, Green or White, Gold Filled.

25-yr. "Fulton" Engraved, Green or White, Gold Filled.

25-yr. Plain Yellow or Green, Gold Filled.



# There Is a Fine Sense of Pride In the Ownership of a Hamilton Watch

A Hamilton Watch has character. It gains your respect by reason of its thorough reliability. Year after year it will serve you, combining in high degree the stern quality of accuracy, with beauty such as was dreamed of by old masters of the craft.

All Hamilton cased watches are sold in beautiful display boxes. Place your watch in this case when you are not wearing it.

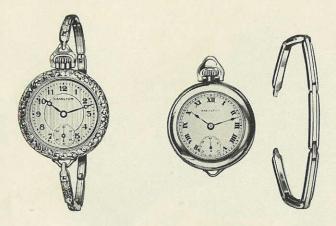


# MILADY'S WATCH OF ACCURACY

Here is a watch that is far more than an ornament. It is a watch for the woman who wants accuracy and beauty blended in a timepiece that will really give service.

Milady's Watch of Accuracy is a seventeen extra fine ruby and sapphire jewel movement, with double roller escapement, sapphire pallets, Breguet hairspring, and compensation balance.

The woman who carries this watch has the satisfaction of knowing that she owns a watch by which her friends will set their watches.



You can choose from the Silk Ribbon or Gold Bracelet Models in Plain or Engraved styles as follows:

14k Engraved White, Green or Yellow Gold. 14k Plain, Yellow or Green Gold. Gold Filled, Engraved, White, Green or Yellow. Gold Filled, Plain, Green or Yellow.

The Bracelet Model is recommended for women Technicians and Nurses, as it is fitted with a seconds dial, and the Gold Bracelet can easily be detached and sterilized.

There is no gift more fitting for a girl entering school or training. Sportswomen will appreciate its accuracy; in fact whatever your activities, at home or in the world of business, Milady's Watch of Accuracy will keep you to schedule.



# THE HAMILTON WRIST WATCH FOR MEN

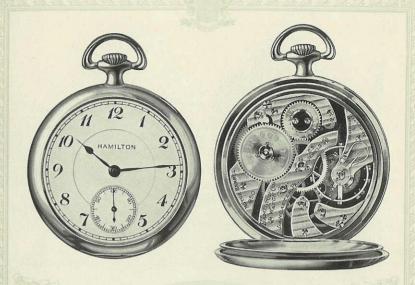
Golfers, Motorists, Traveling Men, Foresters, Civil Engineers, Army and Naval Officers, and Aviators endorse this phenomenally accurate Hamilton Model No. 981.

Nickel, 3/4 plate movement, 17 fine jewels in settings, Breguet hairspring, double roller escapement, sapphire pallets, compensation balance, adjusted and cased as follows:

Sterling Silver Cushion Shape Leather or Webb Strap, Plain or Luminous Dial.

14k Gold Cushion Shape Leather Strap, Plain or Luminous Dial.

This model is being used in increasingly large numbers as a trophy in Golf, Tennis and Trapshooting tournaments.



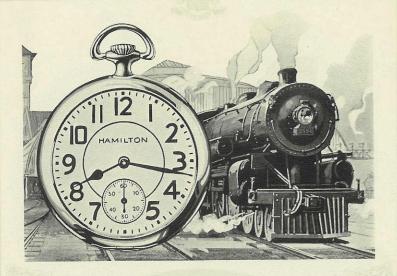
# HAMILTON No. 950

A 16-size Watch of Phenomenal Accuracy and Dependability White gold finish, bridge movement, pendant or lever set, 23 extra fine ruby and sapphire jewels in gold settings, patent motor barrel, gold train, escapement cap jeweled, steel escape wheel, double roller escapement, sapphire pallets, Breguet hairspring, micrometric regulator, compensation balance, double sunk dial, adjusted to temperature, isochronism, and five positions. Open face. Sold cased as follows:

Extra Heavy 14k Gold Plain or Engine Turned. Heavy 14k Gold Plain or Engine Turned. Permanent Gold Filled Plain or Engine Turned. Permanent Gold Filled Swing Ring Plain or Engine Turned.

This is the watch that timed the first American battle of the Great War, being used as the master timepiece at the battle of Cantigny, May 28th, 1918. By the Hamilton 950 all officers' watches in the Division were set, and by it the commander gave his orders and infantry advances were carried out.

It is without an equal among fine timekeepers



# The Railroad Timekeeper of America

Hamilton Movement No. 992

This is the watch that is found in the engine cab of America's fast trains—and wherever accuracy is needed in railroad service. Sold as movement only and fully described on movement page.

Hamilton No. 956 An Accurate 16-size Complete Watch

Nickel, 3/4 plate movement, open face, pendant set, 17 fine jewels in settings, micrometric regulator, Breguet hairspring, compensation balance, adjusted. Sold cased only as follows:

25-yr. Yellow Gold Filled, Plain or Engine Turned Case.

25-yr. Green Gold Filled Plain Case.

25-yr. "Homer" Engraved Green Gold Filled Case.

## HAMILTON MOVEMENTS

16 and 18 Size

Sold as Movements only, cased by your jeweler to suit your requirements.

#### No. 950 Open Face

White Gold Finish, Bridge Movement, Pendant or Lever Set, 23 Extra Fine Ruby and Sapphire Jewels in Gold Settings, Patent Motor Barrel, Gold Train, Escapement Cap Jeweled, Steel Escape Wheel, Double Roller Escapement, Sapphire Pallets, Breguet Hairspring, Micrometric Regulator, Compensation Balance, Double Sunk Dial, Adjusted to Temperature, Isochronism, and Five Positions.

#### No. 952 Open Face

White Gold Finish, Bridge Movement, Pendant or Lever Set, 19 Extra Fine Ruby and Sapphire Jewels in Gold Settings, Patent Motor Barrel, Steel Escape Wheel, Double Roller Escapement, Sapphire Pallets, Micrometric Regulator, Breguet Hairspring, Compensation Balance, Double Sunk Dial, Adjusted to Temperature, Isochronism, and Five Positions.

### No. 992 Open Face

Nickel, ¾ Plate Movement, Pendant or Lever Set, 21 Extra Fine Ruby and Sapphire Jewels in Gold Settings, Double Roller Escapement, Sapphire Pallets, Gold Center Wheel, Steel Escape Wheel, Micrometric Regulator, Breguet Hairspring, Double Sunk Dial, Compensation Balance, Beautifully Damaskeened, Adjusted to Temperature, Isochronism, and Five Positions.

No. 993 Hunting, same as above, Pendant Set only

### No. 996 Open Face

Nickel, ¾ Plate Movement, Lever Set only, 19 Fine Ruby and Sapphire Jewels in Gold Settings, Motor Barrel, Double Roller Escapement, Steel Escape Wheel, Sapphire Pallets, Micrometric Regulator, Breguet Hairspring, Double Sunk Dial, Compensation Balance, Adjusted to Temperature, Isochronism, and Five Positions.

#### No. 972 Open Face

Nickel, ¾ Plate Movement, Lever Set only, 17 Extra Fine Jewels in Gold Settings, Double Roller Escapement, Sapphire Pallets, Steel Escape Wheel, Micrometric Regulator, Breguet Hairspring, Compensation Balance, Double Sunk Dial, Adjusted to Temperature, Isochronism, and Five Positions.

#### No. 978 Open Face

Nickel, 3/4 Plate Movement, Lever Set only, 17 Extra Fine Jewels in Settings, Double Roller Escapement, Sapphire Pallets, Steel Escape Wheel, Micrometric Regulator, Brequet Hairspring, Compensation Balance, Double Sunk Dial, Adjusted to Temperature, Isochronism, and Three Positions.

#### No. 974 Open Face

Nickel, 3/4 Plate Movement, Pendant or Lever Set, 17 Fine Jewels in Settings, Micrometric Regulator, Breguet Hairspring, Compensation Balance, Adjusted to Temperature, thoroughly well finished.

No. 975 Hunting, same as above, Pendant Set only

#### 18 Size

#### No. 940 Open Face

Nickel, 21 Extra Fine Ruby and Sapphire Jewels in Gold Settings, Patent Motor Barrel, Adjusted to Temperature, Isochronism, and Fine Positions, Double Roller Escapement, Steel Escape Wheel, Breguet Hairspring, Compensation Balance, Patent Micrometric Regulator, Double Sunk Dial, Gilt Lettering, Beautifully and Elegantly Damaskeened.

#### No. 924 Open Face

Nickel, 17 Jewels, Breguet Hairspring, Patent Micrometric Regulator.

For additional information address your communications to

HAMILTON WATCH COMPANY LANCASTER, PENNA., U. S. A.

